

CHAPTER 2

THE FORESTS OF CAMEROON IN 2008

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Introduction: The Macro-Economic and Political Context

Cameroon is a unitary republic that in 1992 introduced a multiparty democracy. In an area of 466,326 km², including 6,000 km² of which is water, there is an estimated population of 17.8 million. The population of Cameroon has doubled since 1975 (UNDP, 2008), with a population growth rate of 2.7 % and growing urbanization, estimated at 54 % of the population, putting increased pressure on land. Population density varies significantly across the country. The mostly lowland rainforests of the east (7.5 inhabitants/km²), the south (12.5 inhabitants/km²) and the savanna transition zone in Adamawa (12.6 inhabitants/km²) are sparsely populated, while the more urbanized and mountainous areas in the west (151.7 inhabitants/km²), the north-west (112.5 inhabitants/km²), the coastal plains of Littoral Province (105.2 inhabitants/km²) and the savannas of Far North Province (85.5 inhabitants/km²) have higher population densities.

Higher population density increases pressure on natural resources in Far North, West, South West and Littoral provinces, which are already characterized by widespread soil degradation. Soil degradation is also classified as a major risk in the north-western and central provinces. Pressures on forests differ according to forest type. The forests in the north are primarily used for fuelwood and non-timber forest products (NTFP), while the tropical humid forests are also exploited for timber (MINEP/UNDP, 2007). Although 76 % of Cameroon's energy comes from renewable biomass (UNDP, 2008), continuing soil degradation indicates this energy source is unsustainable if used at current rates. Cameroon's economy is based on agriculture and livestock (44 % of GDP), industry (16 %) and services (40 %) (CIA, 2008). Exports are dominated by oil (49.9 %), but cocoa, cotton and wood (6.5 %) also provide significant income. The Gross National Product (GNP) was \$ 14,494 million in 2004 (UNDP, 2008). It grew 3.2 % in 2006 and 3.6 % in 2008 (UNDP, 2008). In 2005, GNP *per capita* amounted to \$ 2,299; in 2008, it was estimated at \$ 1,995 *per capita* (The Economist, 2008). Despite

the rapid increase in commodity and oil prices, economic growth in 2008 slowed down due to a decline in trade with the EU, growing competition from countries with low costs, under-application of investment budgets, social problems and a difficult economic environment (The Economist, 2008).

The Human Development Index (HDI) for Cameroon (0.532 in 2007/2008) positions the country in the "medium human development" category, 144th place out of 177. There has been little change in factors influencing the HDI over the past decade: life expectancy is 49.9 years; the rate of population with primary, secondary, or tertiary education is 62 %; and the adult literacy rate is 67.9 % (UNDP, 2008). The poverty line, which was established at CFA 533⁷ per day in 1996, was revised upwards to CFA 637 per day in 2001. However, in 2005, 17 % of the population still lived on less than \$ 1 per day, 50 % with less than \$ 2 per day, and 40 % were under the national poverty line (UNDP, 2008).

Between 1988 and 2000, Cameroon implemented three programs for economic and financial structural adjustment credits with support from the World Bank and the IMF. Of the three programs, the first, in 1981, helped reform forestry and environmental sector law and the third incorporated specific clauses on forest management and logging, including the rationalization of land rights, the benefits for communities, usage rights, taxation systems and public institutions.

In October 2003, Cameroon became eligible for debt relief under the initiative for Highly Indebted Poor Countries (HIPC), and reached the criterion of eligibility in May 2006. It should also be noted that Cameroon's qualification for debt relief under the Multilateral Debt Relief Initiative (MDRI)⁸ allowed a 50 % reduction of the total external debt due to the IMF, International Development Association and the African Development Fund (Global Insight, 2007).

⁷ 1 Euro = CFA 655,957

⁸ The Multilateral Debt Relief Initiative (MDRI) provides for 100 percent relief on eligible debt from three multilateral institutions to a group of low-income countries. The initiative is intended to help them advance toward the United Nations' Millennium Development Goals (MDGs), which are focused on halving poverty by 2015. (<http://www.imf.org/external/np/exr/facts/fre/mdrif.htm>).



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Photo 2.1: The large variety of plant species is reflected in the variety of color and structure in the forest canopy.

The April 2003 Poverty Reduction Strategy Document led to a lending arrangement with the IMF's Poverty Reduction and Growth Facility.⁹ This arrangement ended in May 2008 but will be followed by a new instrument of support from the IMF. Governance reform is a major element of all these policies, as Cameroon has consistently ranked poorly on the list of perceived corruption (Transparency International, 2007), despite a campaign against corruption in 2006 and the establishment in 2007 of the Extractive Industries Transparency Initiative.

According to the Ministry of Finance (INS, 2002), the forest sector contributes 6 % to GDP. In addition, this sector generated tax revenues of € 62,101,631 in 2005 and employed around 163,000 people in 2006, with 13,000 employees in the industrial sector (MINFOF, 2008a). The government of Cameroon recognizes that the forestry sector plays an important role in poverty reduction and this sector has been included in the Poverty Reduction Strategy Document¹⁰ (MINFOF, 2008a).

Forest Resources and Land Cover Change since 1990

Forest Areas

Cameroon is triangular in shape and contains a multitude of forest resources. The country is bordered by Lake Chad in the north; by Chad and CAR to the east; by the Republic of Congo, Gabon and Equatorial Guinea to the south; and by the Atlantic Ocean and Nigeria to the west.

The country covers two major climatic areas, the humid equatorial area to the south and the dry area to the north (Neba, 1987). The equatorial humid climate area is located between the second and sixth degrees of latitude north and has two variants. The first variant, the Guinean type, is characterized by abundant rainfall (1,500 to 2,000 mm), a high consistent temperature (25 degrees Celsius) and four seasons (two dry and

two rainy). The second variant is the Cameroon type in the south and south-east of the country. It is characterized by heavy rainfall during one season lasting nine months. The dry/tropical climatic domain also has two variants. The humid tropical climate, or Sudano climate, is characterized by five months of dry season and is between the sixth and tenth parallel north. The Sahel tropical climate covers the basin of the Benue, the plain of Mayo Danay and the Diamare. It extends to Mount Mandara and is characterized by a dry season lasting seven months.

A non-negligible part of these forest resources are covered by agro-industry (e.g., Hevea) and agro-forestry (cocoa), which covers 400,000 ha of land in Cameroon (Losch *et al.*, 1991).

⁹The Poverty Reduction, and Growth Facility (PRGF) is the IMF's low-interest lending facility for low-income countries. PRGF-supported programs are underpinned by comprehensive country-owned poverty reduction strategies. (<http://www.imf.org/external/np/exr/facts/prgf.htm>)

¹⁰Poverty Reduction Strategy Papers (PRSP) are prepared by governments in low-income countries through a participatory process involving domestic stakeholders, and external development partners, including the IMF and the World Bank. A PRSP describes the macroeconomic, structural and social policies and programs that a country will pursue over several years to promote broad-based growth and reduce poverty, as well as external financing needs and associated financing sources (<http://www.imf.org/external/np/exr/facts/fre/prspf.htm>).

Table 2.1: Forested area of Cameroon by land cover category

Land cover	Area (ha)
Lowland dense forest	16,467,570
Sub-montane forests (900-1,500 m)	270,540
Mountane forest (>1,500 m)	17,685
Swamp forest	0
Mangrove	120,348
Total dense forests	16,876,143
Forest-cropland mosaic	4,501,395
Forest-savanna mosaic	5,867,865
Dense deciduous forest (Miombo)	105,984
Other plant formations	14,066,352
Cultivated land	4,873,077
Other land uses (town, villages, industrial sites...)	341,766
Total	46,632,582

Source: compilation of land cover data produced by UCL, JRC and SDSU.

Change in Forest Cover since 1990

A recent study of deforestation in Central Africa (Duveiller *et al.*, 2008) estimated that from 1990 to 2000, the net rate of deforestation in Cameroon was 0.14 %, net deforestation being the difference between the average gross deforestation (0.20 %) and gross reforestation (0.06 %). The same study estimates the net rate of forest degradation in Cameroon as 0.01 %. Although this rate of deforestation puts Cameroon in second place after DRC in the Congo Basin, it generally remains low, as does the average rate of deforestation in the Congo Basin.

This rate of deforestation is very different from the FAO estimate for Cameroon, which assigns a rate of deforestation of 1 % (FAO, 2007). This difference is mainly due to the fact that the work of Duveiller *et al.* only takes into consideration the dense forest areas of Cameroon (mainly in the south and east), which are very sparsely populated (7 to 13 inhabitants per km²), while FAO takes into account the whole national territory including all woody vegetation (savanna, suburban forest and forest-savanna mosaics). Also, the forest-savanna transition mountainous zones have densities sometimes exceeding 150 inhabitants per km² (see above), with a very active farming sector and a far higher rate of deforestation than in dense forest areas.

The prime factor leading to the loss of forest cover is agriculture, which accounts for more than 80 % of forest cover loss in Cameroon (CARPE, 2005). This includes not only slash-and-burn shifting cultivation, long recognized as a key driver of deforestation in areas of dense forest (Ndoye and Kaimowitz, 2000), but also cash crops, most notably cocoa. The cocoa crop has been promoted by the state from independence up to the 1980s with considerable impact on forest integrity in Cameroon (World Bank, 2008). After cocoa crop cultivation ran out of steam in the 1990s, Cameroon revitalized the program in 2005 to extend cocoa crops at the expense of forests. Fuelwood harvesting, which is often linked to agriculture and associated population increase also poses a threat to forest integrity.

Another important factor causing forest loss and degradation in Cameroon is illegal forest logging to produce timber, which takes place mainly in the informal sector. Indeed, Cerruti and Tacconi (2006) considered that informal logging removes approximately 540,000 cubic meters of wood annually without state supervision or monitoring. Uncontrolled illegal logging on such

a scale without planned infrastructure will clearly have negative impacts on forest cover.

Mining represents a final emerging factor which may have a growing negative impact on the forest sector. From independence through 2000, mining contributed only marginally to Cameroon's economy, despite existing evidence of minerals. Since the beginning of this decade, there has been growing interest in the mineral resources of Cameroon, especially from US and Chinese companies, which will require the creation of major transport infrastructure covering hundreds even thousands of kilometers in dense forest areas. Already, Geovic, a US-based mining company has mining permits inside the permanent forest domain of Eastern Province.

In contrast, a number of developments since 2000 have had favorable impacts for the stabilization of forest cover in dense forest areas of Cameroon. A World Bank report (2008) states "changes in the dimensions and types of forest... new protected areas, forests and hunting areas have been established and are rapidly expanding." A report from a German Technical Cooperation (GTZ) project noted that "while the total forest area decreased, it appears that the establishment of permanent forests in 1994 and better controls over the past few years have produced a positive effect from 2003... Between 2002 and 2005 the decreasing trend in forest area has slowed down" (GTZ-MINFOF, 2006). Thus, the adoption of a land use plan in Cameroon and the implementation efforts underway have helped stabilize forest cover.



Photo 2.2: For the transportation of logs, rivers can be obstacles or a means of transportation.

Legal and Institutional Framework for Managing Biodiversity Resources

Legal Framework

The State is the main body in charge of forest management in Cameroon as it defines the general policy of the forestry sector and laws, and grants logging rights. The previously existing law on environmental management (1981) has been reformed comprehensively by two laws, one in 1994¹¹ and the other in 1996,¹² which define the new legal framework for environmental management.

These laws, combined with a series of implementing measures developed since 1996, define access to forest resources, including customary rights for traditional and aboriginal users, forest areas, the system of title allocation, sustainable logging practices, taxation, protection and management of flora and wildlife, and the institutional framework.

The purpose of restructuring the legal framework was to convert the forest sector into a crucial sector for poverty reduction and a major source for industrialization and exports from Cameroon. During the past two years, amendments

have been made to allow laws to address conflicting issues such as the reclassification of protected fauna,¹³ the forestry system,¹⁴ the classification of special forest products¹⁵ and small-scale forest logging permits.¹⁶ The forest logging regime in Cameroon currently recognizes nine different logging titles (see table 2.3).

The distinction between the permanent and non-permanent forest estate is made for the time being by a legal framework still under revision, including, among others, a land tenure law (1979),¹⁷ a decree on land use (1995),¹⁸ and the Forest Act of 1994. The area of permanent forest domain maintains the forest and/or wildlife habitat permanently, while the non-permanent forest domain is made up of forest land which can be used for multiple other purposes. Under article 22 of the 1994 Act, the permanent forest estate should cover at least 30 % of national territory and represent the ecological diversity of the country. The different types of forests included in the permanent and non-permanent forest areas are listed in table 2.2.

Table 2.2: Area cover by forest type according to the official classification of the zoning plan in cameroon

Forest type	Total area (ha)	Value relative to the total forest area (%)
Production forests	7,574,280	34
Protection, recreational, educational and research forests, reforestation perimeter, natural ecological reserves	931,398	4
Botanical gardens	44	
National parks	2,682,407	12
Wildlife reserves	702,995	3
Hunting zones	5,465,467	24
Zoological gardens belonging to the State	8	
Wildlife sanctuaries	254,342	1
Council forests	437,354	2
National forest domain	4,475,437	20
Total	22,523,732	100

Note: the national forest domain belongs to the non-permanent forest domain and can be converted into other land use types.

Source: MINFOF, 2008c.

The permanent area includes forests that are classified and those which are going to be classified. These include production forests and protection forests in the public or private domain.

Protection forests include protected areas, for which there are eight levels of protection. Four of the category levels – reserves, biospheres, national parks and botanic gardens – allow research,

¹¹ Law N° 94/01 of 20 January 1994 on Forestry, Wildlife and Fisheries.

¹² Law N°96/12 of 5 August 1996 relating to Environmental Protection.

¹³ Decree N°0648/MINFOF of 18 December 2006 establishing the list of animals in protection categories A, B and C, and Decree N°0649/MINFOF of 18 December 2006 describing the distribution of animal species whose killing is authorized as well as the latitude of killing per type of sports hunting permit.

¹⁴ Decree N°2006/ 0129/PM of 27 January 2006 modifying and completing some provisions of decree N°95/531/PM of 23 August 1995 establishing the modalities for implementing the forest regime, and Decree N°2007/0342/PM of 7 March 2007 modifying and completing some provisions of decree N° 95/531/PM of 23 August 1995 establishing modalities for implementing the forest regime.

¹⁵ Decision N°0336/D/MINFOF of 6 July 2006 establishing the list of special forest products of particular interest to Cameroon.

¹⁶ Circular N°0131/LC/MINFOF/SG/DF/SDAFF/SN of 20 March 2006 relating to the procedures for issuing and monitoring small-scale logging permits.

¹⁷ Law N° 79/05 of 29 June 1979 pertaining to the land and estate regime.

¹⁸ Decree N°95-678 PM of 18 December 1995 instituting the land use reference framework.

(eco) tourism and education but not logging. The other types of protected areas, wildlife reserves, forest reserves and forest and marine sanctuaries, exclude hunting and fishing operations. The permanent domain also includes community forests that are in the private domain of a municipality. The new decentralization laws of July 2004,¹⁹ which *inter alia* concern communal environmental action plans, forest regeneration actions and the possibility of creating municipal forests, will have an impact on the management of the environment and forests both at the provincial and local levels.

The non-permanent forest (also called “agroforestry zones”) includes community forests. These forests with an area of up 5,000 ha, and for which a community develops and agrees on a management plan for development in collaboration with the Ministry of Forestry and Wildlife (MINFOF) for a maximum period of 15 years, give communities access and logging rights and oblige participatory management of forest resources in and around villages. Other forests in the national domain (including private forests) can be allocated to other uses and are managed to benefit local communities or private individuals.

Institutions and Capacity

MINFOF is the main institution responsible for the sustainable management of forests and wildlife. It includes 870 employees, 30 % of them with college degrees. The Ministry was created in 2004 together with the Ministry of Environment and Protection of Nature (MINEP), both stemming from the Ministry of Environment and Forests (MINEF), which was established in 1992. The National Agency for Forest Development (ANAFOR), which replaced ONADEF in 2001, aims at supporting forest regeneration. The main ministry policy is defined in the Forest Environment Sector Plan (PSFE). This program was finalized with support from international partners in 2003 and has been operational since 2004. This program is supported by: 1) government funds (in 2007, CFA 5.2 billion); 2) financial support from the World Bank, GEF, the International Development Association and the United Kingdom through a mechanism for direct budget support to the Ministry of Finance (in 2007, CFA 6.4 billion); 3) contributions from the HIPC initiative (for the RIGC project²⁰); and 4) a common fund financed and managed by international donors. PSFE also serves as a guide for local and international NGOs as well as for bilateral partner activity (MINFOF, 2008a).

Cameroon has signed most bilateral and multilateral conventions and agreements applicable to the forestry and environmental sector. It ratified the 1971 Convention on Wetlands of International Importance and identified a number of Ramsar sites in 2006. Cameroon has also been a signatory of the *Commission des Forêts d’Afrique centrale* (COMIFAC) since 2005.



Photo 2.3: Undergrowth along the ascent of Mount Cameroon.

There is still no final report describing the degree of involvement, nor the budget level, of civil society, the private sector, research institutions and the media in the establishment of the PSFE. However, the implementation of a few initiatives in 2006 to broaden participation of stakeholders in PSFE, such as the Facility for Forest Governance and the multi-party parliamentary group for conservation, suggest that involvement generally remains low.

In 1994, two special funds were created: the Special Fund for Forestry Development (FSDF) to fund the management, conservation, restoration and development of forest resources; and the Special Fund for Wildlife (FSF) to support management and equipment of protected areas and wildlife conservation.

Since 2006, the institutional reforms under the PSFE included the recruitment of 1,550 new employees to replace the aging workforce and to enhance its quality and capacity for innovation. These reforms were complemented by anticorruption initiatives and by a capacity-building program for employees through the development of a strategy to link the PSFE and research organizations. The National Program for Environmental

¹⁹ Law N° 2004/017 of 22 July 2004 on Orientation and Decentralization; Law N° 2004/018 of 22 July 2004 establishing the rules that apply to communes; Law N° 2004/019 of 22 July 2004 establishing the rules that apply to regions.

²⁰ Project to enhance community management initiatives on forest and wildlife resources

Management, adopted in 1996, implemented by MINEP and for which a review process was initiated in December 2006 (MINEP/UNEP/APREN, 2006), forms a complementary policy to PSFE.

Regional institutions have played an increasingly important role in the national forest sector, focusing particularly on harmonizing laws and establishing standards for information exchange. Cameroon hosts the COMIFAC Secretariat, plays an active role in the Congo Basin Forest Partnership (CBFP), and is a member of the Conference on the Ecosystems of Forests and Wetlands of Central Africa (CEFDHAC), an initiative launched in 1998 and supported by IUCN.

A number of institutions are dedicated to providing the necessary academic and professional training for the forestry sector. The *École nationale des Eaux et Forêts* (ENEF), based in Mbalamayo and established in 1949, offers professional training in forestry management for students, most of whom will go on to become civil servants. The *École de Faune* in Garoua, established in 1970, provides a similar education but focuses on wildlife management. The Universities of Buea (Environmental Science), Dschang (FASA-DEPFOR, CRESA, Faculty of Science), Yaoundé I (Faculty of Science), Yaoundé II (Faculty of Economics), Douala, the Catholic University of Central Africa and Ngaoundéré all offer programs from undergraduate to doctoral levels, in fields linked to the forest sector such as the environment, politics,

economics and agroforestry. Polytechnic institutions specializing in technical aspects of forestry, such as CRESA and technical schools, also provide practical training.

The research sector falls under the authority of the Ministry of Scientific Research and Innovation (MINRESI) and is largely driven by the Institute of Agricultural Research for Development (IRAD), with programs covering ecosystems, wildlife, flora, land, forestry, and agroforestry. Other institutions whose activities are relevant to forestry, with programs such as anthropology, sociology, hydrology, ecology, mapping, or health, include the Institute of Medical Research and Medicinal Plants (IMPM), the *Institut de Recherche pour le Développement* (IRD), and the *Institut national de la Cartographie* (INC).

In general, national educational institutions lack capacity and resources for research and training. The results of their research are poorly valorized and research programs are insufficiently tailored to the priorities of the sector. International organizations such as CIFOR, ICRAF, CIRAD and Tropenbos are also active in Cameroon. A review of potential links between academic and research institutions has identified practical ways to involve the educational sector in the PSFE strategy so that research focuses on collaboratively pre-identified PSFE priorities and assures better, more formalized and more institutionalized coordination among stakeholders (MINFOF, 2008b).

Forest Logging and the Timber Sector

Typology of Forestry Titles

In 2008, nine different types of forest title (table 2.3) could be granted by the Ministry of Forests.

Table 2.3: Types of forest title

1	Harvesting permit for timber
2	Harvesting permit for special products
3	Harvesting permit for firewood and poles
4	Personal harvesting authorization
5	Timber recovery permit (timber salvage authorization and timber removal authorization)
6	Community forest
7	Sales of standing volume
8	Council forest
9	Timber concession

Source: compiled by the authors, based on the 1994 Act pertaining to Forestry, Wildlife and Fisheries.

Under the 1994 Act, logging permits (types 1, 2, 3) are permits to operate or to collect well-defined quantities of forest products in a given area. These products may be special products, volumes of raw timber not in excess of 500 m³, or firewood and poles extracted for profit. Operating permits for timber and some special forest products on a list drawn up by the forestry authority are granted after notice from a competent committee for a maximum period of one year non-renewable. For other special forest products, firewood and poles, logging permits are awarded by mutual agreement by the Minister of Forests.

A personal harvesting authorization (type 4) is an authorization issued to an individual for personal and non-profit use to collect wood volumes that cannot exceed 30 m³ gross. This provision does not apply to forest residents who retain their customary rights. The personal harvesting authorization is granted by mutual agreement for a period of three months non-renewable.

Timber recovery permits (type 5) may be issued as part of a development project likely to cause disruption or destruction in a forest. These permits are only issued after a prior environmental impact assessment has been conducted by the applicant in compliance with norms set by the environmental authority.

Community forests (type 6) are granted for a maximum area of 5,000 ha. Logging takes place on behalf of the community--by local government control (*"en régie"*)-- by sales of felled timber, by personal logging authorization or by permit, in accordance with a simple management

plan approved by the forest authority. Any community wishing to manage a community forest must hold a consultation meeting, including all stakeholders from that community, to designate a management officer and to define the objectives and limits of that forest.

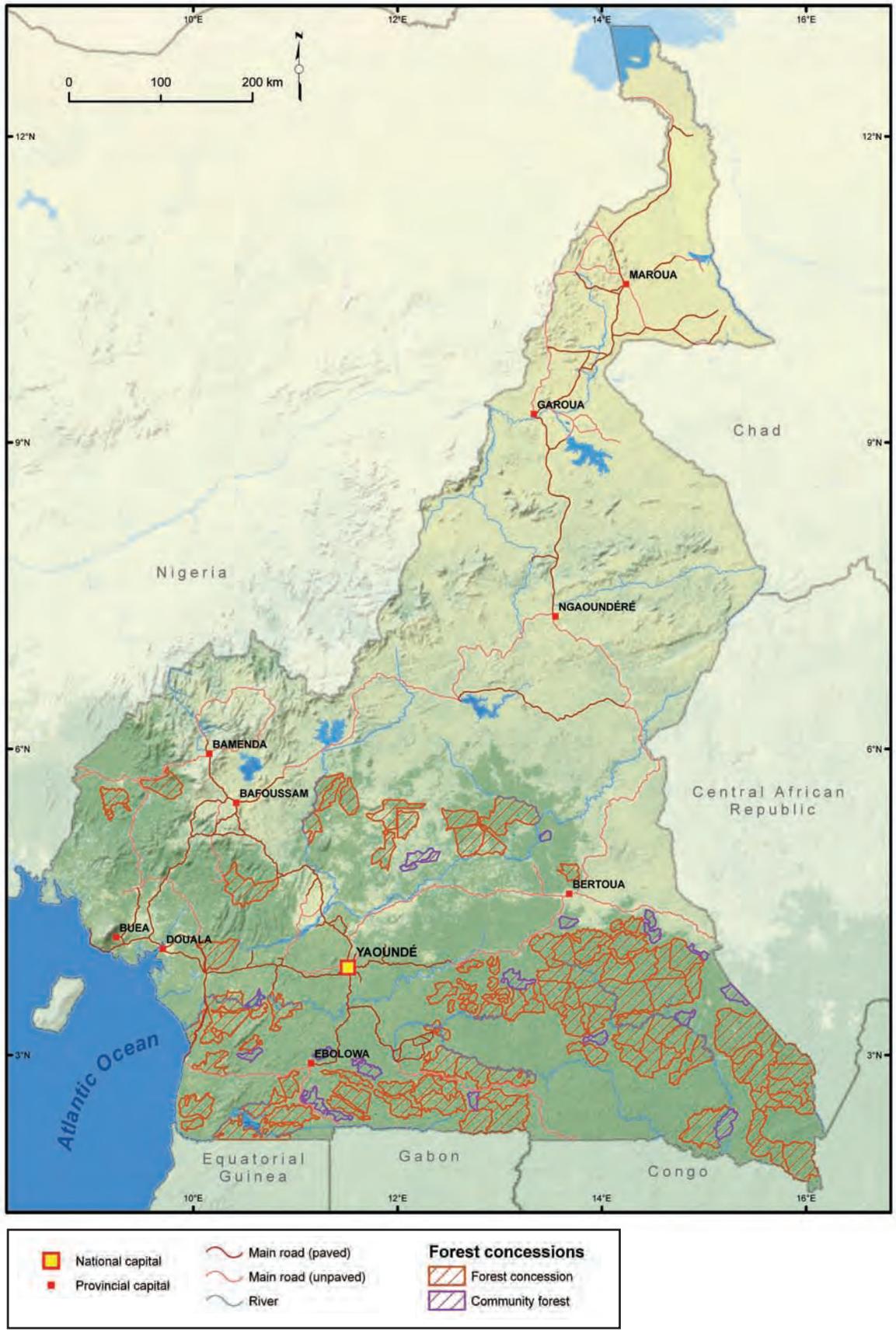
Under the 1994 Act, sales of standing volume (type 7) in a national forest area is a license to log in an area that does not exceed 2,500 ha or a specified volume of standing timber for sale. Any allocation of sales of standing volume in a forest domain must be preceded by a public call for tender. Sales of standing volume are allocated based on a notification from a relevant committee, for a maximum period of three years non-renewable.

Council forests (type 8) have a management plan approved by the forestry authority. The management plan is established at the behest of the heads of municipalities, and any activity must comply with it. Forest products of any kind resulting from operations in council forests belong exclusively to the municipality.

Timber concessions (type 9) are assigned after notification from an Inter-ministerial Committee, and following a public call for tender. The concessions belonging to one company may not exceed a total area of 200,000 ha. Once the concession is attributed, the company signs a provisional agreement for a 3-year concession contract during which a plan for the sustainable management of the concession must be prepared by the company and approved by the Forestry Administration. Concessions are granted for a period of 15 years renewable.



Photo 2.4: Sawmill for salvaged wood.



Source: WRI and FORAF
 Figure 2.1: Forest concessions in Cameroon

Formal Logging in Natural Forests

In 2006, total national production reached 2,296,254 m³. The most exploited species are listed in table 2.4.

The various logging titles (table 2.3) contribute differently to the total annual production. According to the national land use plan, the total area planned for Forest Management Units (FMU) is about six million hectares. However, active logging is only taking place in Annual Cutting Areas (AACs) established by the Ministry. In 2007, only 91 AACs were active, covering an area of approximately 248,000 ha. In 2006, FMUs produced approximately 1.7 million m³. In addition to the FMUs, council forests, sales of standing volume and timber recovery permits produced 210,000 m³, 275,000 m³ and 155,000 m³ of timber, respectively. The same year, ten companies²¹ produced an estimated 829,000 m³ of wood by using these logging titles, i.e. about 36 % of the total annual production of about 2.3 million m³.

In 2008, six council forests, covering an area of about 141,000 ha were allocated. Four of them are logging timber through an approved management plan for a total area of 110,000 ha. The same year, 177 community forests were allocated (for an area of 632,000 ha), and 143 of these forests had an approved simple management plan, covering an area of 546,000 ha. No data were available on the contribution of community forests to the national timber production. In 2008, timber recovery permits covered an area of 38,000 ha.

In 2007, 2,859 ha of plantations were established (by ANAFOR, a few NGOs and some private organizations) bringing the total area of forest plantations in Cameroon to 17,133 ha.

The same year, a total volume of 968,490 m³ was exported from the port of Douala. Logs accounted for 266,000 m³ of exports, sawn timber

Industrial Timber Processing

In 2007, 51 industrial mills were active plus 9 veneer and plywood units. Total processing capacity was estimated at around 2.2 million m³ in 2007. Cameroon has enforced a partial embargo on log exports since 1999 in order to increase the

Table 2.4: The ten most logged species in the formal sector in Cameroon in 2006

Species	Percentage
1: Ayous/obéché	34.84
2: Sapelli	16.43
3: Tali	6.96
4: Azobé/bongossi	5.11
5: Iroko	3.9
6: Okan/adoum	3.82
7: Fraké/limba	3.77
8: Movingui	2.22
9: Kossipo/kosipo	1.98
10: Red padouk	1.97

Source: MINFOE, 2008c.

for 613,000 m³ and veneer and plywood for 89,490 m³. On the whole, sawn timber exports grew compared to 2006 (601,000 m³), but remained lower than in 2005 (660,000 m³). On the other hand, log exports dropped in 2007 compared to 2006 (316,000 m³), but are much higher than exports in 2005 (146,000 m³).

As for special products, in 2006, around 2,378,808 kg were exported. These exports are divided into 1,059,080 kg of pygeum, 566,980 kg of ebony, 377,295 kg of yohimbe, 356,663 kg of voacanga and around 18,000 kg of coal.

The European Union remains the preferred partner for exports of processed products (sawn timber, veneer and plywood), importing in 2007 81 % of exported products from Cameroon. On the other hand, 77 % of log exports from Cameroon go to countries other than the European Union, mainly China.

share of national production processed locally. Since 1999, only a few species can be exported in the form of logs, and for some of them, such as ayous, annual quotas are established and granted to logging companies.

²¹ GRUMCAM, Pallisco, STBK, CFC, CUF, SEFAC, GWZ, CIBC, SIBAF and SFID, in diminishing order of production.

Informal Sector

According to the grey literature, informal timber production in Cameroon, i.e. production without logging title or with unrecorded logging titles in official statistics by national artisanal loggers, amounts to about 1 million m³ (see e.g., Plouvier *et al.*, 2002).²²

Unfortunately, despite the importance in terms of the volume produced and the impact of this sector on employment and local standards of living, the domestic timber market is not yet formally regulated.

Progress Towards the Sustainable Management of Production Forests

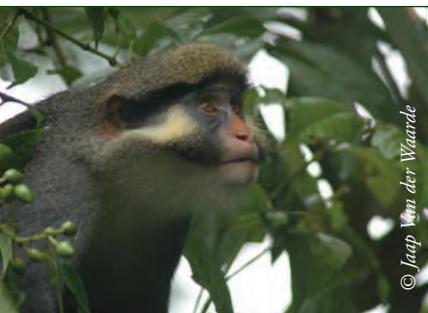
In 2008, 65 concessions had an approved management plan, covering an area of 4,207,862 ha, while 38 concessions, covering 1,866,171 ha, were in the process of preparing their plans. FSC certificates were awarded to 13 concessions as of October 2008, covering an area of about 900,000 ha. Finally, 14 concessions have received an OLB certificate and 7 concessions have been granted a TLTV certificate for an area of about 1.7 million ha.

As the law requires management plans to be reviewed every five years, management plans that have been approved in the past will be re-assessed and likely revised.²³ Since all the FMUs were allocated in 2006, in the short term (3 to 5 years), all logging should be occurring under approved management plans.

It is difficult to predict future trends for forest certification given that the process may be affected by the recent financial and economic crises' impacts on logging companies. Many companies operating in Cameroon were already very advanced in the process in mid-2008, and should be able to achieve FSC certification shortly, but the crisis could negatively impact these companies because they still need to make substantial investments before being ready for FSC certification.

Since 2001, international NGOs have also played a critical role as "independent observers" during the formulating of different forest policies. WRI is assisting the government in monitoring and mapping forest titles and protected areas, as well as for the monitoring and mapping of activities linked to forest activities such as road construction. The British NGO, Resource Extraction Monitoring (REM), and before them Global Witness, works with MINFOF provincial and national brigades to monitor forest activities on the ground. The reports from these missions on the ground are widely distributed. Finally, the role of international partners in the policy dialogue in the framework of PSFE was institutionalized and harmonized by the signing in January 2006 of a code of conduct between MINFOF and 13 NGO partners.

Under the Action Plan on Forest Law Enforcement, Governance and Trade (FLEGT), Cameroon and the EU signed a declaration in September 2007, which should lead to negotiations towards a voluntary partnership agreement to regulate timber trade exchange between Cameroon and the EU. Texts are being developed to incorporate a system of traceability and verification of legal timber and to monitor related tax revenues.



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Photo 2.5: The Red-Eared Guenon (*Cercopithecus erythrotis*), found in low altitude dense humid forests.

Biodiversity Conservation and Development

Biodiversity Components in Cameroon

Cameroon has a considerable diversity of flora, fauna and important ecosystems maintained by a network of protected areas, covering 18.24 % of the country. Protected areas in Cameroon cover tropical forests, dry forests and forest-savanna mosaic. Some wildlife species such as lion, chimpanzee, gorilla, elephant, bongo, and certain species of flora as such as assamela, ebony, the doussie red, sapelli and ayous are explicitly protected by various MINFOF decisions.

If assamela and ebony are fully protected throughout the territory, a license is needed for their extraction. Logging of species such as sapelli and doussie depends on management inventory results to guide their potential exploitation. In general, 90 % of animal species, over 95 % of plant species, about 65 % of habitats and 80 % of ecosystems are represented in this network of protected areas (MINFOF, 2008c).

²² In 2009, a study in progress, led by CIFOR in collaboration with MINFOF, will provide new estimates of the volumes of wood used by the domestic market.

²³ A recent assessment of management plans in Cameroon showed that their quality is still unsatisfactory (Vandenhaute and Doucet, 2006; Cerutti *et al.*, 2008).

The variety of terrain and climate give the country a rich and varied vegetation. There are four major ecosystems (Alpert, 1993):

- dense forest (semi-evergreen or deciduous), divided into 3 main variants: the coastal forest, located in the often-flooded lowlands; the Atlantic forest located between 200 and 900 m altitude; and semi-deciduous forests in the interior (Sayer *et al.*, 1992);

- “humid” savannas, with variations as a function of human pressure;

- altitude forests and grasslands, divided into sub-montane forest (200-900 m), mountain forest (900-3,000 m) and the Afro-subalpine grassland (higher than 3,000 m);

- the northern savannas which include the Sudano-Guinean tree and shrub savannas, wooded savanna and medio-Sudano dry woodlands, and the Sudano-Sahel wooded savanna.

Formal Management of Biodiversity

The protected area system in Cameroon contains 15 national parks covering a total of 2,682,407 ha. This system also contains 6 game reserves, 1 botanical garden, 3 zoological gardens,

4 wildlife sanctuaries and 77 forest reserves. Table 2.5 presents the main forms of formal biodiversity management, as well as total areas, in the permanent domain.

Table 2.5: Main forms of biodiversity protection

Type of protection	IUCN category	Number	Area (ha)
National park	II	15	2,682,407
Wildlife reserve	Ib	6	702,995
Botanical garden	Ia	1	44
Zoological garden	Ia	3	8
Wildlife sanctuary	III	4	94,811
Forest reserve	Ia	77	880,496
ZICGC	VI	22	1,396,382
ZIC	VI	46	4,680,193
Total		174	10,437,336

Source: MINFOF, 2008c.

From 1988 to 1998, the national system of protected areas remained fixed (Doumenge *et al.*, 2001). More recently it underwent a change with the addition of Ma’an and Mbam and Djerem.

In terms of protected area monitoring and control, according to the UCLB-MINFOF annual report (MINFOF, 2007), 1,484 incidents took place in 2007, resulting in 19 legal actions.

In the same year, 302 guns, traps and ammunition, and 22,400 kg of meat were seized.

Efforts are underway to provide protected areas with management plans. As of January 2008, the protected areas of Benue, Dja, Mbam and Djerem, Waza, Korup, Campo Maan, Lobéké and Faro had management plans for a total area of 2,230,430 ha (table 2.6).

Table 2.6: Protected areas with management plans by category

Protected area	Category	Area (ha)	Year when the management plan was adopted
Benue	National park	180,000	2002
Dja Biosphere Reserve	Wildlife reserve	526,000	2007
Mbam and Djerem	National park	416,512	2007
Waza	National park	170,000	1997
Korup	National park	126,000	2002
Campo Ma'an	National park	264,064	2006
Lobéké	National park	217,854	2006
Faro	National park	330,000	2008
Total		2,230,430	

Source: MINFOF, 2008c.

To manage protected areas, the government of Cameroon allocated € 2,355,000 in 2008 and employs 376 senior managers and 391 technicians. In addition, many NGOs (e.g., WWF, WCS), and bi/multilateral structures (e.g., GTZ) also deploy human and material resources to assist the State in its conservation efforts. The GEF budget, for example, is € 2,203,300. Partner support in protected areas in terms of budget assistance is € 325,457 while the budget allocated by conservation partners under the common PSFE fund is € 2,493,902.

The Cameroonian government is also concerned about protecting natural resources located outside protected areas. In forest concessions, measures are taken to protect flora species such as mukulungu, bassam mahogany, white padouk,

the ovengkol/bubinga and parallel naga. The conservation status of these species varies from one concession to the next as a function of the results of management inventories done prior to logging operations.

Hunting laws and regulations cover the entire country and protect some wildlife species such as the elephant, the lion, the python, the gorilla and the chimpanzee in forest concessions. Despite these measures, poaching to provide food for employees and for commercial purposes still occurs in logging concessions. Threats to plant resources mainly involve non-compliance with the list of non-harvestable species, the failure to respect certain minimum diameters, and non compliance with AACs.

Economic Development of Biodiversity

The ecological and cultural diversity of the country is an asset for tourism in Cameroon. Tourism could be a means to develop the forest sector outside of timber, wood crafts and NTFP. Even though Cameroon is trying to valorize biodiversity, specific and ecosystemic, through ecotourism, this sector is still under-developed. In 2007, tourism revenues, i.e. ecotourism in protected and hunting areas, amounted to € 297,260. According to INS (2006), the country has only 19 tourist sites, including 15 parks, 3 zoos and 1 botanical garden as mentioned in table 2.5. The 2006 INS yearbook also indicates that although some protected areas are visited by tourists (e.g., Dja Biosphere Reserve and a future marine park at Kribi), there is a lack of adequate structures to valorize their resources. In 2008, 20 protected areas had information cen-

ters. Following a MINFOF decision of 5 September 2007, 5,465,467 ha were designated as hunting zones (ZICA). These ZICAs correspond to 45 hunting zones, covering 4,069,085 ha, and 22 hunting zones under community management, covering 1,396,382 ha.

In 2007, the country granted 606 hunting permits, in contrast to 244 permits in the previous year. The main wildlife resources in these ZICA are bongos, elephants, buffalos, sitatungas, giant forest hogs and yellow-backed and black dorsal striped duikers. Despite efforts to organize hunting and to valorize the genetic resources through recreational hunting, some illegal behavior, not necessarily by tourists, took place in hunting areas. In 2007, monitoring and control in ZICA and ZICGCs recorded 995 offenses, which resulted in 62 legal actions.



Source: WRI and FORAF
 Figure 2.2: Protected areas in Cameroon

Conclusions

Since the early 1990s, Cameroon has outpaced other Congo Basin countries in developing, adopting and implementing a legal and environmentally progressive forest framework. The most innovative concepts introduced by the Forest Act of 1994, in which sustainable forest management plays a major role, include: 1) the auction, with the participation of independent observers, for the granting of forest concessions in place since 2000; 2) the redistribution of forest taxes to municipalities and rural communities bordering the forest concessions; and 3) the concept of council and community forests. All these novel concepts have not been established at the same pace or with the same success rate, but the ministry's efforts, often supported by national and international partners, have yielded good results in the forestry sector. MINFOF recently admitted that the changes that were made to the forestry sector during the last 15 years had been so broad and vast that it would probably be better to revise and update the 1994 Act completely. The ministry made this task part of its priority agenda for 2009. Until the revision of this Act takes place, the main challenges lie in the continued enforcement of laws and the participation of non-governmental stakeholders in the forestry sector, particularly at local and community level. In 2006, all logging concessions available had been allocated at least once, and in 2008 more than 60 % of the available concessions had an approved management plan. However, the quality of these plans leaves much to be desired. The forest certification process, including FSC, is well underway with certificates awarded to 13 concessions as of October 2008, and other concessions engaged in the process. Log production stabilized over the period 2000-2007 to about 2 million m³, while log exports were overtaken by exports

of processed products after a partial embargo on log exports came into force in 1999. Some species continue to dominate both exports and production (51 % of total production in 2006 consists of only two species, the ayous and sapelli), but there are positive signs that lesser known species, such as okan, are being used. Regarding the adoption of forest management plans and sustainable management of forests, we should mention that recently several mining concessions were awarded in areas already allocated to logging concessions. If communication and data exchange are not maintained between the ministries involved, the mining permits will not only have a negative impact on the forest activities proposed in the management plans but will also create conflicts among the parties involved, both in the public and private sectors.

The will to increase the area covered by protected areas is openly acknowledged by the ministry. The challenge is to make this commitment an operational reality with stakeholders who have an interest in and around protected areas. It is also necessary to find synergies between protected areas and other emerging issues, such as payments for environmental services, in such a way that the interests of the populations can be taken into account. New activities, such as REDD, should constitute an important opportunity for conservation and climate change issues in the country.

The forest-environment sector program has recently experienced some difficulties, especially in terms of spending the allotted budget and implementing and coordinating activities. However, it remains an organic framework which will be gradually adjusted and used to plan the activities of forestry and environmental stakeholders in a strategic, coordinated and participatory fashion.