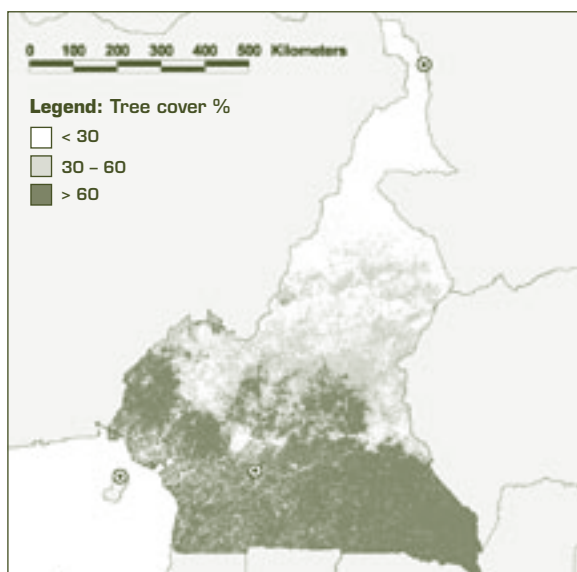


CAMEROON



* Same legend applies to all country maps

Forest resources

Cameroon has a land area of 47.5 million hectares and a population of 15.7 million people. It stretches between latitudes 2° and 13° north from the Gulf of Guinea to Lake Chad. The coastal plain is about 600 km long and 100–200 km wide, its inland limit marked by slopes and steep scarps. The southern plateau, the site of Cameroon's major closed-forest area, is 500–800 m in altitude and the central Adamaoua high plateau is generally 1,000 m or more above sea level. Mt Cameroon (4,095 m) in the south-west is the highest mountain in western Africa and is still an active volcano. Estimates of forest area include 13.3 million hectares^a (GFW 2005) and 23.8 million hectares (50% of total land area) (FAO 2005a).

Forest types. Cameroon's forests are mainly closed tropical broadleaved rainforests of two predominant types: lowland evergreen and lowland semi-deciduous. The closed evergreen forest that formerly covered

the entire coastal lowland has been largely cleared and, where it still exists, consists of secondary forests and degraded primary forests. Inland, semi-evergreen lowland forest gives way to a mosaic of degraded rainforest and secondary grassland. North of this is Sudanian woodland with *Acacia* wooded grassland.

The closed evergreen forests can be divided into two broad categories: the Biafran forest, forming an arc around the Gulf of Guinea, and the Congolese forest farther inland. The Biafran forest in low-altitude coastal areas is characterized by species like *Lophira alata* (azobé) and *Sacoglottis gabonensis*. There is a long-standing trade in timber from this forest, especially in azobé and *Pycnanthus angolensis* (ilomba). The Congolese forest includes closed evergreen rainforest and semi-deciduous forests. The closed evergreen rainforest differs from the Biafran forest in the absence of species of Caesalpinaceae – with the exception of *Gilbertiodendron dewevrei*; another feature is the importance assumed by *Baillonella toxisperma* (moabi). The medium-altitude closed semi-deciduous forests are marked by an abundance of Sterculiaceae such as *Cola* spp, *Eriobroma oblonga* (eyong), *Mansonia altissima* (bété) and *Triplochiton scleroxylon* (ayous). They are particularly rich in commercial species, including various Meliaceae such as *Entandrophragma cylindricum* (sapelli) and *Entandrophragma utile* (sipo).

Dynamics of forest resource change. Annual deforestation in Cameroon in the period 1990–2000 was an estimated 222,000 hectares (FAO 2005a), the main cause being land conversion for small-scale agriculture and agro-industry.

Forest fires occur regularly in the drier northern part of the country. There is some anecdotal evidence of a lengthening of the dry season over the past decade or so^c.

Table 1 PFE

Estimated total forest area, range (million hectares)	Total closed natural forest ('000 hectares) Source: FAO 2001	PFE ('000 hectares)			Total
		Production		Protection	
		Natural	Planted		
13.3–23.8	19,985	8,840	17	3,900*	12,757

* Source: GFW (2005)

Permanent forest estate. The forest law of 1994 divides the forest area into permanent and non-permanent forest areas (*domaine forestier permanent et non permanent*). The permanent forest includes the categories forest reserves, protected areas and council forests; non-permanent forest includes communal forest, community forest and private forest. Cameroon has an estimated 12.8 million hectares of natural-forest PFE, comprising 8.84 million hectares of production forest (including council forests, the objectives of which may vary between councils) and 3.90 million hectares of protection forest (Table 1). Article 22 of the 1994 forest law requires that the PFE covers at least 30% of the national territory (ibid.).

Planted forests. Planted forests cover about 17,000 hectares in Cameroon. Most have been established by the state; no information is available about private planted forests. There are extensive agro-industrial plantations, including an estimated 42,000 hectares of rubber (FAO 2001).

Institutional arrangements

Forest tenure. Most forest land in Cameroon belongs to the state. The permanent forest in the main forest zone in the south is nearly all state-owned under the categories of timber production, protected and protection forests. About 345,000 hectares of closed forests are communal forests. According to the 1994 forest law, forests outside the PFE exist in three ownership categories: community forests, communal forests and private forest. Generally, people living in forest areas fully retain their traditional user rights in their communal areas within both non-permanent and permanent forests. Stakeholder disputes over forest ownership and the demarcation of boundaries are common (GFW 2005).

SFM policy framework. Various C&I systems have been prepared for or tested in Cameroon's forests, including ITTO's C&I, the C&I toolkit of the Center for International Forestry Research (CIFOR), and more recently the ATO/ITTO PCI. A national multi-stakeholder working group developed the basis for national C&I that are compatible with FSC standards. However, none of these processes has so far been implemented beyond experimental field-testing and capacity-building. Cameroon participated in the

development of the convergence plan for forest management in the Congo Basin, which was endorsed by a conference of African heads of state in March 1999; this plan aims to increase coordination and cooperation among countries of the Congo Basin in all activities relating to forests.

Forest policy and legislation. A new forest policy prepared by a coalition involving the ministry in charge of forests and the World Bank was adopted in 1995 after a five-year process. The main underlying principle is that of ensuring the sustainability and development of the economic, ecological and social functions of the nation's forests through integrated management that leads to the sustained and lasting conservation and utilization of resources and forest ecosystems. The policy has five goals:

- (i) to ensure the protection of forests, safeguard the environment and conserve biological diversity;
- (ii) to improve the integration of forest resources in overall rural development and to increase the participation of rural populations in forest conservation and management in order to raise their living standards;
- (iii) to sustainably develop forest resources with a view to increasing the contribution of forest production to GDP;
- (iv) to ensure forest renewal through regeneration and reforestation; and
- (v) to set up an efficient institutional system involving all concerned parties in the management of the sector.

A new law on forests, wildlife and fisheries (Law 94/01) was approved in 1994 and supporting decrees on wildlife (95/466) and forests (95/531) issued in 1995. In addition, a new environmental law was approved in August 1996 (Law 96/12). Law 94/01 provides a good basis for introducing SFM; in particular, it stresses good forest management practices through the following provisions:

- the replacement of the former forest licence system by a forest concession system;
- the compulsory preparation and implementation of long-term forest management plans in concessions and simple forest management plans (*plan de gestion*) in forests attributed to communes and communities;

- the introduction of provisions in respect to concession allocation; and
- the creation of forest brigades and an inspection panel at national and provincial levels for forest control.

Institutions involved in forests. The Ministry of Forests and Fauna (*Ministère des Forêts et de la Faune* – MINFOF), formerly the Ministry of Environment and Forests (MINEF), is primarily responsible for forest policy and the supervision of the legislative framework. Within MINFOF, the Directorate of Forests (*Direction des Forêts*) is responsible for forestry implementation. It contains several major sub-directorates, including the forest management and inventory unit (*Sous-Direction des Inventaires et Aménagements Forestiers*) and the unit for community forests (*Sous-Direction des Forêts Communautaires*). The National Forestry Development Agency (*Office National de Développement des Forêts* – ONADEF) – a parastatal agency – was, until recently, responsible for technical forestry, including inventories, forest management, reforestation, wood promotion and desertification control, but was dissolved in 2003 and replaced by the National Agency for Forestry Development (*Agence Nationale de Développement des Forêts* – ANAFOR). The government employs a total of 282 staff with university degrees in forest-related positions^a. However, despite considerable efforts to reorganize the forest administration and to improve forest law enforcement, the implementation capacity of MINFOF remains weak due to a lack of funding, training and internal control^c. More than 100 national and international NGOs, including major conservation NGOs such as IUCN, WWF, Conservation International, The Nature Conservancy and the Wildlife Conservation Society (WCS), are active in Cameroon. Global Forest Watch (GFW), a US-based NGO affiliated with the World Resources Institute (WRI), is working with MINFOF to improve forest statistics.

Status of forest management

Forest for production

As provided by Law 94/01, commercial forestry is mainly implemented in the PFE through concessions and timber-licence contracts between the state and private entrepreneurs. FMUs are the basic unit of

timber harvesting; they are limited to a maximum size of 200,000 hectares and allocated by public tender. A forest concession consists of one or several FMUs. The preparation of the management and business plans and arrangements for implementation are the responsibility of the concession-holder under state supervision; to assist this, in 1998 ONADEF produced a guide to the preparation of forest management plans in production forests. Bids can be submitted by national or foreign investors to MINFOF, which awards the FMU on the advice of a technical committee. After paying a security deposit within 45 days of notification, the winning party receives a three-year provisional concession licence. During this period the concessionaire must prepare a fully-fledged forest management plan and make arrangements with all stakeholders involved, in particular any local forest users. The contract for the full concession is valid for 15 years and is renewable. A second type of management arrangement has also been developed (also under Law 94/01) in which communities can obtain forest user rights for 15 years for forest plots of up to 5,000 hectares.

In 2004, nine foreign companies (a few with some local ownership) held 3.15 million hectares of the concession area in 45 FMUs (GFW 2005). Of all 72 FMUs, 32 had approved management plans, the management plans of 17 had been rejected by MINFOF, the status of 14 was unknown and 19 were in process (ibid.). Poor logging practice, illegal logging and encroachment are reportedly common^c, but no official data on their extent are available^a.

In addition to the allocation of larger tracts of production forests to industrial investors, communities can manage communal forests for timber and non-timber production based on simplified forest management plans. In March 2001, eleven communal forests had established such plans, and 52 other proposals were being prepared.

There are two other logging permit systems in force, reserved for Cameroonian citizens. The harvesting permit (*permis d'exploitation*) is directly allocated by the minister in charge of forests and is applicable in the non-permanent forest estate; each permit is restricted to 500 m³ in volume. The *autorisation de récupération*, a type of logging right allocated by the provincial representative of MINFOF, allows the cutting of up to 30 m³ per permit.

Table 2 Some commonly harvested species for industrial roundwood^c

Timber species	Remarks
<i>Triplochiton scleroxylon</i> (ayous)	Nearly 30% of production (2000–2003)
<i>Entandrophragma cylindricum</i> (sapelli)	Nearly 20% of production
<i>Lophira alata</i> (azobé)	Locally important, more than 10% of production
<i>Terminalia superba</i> (fraké)	About 40,000 m ³ per year, 5% of production
<i>Chlorophora excelsa</i> (iroko)	Nearly 38,000 m ³ per year harvested on average between 2000–2003

Silviculture and species selection. A 1998 decree of Law 94/01 stipulates silvicultural standards for forest management. The felling cycle is set at 30 years and minimum harvesting diameters are indicated for each species. The standards further describe the designation of future crop trees, the tending of natural regeneration, thinning, enrichment planting and refinement^c.

Cameroon has over 600 tree species, of which some 300 are fairly common in the tropical moist forests. Of those, fewer than 30 are currently used in significant quantities for timber and fewer than a dozen species make up the bulk (80%) of the trade. Table 2 lists some commonly harvested species.

Planted forest and trees outside the forest.

The first planted forest was established with ayous in 1937. Several thousand hectares of plantations have been established since, but most of them were abandoned before maturity. Plantations were established during the 1950s, with a variety of species such as *Terminalia ivorensis*, *Aucoumea klaineana*, *Tectona grandis*, *Pinus* spp, various Meliaceae and eucalypts. In addition, *Gmelina arborea* was planted to produce matches. Firewood plantations, and plantations to protect soil and farmland and for other purposes, were started about 30 years ago with good results and were promoted on agroforestry land; species used include *Cassia siamea* and *Dalbergia sissoo*.

Forest certification. No forest has yet been certified in Cameroon. The government is actively involved in the development of the African Timber Certification Scheme, and some companies – including the Dutch Wijima Douala SARL – have undergone preliminary auditing as part of the FSC certification process.

The Swiss-based auditing firm *Société Générale de Surveillance* (SGS) is responsible for checking exports of timber and ensuring that the government collects the correct level of levies, and has developed a computerized log-tracking system with bar codes for this purpose. Cameroon is also participating in an ITTO project that is helping to build capacity for the implementation of the ATO/ITTO PCI at the national level in the African ITTO member countries. It aims to train at least 60 forestry staff in each country in the implementation of the PCI, develop an auditing framework for African forests, and train at least 60 trainers in the procedures for conducting audits based on the PCI at the FMU level.

Estimate of the area of forest sustainably managed for production.

At least 500,000 hectares of natural-forest PFE are estimated to be under SFM. This area comprises the forests allocated to long-term concessions leased out to timber companies which have been present in the area for several years, have approved forest management plans, and are presently engaged in a process of certification.

Timber production and trade.

The total roundwood production in 2002 was estimated to be about 10.9 million m³, of which 9.33 million m³ were used as fuelwood (FAO 2005b). Total industrial roundwood production in 2003 was 1.65 million m³, down from the 2.65 million m³ produced in 1999 (ITTO 2004, 2006 in prep.). Sawntwood production in 2003 was an estimated 658,000 m³ and plywood production in 2003 was about 39,000 m³, significantly lower than the 92,000 m³ produced in 1999 (ibid.). Veneer production in 2003 was 50,000 m³ (ITTO 2006 in prep.). Cameroon is the seventh-largest exporter of tropical timber and the second-

Table 3 Management of the production PFE ('000 hectares)

Total	Natural			Planted			
	Allocated to concessions/ under licence	With management plans	Certified	Sustainably managed	With management plans	Certified	
8,840	4,950*	1,760**	0	500 ^d	17	n.d.	0

* Source: GFW 2005

** Includes concession areas that already have a management plan or have completed forest inventories for the preparation of a forest management plan

largest in Africa. The export of logs is banned except for lesser-known species for market promotion and in the first phase of establishment of a new forest concession (up to 30% of the logs may be exported for the first five years after establishment); in 2003, Cameroon exported an estimated 70,000 m³ of logs (ITTO 2006 in prep.).

Non-wood forest products. The bark and fruits of *Garcinia cola* and *G. lucida* (onie and essok) and the nuts of *Gnetum* are used as medicines and stimulants. The nut of *Elaeis guineensis* (Eton palm) is used to make palm wine, *Irvingia* spp (andok or wild mango) and *Ricinodendron heudelotii* (ezezang) as condiments, and *Dacryodes edulis* (plum or assa) as food. The bark of *Prunus africana* is sold to pharmaceutical companies for use in the treatment of prostate gland problems. The powdered bark of *Pygeum africanum* is used worldwide to control urinary disorders in men and as a herbal supplement for benign prostatic hyperplasia. *Baillonella toxisperma* (moabi), a highly priced hardwood member of the Sapotaceae family, is traditionally used by forest-dwellers for the oil from its seeds. Wild meat and other animal products are of major significance in rural and urban areas; the trade in wild meat has been blamed in some forests for declines in the abundance of certain mammals. NWFPs are traded regionally, in particular with Nigeria. Products of *Dacryodes*, *Gnetum*, *Ricinodendron* and *Irvingia* species are frequently found in specialized shops in European cities.

Forest for protection

Soil and water. There are no clear figures on the extent of natural forest and planted forest set aside primarily for water and soil protection.

Biological diversity. Cameroon is rich in biodiversity, accommodating more than 8,300 plant species, about 297 mammal species and 848 bird species; nearly half of all the bird and mammal species of Africa are present in Cameroon's forests. Twenty-one mammals, 14 birds, three reptiles, one amphibian and 74 plants are listed as critically endangered, endangered or vulnerable on the IUCN red list of threatened species; of these, 30 mammals, 13 birds, 47 amphibians and 249 plants are found in forests (IUCN 2004). In addition, 43 plant species are listed in CITES Appendix II, including *Prunus africana* and *Pericopsis elata* (afroormosia) (CITES 2005).

Protective measures in production forests. The forest management prescriptions devised in 1998 include measures to protect soil, biodiversity and the flow of water in concession areas. They also include a series of stand treatments to encourage the regeneration of commercial tree species in natural stands. Provisions specify zones where hunting is permitted or banned and the length and dates of the hunting season depending on location and species.

Extent of protected areas. An estimated 3.90 million hectares of forests are in some form of protected area, comprising national parks (2.91 million hectares), wildlife reserves (739,000 hectares), wildlife sanctuaries (24,600 hectares) and zoological gardens (6,700 hectares); a further 867,000 hectares of FMUs have been set aside for conservation purposes (GFW 2005). According to UNEP-WCMC (2004), 2.65 million hectares of forest are in protected areas conforming to IUCN protected-area categories I-IV, of which 2.26 million hectares are lowland evergreen broadleaved rainforest. The first six national parks in Cameroon were set up primarily to attract tourists to Sudanian savanna and woodland vegetation types in the north

Table 4 Management of the protection PFE ('000 hectares)

Total	Attributed to IUCN categories I-IV	Allocated for soil and water	With management plans	Sustainably managed
3,900	2,650	n.d.	n.d.	n.d.

of the country. The major forest zone in the southern part of the country was, until recently, less well represented in the protected-area system. The Korup area was upgraded from faunal reserve to national park by presidential decree in 1986 and the forest reserves of Dja and Pangar Djerem are also being proposed as national parks.

Estimate of the area of forest sustainably managed for protection. Insufficient data were available to estimate the area of protection PFE sustainably managed (Table 4). Threats to protected areas include poaching for the commercial wild-meat trade and encroachment by shifting cultivation. A tri-national treaty (*Convention de la Trinationale de la Sangha*) was signed in early 2000 to allow the sustainable management of three adjacent protected areas in the transboundary zone of Cameroon, CAR and Congo. The Mengame Gorilla Reserve, a transboundary protected area connected to the Minkebe Protected Area, Gabon, is the subject of an ITTO project to strengthen management there, but while it is making good progress it is not yet possible to categorize its management as sustainable.

Socioeconomic aspects

Economic aspects. Timber is Cameroon's second most important export after petroleum; wood-based exports generated revenue of US\$210 million in 2001. According to their licence contracts, forest concession-holders need to link the forest concession with industrial processing units, thus providing stable employment in remote rural communities. An estimated 45,000 people are employed in the forestry sector^a.

Livelihood values. Forests provide many local communities with foods, medicines and locally traded goods. Forests also have a major spiritual value for the various ethnic groups in the country.

Social relations. Law 94/01 stipulates public participation in the design and implementation of forest management policies, enlisting all partners,

including governmental agencies, the private sector, communities and people living in and around the PFE. Arrangements are made between concession-holders and local people on a case-by-case basis according to rules established in the forest law. Local people should receive 10% of the forest fees and taxes from commercial forest concessions. From such fees collected, 40% are to be invested into local and district development. Forest concessions situated within the jurisdiction of a community also need to be accessible for NWFP harvesting by local populations.

Summary

Cameroon possesses significant forest resources with good potential for SFM. The policy environment is sound and governmental responsibility for forests is vested in a single ministry, the Ministry of Forests and Fauna (MINFOF). However, the capacity of the ministry to fully enforce the forest law and implement the forest policy is low. Cameroon is yet to translate many of its ambitious forest management goals into practice and effectively protect its PFE from deforestation and degradation.

Key points

- Cameroon has an estimated 12.8 million hectares of PFE, comprising 8.84 million hectares of natural production forest, 3.90 million hectares of protection forest and 17,000 hectares of industrial timber plantations.
- At least 500,000 hectares of natural-forest production PFE are estimated to be managed sustainably. Insufficient data were available to estimate the area of protection PFE so managed.
- In 2004, nine foreign companies held 3.15 million hectares of the concession area in 45 FMUs. Of 72 FMUs, 32 had approved management plans, the management plans of 17 had been rejected by MINFOF, the status of 14 was unknown and 19 were in process.

- Of the 4.95 million hectares of PFE under licence or allocated to concessions, about 1.76 million hectares had a management plan or had completed forest inventories for the preparation of a management plan.
- The integrity of the PFE is threatened by encroachment, poaching and poor logging practices, including illegal logging, but no official data on the extent of these are available.
- There is a good framework of policy and legislation but its implementation is limited.
- Despite considerable efforts to reorganize the forest administration and improve forest law enforcement, the implementation capacity of MINFOF remains weak due to a lack of funding, training and internal control.
- Cameroon is rich in biodiversity, accommodating more than 8,300 plant species, about 297 mammal species and 848 bird species; nearly half of all the bird and mammal species of Africa are present in Cameroon's forests.
- Hunting for wild meat, including for commercial sale, is believed to have significantly reduced the abundance of certain mammals in some areas.

References and other sources

- ^a MINFOF 2005. Premier Rapport National sur les Critères et Indicateurs de l'Aménagement Durable des Forêts au Cameroun. Submitted to ITTO, July 2005. Ministère des Forêts et de la Faune, Yaounde, Cameroon. Unpublished.
- ^c Information derived from the report of, and discussions with participants at, a training workshop on ITTO criteria and indicators, held 15–18 January 2003, Kribi, Cameroon, attended by 32 people from government, civil society and the private sector.
- ^d ITTO estimate

Amsallem, I., Koné, P. & Wilkie, M. (eds) 2002. *Status and Trends in Forest Management in Central Africa*. Forest Management Working Paper 3. FAO, Rome, Italy.

CITES 2005. CITES-listed Species Database. Available from: <http://www.cites.org/eng/resources/species.html> (accessed September 2005).

MINEF 2000. Progrès Réalisés sur la Voie de l'Objectif An 2000 Decisions 10 (XXVI) et 5 (XXVII). Submitted to ITTO, February 2000. Ministère de l'Environnement et des Forêts, Yaounde, Cameroon. Unpublished.

FAO 2001. *Global Forest Resources Assessment 2000*. FAO Forestry Paper 140. FAO, Rome, Italy.

FAO 2005a. *State of the World's Forests 2005*. FAO, Rome, Italy.

FAO 2005b. *Yearbook of Forest Products 2003*. FAO, Rome, Italy.

GFW 2005. *Interactive Forest Atlas of Cameroon*. WRI, Washington, DC, USA.

ITTO 2004. *Annual Review and Assessment of the World Timber Situation 2003*. ITTO, Yokohama, Japan.

ITTO 2006 in prep. *Annual Review and Assessment of the World Timber Situation 2005* (draft). ITTO, Yokohama, Japan.

IUCN 2004. 2004 IUCN Red List of Threatened Species. Available from: <http://www.redlist.org> (accessed September 2005).

Poore, D. & Thang, H. 2002. Review of Progress towards the Year 2000 Objective. Report presented at the twenty-eighth session of the International Tropical Timber Council, May 2000. ITTO, Yokohama, Japan.

UNEP-WCMC 2004. Spatial analysis of forests within protected areas in ITTO countries. UNEP-WCMC, Cambridge, UK. Data prepared for ITTO, 2004 (see Annex 1).

WRI 2000. *An Overview of Logging in Cameroon*. WRI, Washington, DC, USA.