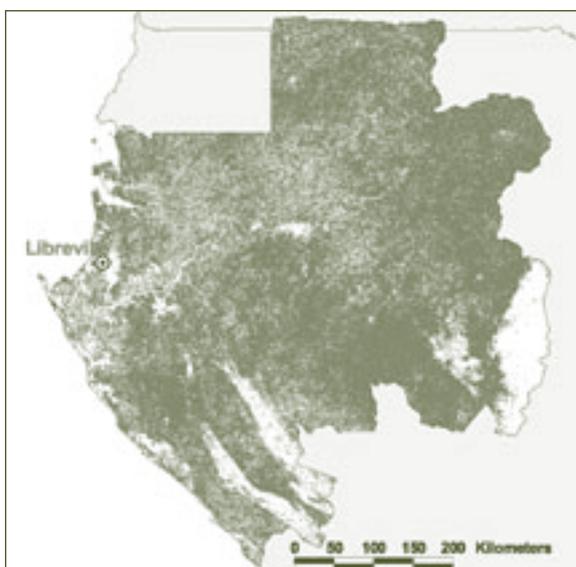


GABON



*For legend see page 58

Forest resources

Gabon has a land area of 26.8 million hectares and a population of about 1.3 million people. It is situated in the western part of the Congo Basin on the South Atlantic Ocean and is characterized by three biogeographic regions: a sedimentary basin in the west, containing forest and savanna; a medium-altitude Precambrian plateau (around 600 m above sea level), largely forested except for the Bateke Plateau in the east, which is natural savanna; and the scattered granite massifs in the north and south – Cristal Mountains, Mayombe and Chaillu – with altitudes ranging between 800 and 1,000 m, which are almost entirely forested. FAO (2005) estimated Gabon's total forest area to be 25.8 million hectares in 2000, which is more than 80% of the land area.

Forest types. There are three major forest types: (i) evergreen rainforest occurring in the west, which

has been heavily harvested, degraded and in some areas reduced to secondary forest characterized by the abundance of *Aucoumea klaineana* (okoumé) and *Dacryodes buettneri* (ozigo); (ii) the central Gabonese forest, covering most of the country, which is very similar to the closed moist forest found from Liberia to the Congo Basin, with many of the same tree species found throughout (eg *Canarium schweinfurthii* – aielé, *Lophira elata* – azobé, *Entandrophragma* spp, *Khaya* spp and *Triplochiton scleroxylon* – ayous); and (iii) a semi-deciduous forest type occurring in the northeast, characterized by a predominance of Maranthaceae (rattan) in the sub-layer and by a dominance of trees such as *Terminalia superba* (limba), *Millettia laurentii* (wengé) and ayous. Okoumé is absent in this forest type.

Dynamics of forest resource change. With a low overall population density and 60% of the population living in urban areas, there is little anthropogenic pressure on forest resources. FAO (2005) estimated the deforestation rate at less than 0.1% (about 10,000 hectares per year).

Permanent forest estate. The area of potential production forest is about 20 million hectares, of which 2.6 million hectares are in forest reserves. The government strategy envisages, in the long term, that 12 million hectares in the PFE will be managed – 8 million hectares of production forest and 4 million hectares under protected-area status (Amsallem et al. 2002); Table 1 shows an ITTO estimate of the current PFE. The *Direction Générale des Eaux et Forêts* is responsible for identifying the permanent forest area and areas suitable for other uses. A land-use plan has been completed for the First Forest Zone of Gabon (see 'forests for production' below), financed by ITTO; the Second Forest Zone plan, financed by the World Bank, is

Table 1 PFE

Estimated total forest area (million hectares)	Total closed natural forest ('000 hectares) Source: FAO 2001	PFE ('000 hectares) ^d			
		Production		Protection	Total
		Natural	Planted		
25.8	21,800	10,600	25	2,700	13,325

under preparation. Almost all of the national production forest area within the PFE is allocated to concession-holders.

Planted forests. Planted forests cover about 25,000 hectares. The government plans to raise the area of planted state forest to 100,000 hectares and to promote the establishment of an additional 100,000 hectares of private plantations, but planting rates are currently minimal. Agro-industrial plantations include about 11,000 hectares of rubber and some small plots of oil palm and coconut.

Institutional arrangements

Forest tenure. The forest law of 2001 (see below) divides forests into two distinct categories. The first includes the production PFE managed by private concessionaires and the protection PFE managed directly by the state. The second is composed of state-owned rural forest – land and forest for which usage rights are limited to local communities. Rural communities and forest dwellers are free to exercise their customary rights in the rural forest provided they respect all conditions imposed by the forestry administration. The production PFE is exclusively owned and administered by the state.

SFM policy framework. Since the timber sector is almost entirely oriented towards export markets, with particular exposure to environmentally sensitive European markets, the existence of a policy on SFM is of great interest. Several recent initiatives have been launched to develop Gabon-specific C&I for SFM. They include work with ITTO, CIFOR, ATO and FSC. Gabon has also been actively involved in the development of the ATO/ITTO PCI.

Forest policy and legislation. An environmental law (No 16/93) was adopted in 1993. It aims to preserve natural resources and to use them sustainably, to improve and protect living conditions, to generate revenues from environmental services, and to harmonize development with safeguarding the natural environment. A decree stipulating when and where environmental impact assessments are required also exists. A national environmental action plan has been funded by the Global Environment Facility (GEF). After extensive consultation at the national level, a new forest law was adopted in December 2001, replacing Law 1/82 of 1982; among other things, it defines the two main usage

categories of permanent and rural forest estates (see 'forest tenure' above).

Gabon's current forest policy was adopted in May 1996. It aims to increase and optimize the contribution of the forestry sector to economic and social development and to promote a more diversified and efficient wood industry through a significant reduction in the export of logs and an increase in the local processing of wood products. The policy makes specific reference to the application of SFM, including: the establishment of a forest management policy, the development of new forest harvesting rules, the introduction of means to monitor forest harvesting, the reform of timber licences to ensure wood supplies to local industries, the imposition of a progressive transformation tax on local forest production, and, finally, the progressive reduction of log exports from 75% of production in 1996 to 50% by the year 2005.

Institutions involved in forests. The Ministry of Forest Economy, Inland Waters and Fishing in Charge of the Environment and Nature Conservation (*Ministère de l'Économie Forestière, des Eaux, de la Pêche, Chargé de l'Environnement et de la Protection de la Nature* – MEFPEPN) deals with the demarcation, conservation, management, reforestation and harvesting of forests. The Directorate for Forests and Water (*Direction Générale des Eaux et Forêts* – DGEF) promotes the practice of SFM, and the Directorate of Forest Inventory, Management and Regeneration (*Direction des Inventaires, des Aménagements et de la Régénération des Forêts* – DIARF) is responsible for monitoring SFM. There is also a planning, monitoring and evaluation unit in the Ministry to supervise operational activities. In 1975, the government created a privately managed timber enterprise (*Société Nationale des Bois du Gabon* – SNBG), which, until recently, had a monopoly over the export of logs of the two main species, okoumé and ozigo. SNBG supported the regulation of markets for these species by structuring supply, preventing over-production, setting quotas and acting to stabilize export prices. SNBG's monopoly was ended by the government in early 2005.

There are five research institutions dealing with forest-related issues and one forestry training institute, ENEF (*Ecole Nationale des Eaux et Forêts*). Since 2004, the management of 13 national parks

has been carried out by the National Council for National Parks (*Conseil National des Parcs Nationaux* – CNPN). Some local NGOs are involved in the development of certification, but in general there is little civil advocacy and few participatory processes in the forestry sector^b. Some international NGOs, including WWF and WCS, are active in protected-area management.

Status of forest management

Forest for production

All production forests must have an SFM plan prepared by the concessionaires, approved by MEFEPEPN, covering one rotation and based on forest inventories and ecological and socio-economic studies. Licences for harvesting production forests are granted in two ways^b:

- forest concessions under sustainable management (*concessions forestières sous aménagement durable* – CFADs): these concessions, of 50,000 to 200,000 hectares according to the 2001 forest law, consist of one or several FMUs. Each FMU, of between 15,000 and 200,000 hectares, is regulated by a licence. According to the 2001 law, each FMU requires the preparation and implementation of a forest management plan as well as a timber-processing plan. CFADs are granted at least for the rotation period established in the management plan(s), generally between 20 and 40 years. The granting of any such concession is conditional on the establishment of a local timber-processing unit; and
- associated forest licences (*permis forestiers associés* – PFAs), with an area of less than 15,000 hectares, are granted for a ten-year period. They are reserved for Gabonese nationals and must be linked to a CFAD.

In addition, occasional cutting permits (*permis gré-à-gré*), linked with the local processing of the harvested timber, may be granted to Gabonese nationals. These permits are granted in reserved forests outside CFAD and PFA areas.

Community forests may be created in rural forests. These should be managed for timber and NWFPs according to a simplified forest management plan

developed with support from the DGEF. Up to 2004, few community forests had been established^b.

The forest area open to timber harvesting has been divided into three zones. The first, reserved for national enterprises, comprises the coastal plains and is rich in okoumé and characterized by relatively easy transport. Most of this zone has been harvested one to three times since the end of the 19th century (Drouineau & Nasi 1999). The second zone is less rich in okoumé and access is more difficult. This zone has now been almost completely harvested for the first time (*ibid.*), facilitated by the establishment of the *Transgabonais*, the railway that has granted access to a large part of the centre and east of the country. Still less okoumé is found in the forests of the third zone, where the species reaches the limits of its distribution. The *Transgabonais* provides limited access to this zone but extraction becomes increasingly difficult farther from the railroad. As a consequence, there has been little harvesting so far (*ibid.*).

At the end of 2002, there were 401 timber permits of all categories in force covering a total production area of 10.62 million hectares. Forty-three per cent of the area (4.55 million hectares) was being harvested on an industrial scale. This was divided into 63 FMUs, 45 (3.3 million hectares) of which were being harvested by foreign timber concession companies – eight European holdings, seven Asian holdings and one Libyan enterprise. All concessions equal to or larger than 50,000 hectares require a forest management plan. By the end of 2002, about 1.46 million hectares of forest had already been covered by forest management plans, and forest inventories were under way in an additional 1.1 million hectares. In 2003, sixteen concessionaires were preparing forest management plans. It is expected that 6.7 million hectares allocated under CFADs will be managed according to approved forest management plans by the end of 2005 (Gabonese forestry officials, pers. comm., June 2005).

Silviculture and species selection. Timber harvesting is selective and focuses on high-value species; at present, only 4–5 m³ per hectare is extracted. In the first and second forest zones, this is due to previous overcutting of okoumé; in the east, high transport costs mean it is only economically viable to harvest the most valuable tree species.

Table 2 Some commonly harvested species for industrial roundwood

Timber species	Remarks
<i>Aucoumea klaineana</i> (okoumé)	About 1.7 million m ³ of logs exported in 2001
<i>Pterocarpus soyauxii</i> (padouk, red wood)	Important species for log export
<i>Guibourtia tessmanii</i> (kévazingo)	Decorative species, important for veneer, parquet, small handicrafts
<i>Dacryodes buettneri</i> (ozigo)	Traditionally the second most important timber species, now losing significance
<i>Hallea ciliata</i> (bahia)	Dominant in swamp forests

The gross standing volume of trees with diameter above 10 cm is estimated to be 250 m³ per hectare in unexploited forest and 220 m³ per hectare in logged-over forest. The commercial standing volumes are respectively 55 m³ per hectare and 42 m³ per hectare. Generally, forest resources can be divided into two main categories: forests with okoumé and ozigo, which regenerate well, and forests without large amounts of these two species. Okoumé is the predominant species, with about 10 m³ per hectare in about 80% of all forests. A specific silvicultural system is applied, the so-called *Méthode Okoumé*, based on favouring natural regeneration and continuous thinning until there are 80 stems per hectare with a diameter of over 70 cm. Gabonese forests regenerate well and, if management prescriptions are followed, they will maintain their productive value (Drouineau & Nasi 1999).

Over the past decade, a growing number of the approximately 400 hardwood tree species in Gabon's closed forests have been harvested, mostly for domestic or Asian markets. It is expected that the number of species acceptable to international markets will continue to increase from the current 15 or so to 30–40, including azobé, ayous and *Gambeya africana* (longhi).

Planted forest and trees outside the forest.

Reforestation and enrichment planting are generally not undertaken in logged-over forests due to the relative ease of natural regeneration. Existing plantations are mainly on former natural-forest sites and consist primarily of okoumé and, to a limited extent, limba. There are also some plantations of pines and clonal eucalypts.

Forest certification. Since 2001, a national working group on SFM and certification, financed by the

EU and the Dutch government, has been actively involved in setting standards and establishing the base conditions for forest certification. Most of the major European concessions apply the Dutch Keurhout certification scheme, with almost 1.5 million hectares certified under this scheme as of 2004. It is expected that the biggest forest concessions will also seek certification under either the FSC or the Pan-African Forest Certification (PAFC) system, which was established in Gabon in late 2004 based on the ATO/ITTO PCI. PAFC-Gabon is the first African member of the Program for the Endorsement of Forest Certification Schemes (PEFC) Council; in order to be PEFC-endorsed and to use the PEFC logo, PAFC-Gabon needs to complete development of the national scheme and submit it to PEFC assessment procedures (including an independent review and public consultation).

Estimate of the area of forest sustainably managed for production.

At least 1.48 million hectares of natural-forest production PFE are thought to be under SFM. This corresponds to the long-term concession area leased out to timber companies that have achieved certification under the Keurhout scheme.

Timber production and trade. The total standing timber volume (diameter >10 cm) is estimated to be 2.60 billion m³. The possible sustainable annual yield of potentially marketable timber species is an estimated 12–15 million m³ (government of Gabon 2001). In 2003, 3.56 million m³ of industrial logs were produced (ITTO 2005), not much changed from the 3.64 million m³ harvested in 1999 (ITTO 2004). The government plans to raise the level of harvest to 6.5 million m³ (government of Gabon 2001). Local industrial processing is promoted by

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	
10,600	6,923	2,310*	1,480	1,480	25	10	0

* All 401 cutting permits in force in 2002–03 are counted here

the government, including by the imposition of a 20% tax on log exports, and has increased during the last five years; for example, veneer production grew by about 50% in the three years to 2003, when it reached 140,000 m³. Nevertheless, Gabon remains one of the largest exporters of tropical hardwood logs. China and Taiwan Province of China absorbed more than half (988,000 m³) of Gabon's log exports in 2003, with most of the rest going to Europe (ITTO 2005).

Non-wood forest products. As in the other countries of the Congo Basin, many foodstuffs, including wild meat, roots, fruits, leaves and nuts, as well as medicinal plants and condiments, are collected in the forest. They are an integral part of the subsistence of local people, but some are also marketed at the national level, such as the fruits of *Irvingia*, lianas of *Gnetum*, and plants and nuts of *Garcinia* species. Bamboo and fibres such as Marantaceae (rattan), raphia, and the leaves of *Borassus aethiopum* (rônier) are important products that are also traded internationally. Charcoal is of some importance, supplying a small but efficient informal market.

Forest for protection

Soil and water. As of 2004, no forests were reported to be managed primarily for the protection of soil and water^a.

Biological diversity. Gabon contains more than 6,500 plant species, 320 mammals and 617 birds. Thirteen mammals, five birds, three reptiles, two amphibians and 108 plants are listed as critically endangered, endangered or vulnerable on the IUCN red list of threatened species; of these, ten mammals, two birds, two amphibians and 44 plants are found in forests (IUCN 2004). Gabon has listed eleven plant species in CITES Appendix II, none of which is a hardwood timber species (CITES 2005). Although Gabon is sparsely

populated, some fauna species are under pressure in some areas due to an increasing demand for wild meat (Amsallem et al. 2001).

Protective measures in production forests. Law 16/01 includes measures to protect soil, biodiversity and water flow in concession areas. It also includes a series of stand treatments to encourage the regeneration of commercial tree species in natural stands. Provisions designed to protect wildlife specify the zones where hunting is permitted and the length and dates of the hunting season. These rules need to be enforced in forest concessions, as concessionaires and their personnel have so far done little to control poachers (Amsallem et al. 2001).

Extent of protected areas. Gabon has 13 national parks – most of them forested – covering about 3.01 million hectares^a, although none appear to be managed effectively except for the Lopé National Park and the Minkebe National Park^d. The CNPN focuses on ecotourism as well as nature conservation in park management but its main activities are concentrated on fighting poaching. Parks outside the Lopé National Park require more protection, particularly the Mounts of Cristal, the Clump of Chaillu, the Mayombe, the whole northeast of the country, the Belinga Zone and the Mounts of Boka-Boka. According to UNEP-WCMC (2004), 570,000 hectares of forest are in protected areas that conform to IUCN protected-area categories I–IV. A National Biodiversity Observation Board was created in 2000 to support the implementation of the GEF-assisted National Strategy and Action Plan for Biodiversity. ITTO and WWF are working with the government to develop a project that would prepare a management plan for the Minkebe Forest Reserve, which together with the Minkebe National Park makes up an ITTO-supported trans-boundary conservation area linked to the Mengame protected area in Cameroon.

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
2,700*	570	0	491**	1,090

* National parks only

** A management plan for the Minkebe National Park and the Minkebe Forest Reserve is in the final stages of preparation

Estimate of the area of forest sustainably managed for protection. The total protection PFE under SFM is an estimated 1.09 million hectares (Table 4), comprising the ITTO-supported Minkebe National Park (600,000 hectares) and the Lopé National Park (491,000 hectares). These areas are considered to be managed and protected effectively, although poachers continue to be a threat to these and other protected areas.

Socioeconomic aspects

Economic aspects. Timber and wood industries play an important role in the economy of Gabon. Before the petroleum industry was established in the 1950s, timber provided 90% of export earnings but by 1985 this had diminished to 6%. Timber remains the second-largest source of export earnings after petroleum, earning about US\$250 million per year, now around 9% of export revenue. It is estimated that the timber industry's contribution to GDP is 5% (government of Gabon 2001). Forest taxes are primarily (>90%) derived from export levies. The country has engaged in fiscal reforms to increase and diversify income from taxes and to provide incentives for SFM and wood processing. Forestry and wood industries employ about 29,000 people (government of Gabon 2001). In order to implement its SFM policy, the government has created a National Forest Fund and an investment program with the World Bank (*Programme Sectoriel Forêt-Environnement*) that aims to pursue institutional and statutory reforms.

Livelihood values. Forests are the main source of subsistence for many villages. Local populations have free access to all forests as long as they possess appropriate customary rights and do not jeopardize the sustainability of the forest products they collect. Wild meat and edible fruits such as aiéle, leaves of *Gnetum* species, and nuts and roots (igname) are of great importance for forest-dependent

local communities, in particular Pygmies. Wild-meat availability may be threatened locally because of overhunting.

Social relations. The community forests allowed under the 2001 forest law replace the former 'family logging' rights. The forest law specifies that there should be a zone around each production forest to accommodate the customary rights of surrounding communities. One of the objectives of a memorandum (*lettre de politique*) of forest policy published by the government in May 2004 is to increase the future role of local users in community forest management.

Summary

Over the past ten years, Gabon has gone through a profound process of reform affecting the forest and environment. A new forest law has come into force that emphasizes SFM as the overall approach in the PFE. Forestry is, and will remain, one of the pillars of Gabon's economic and social development. The private sector has become a major driver of industrial forest development and the export of forest products. The government has introduced a system to institutionalize community forestry as a way of meeting local needs for timber and other forest products. Gabon has a low deforestation rate, forests rich in valuable timber species and among the best prospects for a healthy and sustainable forest industry. There are still problems – mainly in governance. For example, there is little civil advocacy and few participatory processes in the forestry sector. Protected-area management in Gabon is still in its infancy and requires greater planning and effective enforcement.

Key points

- Gabon has timber-rich and extensive forest resources with a relatively low risk of conversion to other uses.

- The PFE is an estimated 13.3 million hectares, comprising 10.6 million hectares of natural production forest, 2.70 million hectares of protection forest and 25,000 hectares of plantations.
- At least 1.48 million hectares of natural-forest production PFE are thought to be managed sustainably; at least 1.09 million hectares of the protection PFE are considered to be so managed.
- The financial viability of SFM is greatly enhanced by the high quantity and quality of a prime species (okoumé) in a large part of the forest estate, particularly on the coastal plains.
- However, because of its high value, okoumé tends to be over-harvested.
- Community forests may be created in rural forests, but few had been as of 2004.
- High standards for concession management have been developed on paper, but still need to be fully introduced and enforced. There is interest in the application of C&I as a monitoring tool and forest certification has been encouraged.
- Many protected areas do not appear to be managed effectively.
- Management for wild meat and other NWFPs is still largely uncontrolled in forest concessions.

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