

CHAPTER 3

THE FORESTS OF GABON IN 2008

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Introduction: The Macro-Economic and Political Context

Gabon covers 262,090 km².

In 2005 Gabon was reported to have 1.3 million inhabitants (UNDP, 2007; UNPP, 2008), giving an average population density of five inhabitants/km². For the period 2005 to 2010, the average rate of demographic growth was estimated at 1.48 %. There is strong disparity between the rural environment, which is lightly populated and the urban zones, where most of the population is based (85 % of the total). Urban population is currently growing at a rate of 2.2 %.

The population is mainly young with 56.7 % under 25 years old in 2005 (UNPP, 2008).

The rural zones are sparsely populated and traditional agriculture as well as agro-industry are under-developed. The population ratio per hectare of arable and cultivated land is 0.9 (UNFPA, 2008). This figure is the lowest in Central Africa (with an average of 2.02 for the Congo Basin countries). Cropped areas represent about 5 % of national surface area (Nasi *et al.*, 2006).

Gabon has dense forest covering some 21.09 million ha, more than 80 % of the national territory (Mayaux *et al.*, 2004). This coupled with low population density results in Gabon having the highest rate of forest surface *per capita* in Africa. Between 1990 and 2005, the recorded loss of forest surfaces remained very limited, 0.15 million hectare (less than 1 %) (UNDP, 2007).

The gross domestic product (GDP) of Gabon is \$ 8,100 million resulting in a *per capita* GDP of

\$ 5,821 (UNDP, 2007). Natural resource exploitation is the cornerstone of the Gabonese economy: oil, forests and mining make up half of the GDP. The oil sector alone accounts for 42.4 % of GDP. The forest sector is in second place (6.0 %) followed by mining (1.9 %) (Nasi *et al.*, 2006).

Gabon has a presidential regime and is a relatively stable Central African nation.

Forests have always played an important role in the country's development. Economically, they were the main national asset, before being overtaken by oil at the beginning of the 1970s. At present, the forest sector is in second place for state export earnings and remains the primary employer in the private sector with about 12,868 jobs generated directly (MEFEPPN-FORAF, 2008).

The contribution of the forest/environmental sector to the national economy is presented in table 3.1.

Despite the strong *per capita* GDP (mainly from oil earnings and low population density) improvements can still be made in the fields of education, health and services. In fact, despite major efforts undertaken, especially for literacy, Gabon is in 123rd place out of 177 in the human development index (UNDP, 2005), life expectancy at birth being 59.7 years and the rate of child mortality 53.8 for every 1,000 births.

Table 3.1: Contribution of the forest sector to the national economy in 2007

	Absolute value (billion francs CFA)	Relative value (%)
Contribution to GDP	232.9	4.3
Contribution to the balance of trade	191.8	5.4
Tax earnings	20.5	1.3

Source: MEFEPNN, 2007.

Forest Resources and Land Cover Change since 1990

Forest Areas

Gabon has a dense forest covering more than 80 % of its surface area (Mayaux *et al.*, 2004). Three main types of dense rain forest can be distinguished, coastal forests (0-300 m): 32.6 %, intermediary forests (300-1000 m): 66.7 %, and flooded forest and mangrove: 0.7 % (CBFP, 2006). The rest of the country is made up of forest-savanna mosaic, swampy zones and mangrove.

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Photo 3.1: Because of the steep slopes, the undergrowth is often dense shrub, even in the old growth forest of Monts de Cristal.

Table 3.2: Forested area of Gabon by land cover category

Land cover	Area (ha)
Lowland rain forest	20,982,690
Sub-montane forest (900-1500 m)	14,445
Mountain forest (>1500 m)	36
Swamp forest	17,766
Mangrove	71,919
Total dense forest	21,086,856
Forest-cropland mosaic	3,120,219
Forest-savanna mosaic	185,931
Dense deciduous forest (Miombo)	176,643
Other plant formations	1,404,630
Cropping land	33,480
Other land use (town, villages, industrial sites...)	201,213
Total	26,208,972

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

Change in Forest Cover since 1990

Recent analysis of satellite data (Duveiller *et al.*, 2008) estimated the change in forest cover over all countries in the Congo Basin region. In terms of deforestation rate, Gabon, the Republic of Congo and the Central African Republic, are among those countries where the deforestation dynamic is still relatively low with an annual rate

of 0.09 % for a regional average of 0.21 % per year (± 0.05 %). As for the net rate of degradation of forest cover, Gabon has a rate of 0.08 % for a regional average of 0.15 % per year (± 0.03 %). However, in the authors' view, a certain margin of interpretation should be maintained given the low volume of data available for the country.

Legal and Institutional Framework for Managing Biodiversity Resources

Legal Framework

Forest and wildlife activities are governed by law 16/01 pertaining to the Forest Law of Gabon. The text was enacted on December 31, 2001, after several years of preparation. The two main axes are:

- sustainable and rational management of forest resources through an effective adjustment of facilities;
- more advanced local processing due to a framework favoring investment (greater areas allocated over longer durations, rebalancing fiscal aspects).

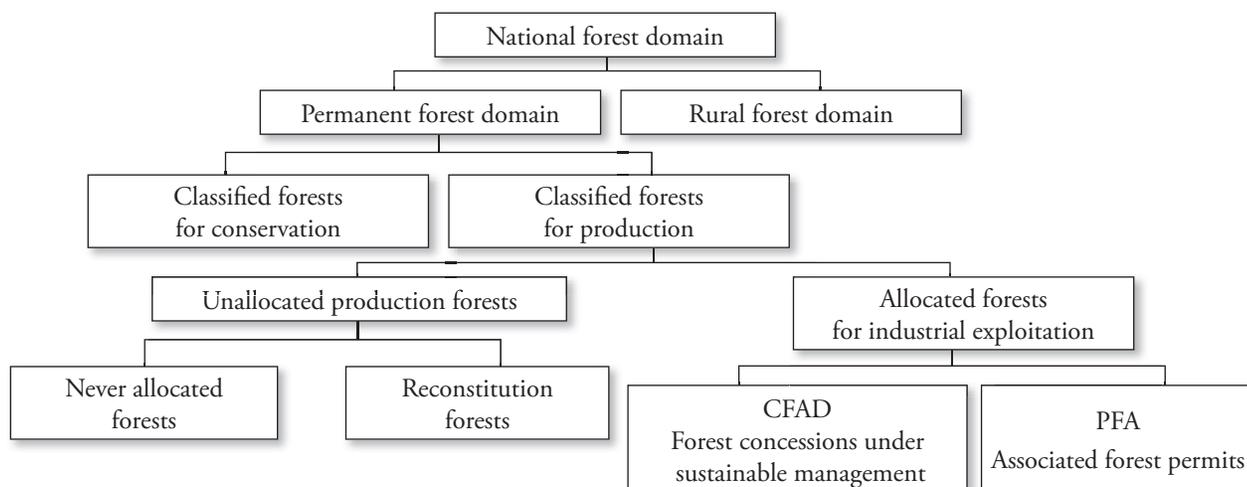
At the time, this law facilitated innovative organization of the forest domain into the permanent forest estate of the State and the rural forest estate. The distinction between private and public estate is no longer expressed and all forests are in the national estate. Forests in the permanent forest estate can be used for production or protection (classified forests). The permit holder commits vis-à-vis the state to provide a management plan during the provisional agreement period of three years. They are responsible for preparing and applying the management plan. The

management plans are prepared using both flora and wildlife management inventories and socio-economic studies. The decision choices included in the management plan should thus be the result of a broad consensus-building process between the different stakeholders including the logging company, administration and local people. The management plan is valid for a minimum 20-year rotation. Official management norms exist to help the manager assess the management plan proposed.

In the rural forest estate, forests set aside for use by village communities can be set up as community forests as provided for in law. These community forests are subject to simple management provided by central administration. The village communities have to draft supply contracts with local processing companies. The allocation of cutting permits by trunk, so called *gré à gré* (by mutual consent), is also possible in the rural forest domain.

Among the many provisions planned under this law, many have still not been adopted.

The current partition of the forest estate is presented in figure 3.1.



Source: Forest law of Gabon.

Figure 3.1: Organization of the national forest estate.



Photo 3.2: Students head home from classes through a local yard of logs.

Institutions and Capacity

The main management institutions operating in the forest sector are presented in table 3.3.

Law 16/93 for environmental protection and improvement constitutes the Environmental Law in the Republic of Gabon. A national environment action plan was drafted in 2000.

Other important texts related to natural resource management are law 15/2005 for the Fisheries and Aquaculture Code, law 05/2000 for the Mining Code, and law 15/63 on the land ownership regime in the Republic of Gabon.

The land allocation plan by zoning in Gabon is in preparation. The stratification project to manage the first forestry zone set up at the end of the 1990s with ITTO support can be considered the first stone of the building. However, this was neither expanded upon nor implemented.

At present, there is neither a forest fund nor a fund for wildlife and conservation. The financial resources allocated to the Ministry for the Forest Economy in 2007 are summarized in table 3.4.

Table 3.3: Main institutions operating in the forestry sector

Institution	Year of creation	Mission
<i>Ministère de l'Économie forestière, des Eaux, de la Pêche et des Parcs nationaux</i>	1983	Design of government policy in the ministry's area of competence
<i>Ministère du Tourisme et des Parcs nationaux</i>	1984	Design of government policy in the ministry's area of competence
<i>Ministère des Mines, du Pétrole, des Hydrocarbures, de l'Énergie, des Ressources hydrauliques et de la Promotion des Énergies nouvelles</i>	1977	Design of government policy in the ministry's area of competence
<i>Ministère de l'Agriculture et du Développement rural</i>	1973	Design of government policy in the ministry's area of competence
<i>Ministère de l'Environnement, du Développement durable et de la Protection de la Nature</i>	1972	Design of government policy in the ministry's area of competence
<i>Société nationale des Bois du Gabon (SNBG)</i>	1975	Wood trade
<i>Agence nationale des Parcs nationaux (ANPN)</i>	2007	Management of national parks
<i>Gabontour</i>	1988	Office of Tourism
<i>Centre national Antipollution (CNA)</i>	1976	Anti-pollution control
<i>Commission nationale du Développement durable</i>	2005	Economic and social development

Source: MEFPPN-FORAF, 2008.



Photo 3.3: Abandoned logs on the beaches of Gabon.

Table 3.4: Financial resources allocated to the Ministry of Forest Economy in 2007

Entity	Amount (million CFA)
Central administration	8,000
Decentralized services	525
Regulated institutions	4,006
Total	12,531

Sources: MEFEPN-FORAF, 2008.

Generally, the central administration operates in good conditions, but field level deployment is largely insufficient and hampers good support to sectoral activity.

Table 3.5 indicates human resources by level of training (with the exception of trainees and transferred staff), involved in forest resource management.

Table 3.5: Human resources involved in forest resource management in 2008

Level of training	Central administration*		Decentralized services		Total
	Forest	Wildlife	Forest	Wildlife	
University	34	7	2	-	43
Senior technicians	68	22	84	-	174
Technicians	15	19	78	-	112
Others (excluding staff from Water and Forest Services)	81	16	186	-	283

* Not including staff from the General Secretariat, the General Inspection of Services, and ministerial cabinets.

Source: MEFEPN-FORAF, 2008.

Gabon enjoys a developed network of public research institutions and schools of international renown. Research falls under the authority of the Ministry for Further Education, Research and Technological Innovation. The National Center for Scientific and Technological Research (CENAREST) groups the five large research institutes in the forestry field: IRAF (*Institut de Recherche agronomique forestière*), IPHAMETRA (*Institut de Pharmacopée et Médecine traditionnelle*), IRET (*Institut de Recherche en Écologie tropicale*), IRISH (*Institut de Recherche en Sciences sociales*) and IRT (*Institut de Recherche technologique*) (PFBC, 2006).

In parallel, forestry training is offered by the University Omar Bongo, USTM (*Université des Sciences et Techniques de Masuku*) and various schools. The *École nationale des Eaux et Forêts* (ENEF) set up in 1975 and located in Cap Esterias is in charge of training officers in the fields of forestry, fisheries and aquaculture, and management of wildlife and protected areas. Since 1976, the *École nationale des Cadres ruraux d'Oyem* (ENCRO) has been training young people for careers on working the land. The *Office national du Développement rural* (ONADER), set up in 1983, provides extension services for rural farming techniques.

A forest/environmental sectoral program was started in 2003 and is ongoing. Its objective is to coordinate actions from the various donors, in addition to budgetary support from the World Bank, to the three ministries responsible for natural resources management (forest, environment, and mining). The coordination cell has however experienced problems and is seeking additional financing to cover the provisional action program. In the meantime, the programs in progress support artisanal fishing (BAD), biodiversity (GEF) and the forest sector (AFD).

The *Projet d'Aménagement des petits Permis forestiers Gabonais* (PAPPFG; the project to manage small forestry permits) financed by AFD, FFEM and the gabonese State, in operation since mid-2007, aims to play a key role in structuring the sector. Born from the observation that small permit holders cannot meet legal obligations without institutional support, the project aims at providing a platform of services to title holders keen to group together for whom a management plan is conceivable and prepared using project assistance. Thus doing, the place of national players in the sector will be maintained, institutional capacity strengthened, and the sustainable management process will find a genuine dynamic.

Forest Logging and the Timber Sector

According to Christy *et al.* (2003), logging began before 1900 in Gabon, with okoumé already as the main product. At the beginning of the 20th century, production was limited by the rudimentary logging modalities. Thus it remained concentrated around the main waterways in the country. Rapidly the advent of improved transport techniques enabled more intensive production of logs and okoumé became established on the European market (mainly Germany and then France). During the 20th century, produc-

tion increased constantly with improved machine development and the progressive incursion of operators into the land.

From the 1960s, there has been logging of so called diverse species with the share of okoumé brought down from 94 % in the 1950s to 85 %. This share is still high today, representing 80 % of production until the year 2000 and beyond. The advent of oil production in 1966 saw timber lose ground to oil as the main source of national wealth.

Typology of Forestry Titles

With the enactment of law 16/01, the typology of forestry licenses was reviewed. The denominations in force are presented in table 3.6.

Legislation provides three types of title. Forest concessions under sustainable management (*concession forestière sous aménagement durable*, CFAD) have an area ranging from 50,000 to 200,000 hectares. A permit holder can own several CFAD, with the total not able to exceed 600,000 hectares. Associated forest permits (*permis forestiers associés*, PFA) are permits for smaller surface areas (maximum 15,000 hectares if the permit is integrated into a CFAD, or 50,000 ha if the permit

is a managed unit in itself) reserved for nationals where the management is integrated into a pre-existing CFAD. It is possible to group several PFAs together to make their own CFAD.

The *permis de gré à gré* (permit by mutual consent, PGG) is issued exclusively to national residents in the rural forest domain. This is for artisanal operations for a maximum of 50 units in a perimeter that was delineated previously by the administration. Unlike CFADs and PFAs where management is compulsory, PGGs are not subject to special management rules.

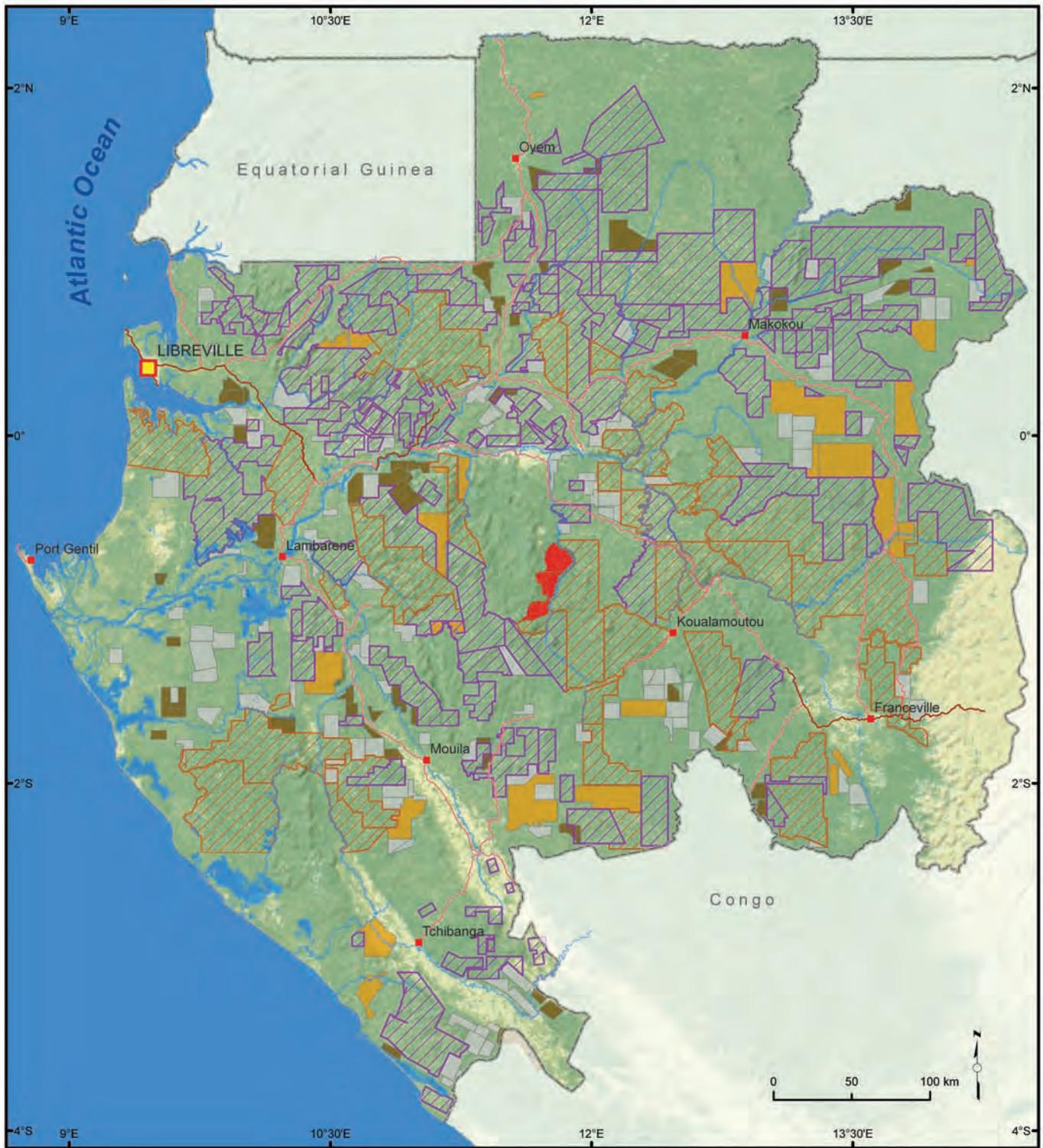
Table 3.6: Typology of forest permits

Permit	Basis for allocation	Mode of allocation	Management requirement	Size	Exploitation
Forest concession under sustainable management (CFAD)	Surface	Auction/by mutual consent	Management plan and industrialization plan	50,000 ha to 600,000 ha, in one or several plots of 15,000 ha to 200,000 ha	Industrial
Associated forest permit (PFA)	Surface	Auction/by mutual consent; reserved to nationals	Integrate into an existing CFAD or form a CFAD by grouping other PFAs	15,000 ha if integrated into a CFAD, and 50,000 ha if managed by the title holder	Industrial
Permit by mutual consent (<i>Permis de gré à gré</i>) (PGG)	Number of trees	By mutual agreement; reserved to nationals	None	50 trees	Artisanal

Source: MEFPPN-FORAF, 2008.

At present community forests are not planned in Gabon. As mentioned previously, there are legal provisions for community forests and they can be awarded upon request from the village communities concerned. The conditions for their

Implementation are still being studied, especially through a pilot project in Ogooué Ivindo. It is planned they will be managed through a simple management plan prepared by the Administration.



Sources: CARPE, INC, WCS, WRI, and FORAF
 Figure 3.2: Forest concessions in Gabon

Formal Logging in Natural Forests

Annual national production in the formal sector is traditionally presented by distinguishing between okoumé and ozigo in one group and various other woods on the other (table 3.7). Note that these two species account for more than two thirds of total production, okoumé alone accounting for a dominant share. Detailed distribution of the total 2007 volume entering plants for the ten main species is presented in table 3.8.

The matching export statistics are presented in table 3.9. In the first 11 months of 2006, roundwood exports were mainly dominated by okoumé (almost 50 %), okan, padouk, kevazingo, moabi, dabéma, tali, béli and ozigo (MEFEPPN-FORAF, 2008).

The log market for okoumé and ozigo is mainly oriented towards Asia, (China in particular), while for various timber species, Europe is the main customer.

Table 3.7: National annual production (formal sector) of logs from 2005 to 2007

m ³	2005	2006	2007
Okoumé/ozigo	1,772,737	2,061,412	2,144,434
Various wood	997,165	1,159,544	1,206,244
Total production	2,769,902	3,220,957	3,350,678
Part entered into wood processing plants	1,183,875	1,104,989	1,131,566

Source: MEFEPNN-FORAF, 2008.

Table 3.8: Total volume sent to processing plant in 2007

Species	2007 (m ³)
Okoumé	931,473
Azobe	37,700
Okan	20,522
Mouvingui	18,713
Ozigo	14,903
Izombe	9,253
Bahia	9,174
Moabi	9,144
Iroko	8,564
Agba	5,440
Other species	66,679
Total entered in processing plant	1,131,566

Source: MEFEPNN-FORAF, 2008.

Table 3.9: Export by type of product from 2005 to 2007

Product (m ³)	2005	2006	2007
Logs	1,586,228	1,768,080	1,938,079
Sawn wood	152,724	164,537	253,227
Peeled veneer	121,899	194,150	163,048
Sliced veneer	2,256	1,582	1,347
Plywood	67,177	29,906	58,439
Planed wood	ND	ND	ND

Source: MEFEPNN-FORAF, 2008.

Table 3.10: Distribution of processing units

Type of unit	Number	Theoretical national capacity (m ³)
Industrial sawmill	60	1,013,487
Peeling plant	12	673,600
Slicing plant	1	10,000
Total	73	1,697,087

Source: MEFEPN-FORAF, 2008.

The primary processing industrial units are divided according to table 3.10.

A survey carried out in 2008 in the framework of PAPPFG reported 48 sawmill facilities, 9 peeling units and 3 plywood plants, for a theoretical processing capacity of approximately equivalent to 1,697,087 m³ of logs per year.

There are still relatively few secondary processing units, and they are definitely under-inventoried (table 3.11).

Table 3.12 summarizes the quantities produced by type of processed product.

Table 3.11: Distribution of secondary processing units

Type of unit	Number	Theoretical national capacity (m ³)
Plywood plant	4	236,000
Planed timber (floorings, moldings)	-	-
Other	-	-
Total	4	236,000

Source: MEFEPN-FORAF, 2008.

Table 3.12: Quantities produced by type of processed product

Product (m ³)	2005	2006	2007
Sawn wood	200,151	200,239	296,406
Sliced veneer	2,856	-	1,285
Peeled veneer	396,581	297,290	180,516
Plywood	180,594	32,900	84,795
Planed wood	-	-	-

Source: MEFEPN-FORAF, 2008.

Informal Sector

By definition, this sector is difficult to quantify. However, the lack of consolidation between the various sources of statistics, and the lack of structuring among some logging operators are signs that such activity occurs, particularly in the rural forest domain.



Photo 3.4: Removing bark is the first step in wood processing.

The figure currently put forward for the planned surface area of the permanent national forest estate is 12,000,000 hectares with a quarter of forest concessions having approved management plans (table 3.13).

Table 3.13: Distribution of concessions according to their degree of involvement in sustainable management

Forest concessions	Number	Area (ha)
CFAD under definitive agreement (management plan approved)	9	3,000,000
CFAD under provisional agreement (management plan in preparation)	37	5,300,000
Plots with an uninitiated process	243	3,600,000
Total concession allocated	-	11,900,000

Source: PAPPFG evaluation, Sept. 2008.

According to Department of Inventories, Management and Regeneration (*Direction des Inventaires, de l'Aménagement, et de la Régénération des Forêts - DIARF*), production from concessions under management was 1,325,000 m³ in 2007. In all likelihood, the surface area used to obtain such a volume was in excess of the 12 annual cutting areas listed (74,392 ha according to DIARF).

Prior to the implementation of PAPPFG, lack of conservation measures led to the revocation of a number of concession permits in the public domain. Indeed many permit holders were in non-

compliance with the obligation to manage forest resources sustainably; measures set up to assist initiating the management process did not last more than a few months. However, these numerous permit returns should be compensated by an allocation process by on going adjudication.

Voluntary commitment to certification only involves a few operators, but for quite sizeable areas, as shown in table 3.14. Thus 1,300,000 ha are FSC certified today.

Table 3.14: Distribution of concessions and operators and associated areas according to type of certificate

Type of certificates	Number of concessions	Area (ha)
Keurhout	1	576,642
FSC	4	1,304,963
PAFC	0	0
Total certified sustainable management forests	5	1,881,605
OLB	3	622,399
TLTV	0	0
Total concessions with legal certificates	3	622,399
Company with ISO norm 14001	1	549,327

Source: MEFEPN-FORAF, 2008.

Forest Plantations

According to DIARE, total planted areas account for 30,000 ha (Christy *et al.*, 2003). Since the 1980s, there have been no new plantation programs. The ones in place are not subject to planned logging.

Photo 3.5: Artisanal activities can be quite profitable, but remain marginal.



Biodiversity Conservation and Development

Biodiversity Components in Gabon

Ecosystem diversity

As forests cover more than 80 % of Gabon, they occupy most of the country, with the exception of some savanna zones such as the Batéké plateaux and part of the Franceville basin in the south east, or the plains of Ngounié and Nyanga in the south west.

Four main types of forest can be differentiated:

- Mangroves (mainly red mangrove) can be found in the estuaries of Como, of Mondah and Rio Muni, and the delta of Ogooué.
- Forests on hydromorphic, marshy or seasonally flooded soils can be found in all regions of the country, on valley bottoms. They are more numerous in the coastal sedimentary basin and on the north eastern plateaux.
- Secondary forests can be found along roads and throughout the country at different stages of growth.

- Old forests. Forests without okoumés can be found in the north east and east of the country, okoumé being present elsewhere in the country. It is difficult to identify other clear zones but two gradients do appear: one North-South, with a variety of large trees getting broader to the north; and an East-West gradient with a variety of large trees broadening out to the west, and more semi-deciduous trees in the east.

Of the 12 landscapes in the CARPE program, Gabon has five in part (Monte Alén-Mont de Cristal, Gamba-Mayamba-Conkouati, Lopé-Chaillu-Louesse, Dja-Odzala-Minkébé, Léconi-Batéké-Léfni). These cross border zones make up a vast regional network as basis for implementing conservation priorities (see landscape chapters for more details).

Formal Management of Biodiversity

Protected areas cover 11 % of national territory, accounting for most of the habitat for animal and plant species (MEFPPN-FORAF, 2008). The area of the different categories of protected area according to IUCN are summarized in table 3.15 while the typology is shown in table 3.16.

To this list we can add the World Heritage listed sites (protection of unique natural and cultural elements). Zones put into reserve in logging concessions, conservation series, also help maintain biodiversity. The 13 national parks do not have approved management plans.

Table 3.15: Protected areas in Gabon

	Area (ha)	Percentage of the total forest area in the country
Area of conservation forests	> 2,919,000	> 13.2
Area category I-II IUCN	2,919,000	13.2
Area category IV	?	?
Protected forests in landscapes CARPE/CBFPC	2,778,000	95 (of total area of protected forests in the country)
Conservation series	115,000	-

Source: CBFPC, 2006.



Sources: CARPE, INC, WCS, WRI, and FORAF

Figure 3.3: Protected areas in Gabon

Table 3.16: Typology of protected areas in Gabon

Type of protected area	Protection goal	Development modes	Restrictions
Integral natural reserve	Total protection	Soil, water, flora, wildlife	Permission for researchers, water and forestry agents
Biosphere reserve	Total protection	Soil, water, flora, wildlife	Permission for researchers, water and forestry agents
National park	Total protection	Flora, wildlife, landscape	Organized and regulated tourism
Wildlife reserve	Total protection	Flora, wildlife, landscape	Regulated access
Botanical and zoological garden	Total protection	Exhibition of live animals	Regulated access
Sanctuary	Total protection	Animal or plant species	Regulated access
Hunting zone	Total protection	Wildlife	Limit on kills

Source: adapted from the Gabon Forest Code.

Economic Development of Biodiversity

Non-timber forest products (NTFP) are mentioned in the Forest Code. When the management plans for forest concessions are being prepared, they study the presence and sometimes the geographical distribution of the main NTFP, while the traditional economic sectors are described in the socio-economic diagnostic.

Three protected areas (Lopé, Pongara and Iguéla) have accommodation with a total of 23 bedrooms. ANPN trained 48 ecoguardians in 2007.

The *Zones d'Intérêt cynégétique amodiées* (ZICA or designated hunting reserves) do not exist in Gabon, because big game hunting ceased in 1981. For the 2007 hunting season, 1,684 small game hunting permits and weapon permits were issued.

Conclusions

The current legal and institutional framework in Gabon supports good forest resource management and undeniable progress has been made in terms of sustainable management. The country was even seen as a pioneer on several fronts from the beginning of 2000 onwards but the process ran out of steam, as the administration in charge of that sector had insufficient resources to guide and finance activities. In this respect, a considerable number of the areas under provisional management agreements have not seen any firm commitment to sustainable management.

The state is seeking to address this issue and secure the resources and institutional support to improve forest management. This is being achieved through decentralization and this role will gradually be taken over by PAPPFG (*Projet d'Aménagement des petits Permis forestiers gabonais*). When the texts will come out for awarding forest permits, this project of the Ministry of Forest Economy should thus extend its action over a considerable part of the forest area under concession.

In terms of biodiversity development, the new national park network represents a major asset and management plans should be developed over time.



Photo 3.6: Although not fully developed, the potential for ecotourism in Gabon is great.

