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**SECONDARY WOOD PROCESSING IN THE UDEAC COUNTRIES**

**Background paper\***

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\*The views expressed in this document are those of the author and do not necessarily reflect the views of the Secretariat of UNIDO.

Explanatory notes

The following acronyms have been used in this document:

ATIBT	Association technique internationale des bois tropicaux
CIDA	Canadian International Development Agency
ATO	African Timber Organization
EEC	European Economic Community
FAO	Food and Agriculture Organization of the United Nations
ITTO	International Tropical Timber Organization
UDEAC	Customs and Economic Union of Central Africa
UNCTAD	United Nations Conference on Trade and Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNDP	United Nations Development Programme

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## INTRODUCTION

The Customs and Economic Union of Central Africa (UDEAC) is made up of six Member States: Cameroon, Central African Republic, Chad, Congo, Equatorial Guinea and Gabon. Together they form a block which stretches from the Gulf of Guinea across to the Congo river and upwards to Lake Chad. The southern part of this block, stretching from latitude 4 north across the equator to latitude 4 south, falls within the tropical dense forest of Africa, and includes Congo, Equatorial Guinea, Gabon, the southern part of Cameroon and a small area of the Central African Republic. The rest of the block, made up of Chad, a part of Cameroon and most of the Central African Republic, falls within the Sudano-Sahelian zone. The headquarters of the Union are at Bangui, Central African Republic.

The objectives of these countries coming together under the Customs and Economic Union include:

(a) The liberalization of trade between Member States by the elimination of custom duties and the establishment of a single external tariff;

(b) The reduction, or gradual elimination of trade barriers between Member States;

(c) A close and efficient customs co-operation based on a single external tariff and UDEAC customs regulations;

(d) The harmonization of monetary policies with a view to promoting the community's activities in the fields of transportation, agriculture, industry, natural resources and finance.

UDEAC has signed co-operation agreements with the following United Nations specialized agencies and intergovernmental organizations: the Food and Agriculture Organization of the United Nations (FAO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Industrial Development Organization (UNIDO), the United Nations Conference on Trade and Development (UNCTAD) and the European Economic Community (EEC).

According to their common industrial policy, UDEAC Member States have agreed on the setting up of the following community projects:

Bauxite/aluminium in Cameroon  
Pharmaceutical products in the Central African Republic  
Watches and clocks in the Central African Republic  
Chemical complex in Congo  
Petrochemicals and plastics in Gabon  
Cement in Gabon

Considering UDEAC's volume of tropical timber resources and the limited local markets in most Member States, it might have been worthwhile to set up a community project in the field of wood industries. The Union areas dense forest covers about 71 million hectares.

The aim of the mission was to examine the situation of the wood industries with particular attention to secondary processing industries in the Member States and to propose solutions to the constraints that hamper their development.

During six weeks, from 18 July to 28 August 1989, the consultant visited five UDEAC Member States, except Chad.

## CONCLUSIONS

Cameroon, Central African Republic, Congo, Equatorial Guinea and Gabon are net exporters of wood and wood products and are therefore referred to as wood-producing countries whereas Chad is a net importer and therefore a potential market within the subregion.

The international tropical timber market went through a difficult time from 1984 to 1988 due to the world's economic recession that seriously affected the building and construction industry. The forest industries sector in the UDEAC Member States that contributes less than 5 per cent to the GNP was equally affected, but the situation was further aggravated by the following factors:

1. The exploitation of forests has remained selective and only about 11 to 15 m<sup>3</sup> of a possible 200 m<sup>3</sup> of wood are removed per hectare, as only 50 out of about 300 species interest exploiters.
2. In all countries visited, mention is made of a programme promoting lesser used species, but no specific projects are known to have yielded any results.
3. Apart from the few forest plantations (about 85,000 hectares) that exist, one cannot speak of any successfully managed forests in the subregion. Cameroon has made great strides in its forest inventories programme and Congo in the establishment of its Eucalyptus plantations.
4. Because of the scanty population in most countries, forest degradation has not attained alarming proportions, but the effects are visible.
5. There is a shortage of competent personnel at all levels - managerial and technical staff and skilled workers - in the area of wood technology and wood industries.
6. Forestry schools exist and train generalist forest officers but are not adapted to provide the specialized training mentioned above. No research on wood technology is being undertaken within the subregion.
7. Forestry services are generally ill-equipped to effectively control timber production, conversion and trade and to collect related taxes and statistics. A World Bank project is handling this aspect in the Central African Republic and in Cameroon. Good timber statistics are also kept in the Congo.
8. Skeleton professional syndicates or associations exist in some countries but are not fully functional.
9. In the primary wood-processing industry Member States concentrated most on the creation of sawmills (115 sawmills and only 9 plywood mills) which in the majority have old and poorly maintained equipment.
10. There is a general tendency in the subregion to neglect the importance of saw doctoring.
11. Extraction and transportation infrastructure remain a problem especially in areas where there are still reserves of forest resources like in the south-east of Cameroon, the north of Congo and the north-east of Gabon.

12. Because the industries are small and dispersed, a lot of resources are left unused as off-cuts, wastes and abandoned logs.
13. Secondary wood processing exists in all countries in a few semi-industrial plants, but mostly in the form of numerous road-side craft carpentry and joinery workshops that are unorganized. No statistics exist on their production and trade.
14. These industries are poorly laid out, have poorly maintained equipment and produce poor quality products.
15. Wood resources marketing is dominated by the export of logs (about 60-70 per cent) and the local conversion of poor quality logs.
16. The artisinal nature of industries, especially those of nationals, and the lack of standards for wood products makes it difficult to introduce serial production and quality control. Nationals therefore, though numerous, contribute very little to the overall production of the sector.
17. Lack of adequate financial resources constitutes also a serious handicap to the development of the sector.

#### RECOMMENDATIONS

1. Governments should make use of available research results to ensure a more sustained management of forests so as to guarantee raw materials for industry in the long term. In fact, legislations should review the duration of exploitation contracts (25 to 30 years) in order to encourage further industrialization.
2. Governments should maintain existing extraction and transportation facilities (roads, rail and river) and create new ones in order to boost up production and reduce costs.
3. Governments, regional and international bodies should seek to adopt more aggressive programmes of promoting the increased use of lesser known species.
4. World opinion ought to be summoned to support the efforts of tropical forest conservation which calls for a sustainable use of resources by supporting forest management, regeneration and the modernization of agriculture.
5. Governments, with the aid of regional and international organizations, should reinforce the training of people in wood technology and industries at all levels. While the African Timber Organization (ATO) continues the search for finances for the regional bilingual wood industries institute at Yaoundé, existing national institutions should be used to organize short-term courses for the personnel in the wood industry.
6. Assistance should be given to national small- and medium-size forest industries in order to increase their production and let them participate more effectively in the development of the sector. The formation of dynamic professional associations of exploiters, sawmillers and furniture manufacturers should be encouraged.
7. Regional bodies should co-ordinate training and disseminate research results on wood utilization for the benefit of all countries in the region.



8. Forest legislations should oblige the harvesting of a minimum number of species, provide incentives for the creation of secondary processing units as well as determine the minimum proportion of wood that must be inserted into public construction contracts.
9. Considering the present financial difficulties, Governments should provide fiscal incentives for the import of spare parts to renovate existing plants and encourage vertical integration by the addition of secondary processing units.
10. Studies should be undertaken of the craft furniture manufacturers with a view to organizing them and improving their production.
11. Governments should review the idea of creating public corporations with a monopoly in the marketing of timber and rather concentrate on the issues of product standardization, quality control and market intelligence.
12. Wood consuming countries ought to avoid protectionist tendencies and enter into trade negotiations that benefit both parties.
13. Regional organizations ought to play an intermediary role so that Member States will not create competitive industries but rather look for complementary projects.
14. Country delegations to international seminars and conferences on wood industries should include government officials as well as representatives from the industries concerned.

## COUNTRY STUDIES

### I. CAMEROON

#### A. General information

Cameroon is situated along the Gulf of Guinea between latitude 2 to 13 north and longitude 8.30 to 16.10 east. Its surface area is about 475,000 km<sup>2</sup> and it is bounded to the west by Nigeria, to the east by Chad and the Central African Republic and to the south and south-east by Equatorial Guinea, Gabon and the Congo.

Cameroon has approximately 10 million inhabitants with an annual growth rate of about 2.4. The economy is almost entirely based on the export of agricultural products even though production of petroleum has started recently.

Cameroon is an active member of UDEAC, the African Timber Organization (ATO) and the International Tropical Timber Organization (ITTO).

#### B. Forest resources

Cameroon has two main types of vegetation, the dense forest in the south and the savannah in the north. Between the two is a transitional zone.

The dense forest zone consists of:

	<u>Hectares</u>
Exploitable dense forest	17,450,000
Degraded dense forest	4,550,000
Various other forms	<u>550,000</u>
Total	22,550,000

Cameroon is therefore considered as a country rich in tropical forest resources, and the government policy aims at using this resource in the best interest of the nation. In 1982, CENADEFOR started a national forest inventory which is expected to be completed in 10 years. About half of the inventory has been completed, but due to present irregularities with external financing it is doubtful whether the 10-year target can be met. However, the data collected so far confirm the importance of the Cameroonian forest resources.

Some 118 individuals and companies (three joint-venture companies (SOFIDEL, COCAM), 48 Cameroonians or Cameroonian companies and 68 foreign companies) exploit the Cameroonian forests on the basis of licences for various areas, granted for renewable periods of five years. A recent reform of the forestry law proposes to increase the duration of these licences in order to promote industrialization.

Of the more than 8 million hectares of forest for which licences have been given out, the joint-venture companies hold 5 per cent, the nationals 26 per cent and the foreigners 69 per cent. The industry is, therefore, dominated by foreign exploiters.

The annual production of timber logs has been stabilized at around 2,000,000 m<sup>3</sup> since 1983 as shown in table 1.

Table 1. Annual log production, 1981-1988

Year	Volume (m <sup>3</sup> )
1981/82	1 808 925
1982/83	1 809 457
1983/84	1 923 207
1984/85	2 093 108
1985/86	2 087 000
1986/87	2 093 000
1987/88	1 976 000

Source: Forestry Department.

Only about 10 m<sup>3</sup> out of a potential 30 m<sup>3</sup> of wood is taken out of a hectare since exploitation is determined by an external market that knows only some 50 species of the 300 that exist in the Cameroonian forests. Prominent among these species are Ayous, Sapelli and Azobe, which account for about 60 per cent of the total production. Table 2 gives details about the 10 most exploited species.

Table 2. The 10 most exploited species, 1986

Species	Volume (m <sup>3</sup> )	Percentage of total production
Ayous	611 077	29.3
Sapelli	550 517	26.4
Azobe	204 916	9.8
Padouk	179 993	8.6
Frake	87 513	4.2
Movingui	42 993	2.05
Iroko	39 394	1.88
Bosse	34 686	1.66
Sipo	34 108	1.63
Assamela	32 349	1.54
Total	1 817 551	87.07

Nationals or companies of nationals, holding 26 per cent of the concessions, produce less than 10 per cent of timber products. The reasons for this inefficiency include:

- (a) Concessions for small areas (less than 10,000 ha);
- (b) Insufficient equipment. Equipment is hired at very high rates from expatriate companies;

(c) Nationals cannot export directly, but sell their products to foreign exporters;

(d) Nationals do not have qualified workers and are generally not well qualified managers.

The National Investment Corporation (SNI) participates in the joint-venture companies.

The expatriate companies, owning only about 20 per cent of the concession, account for about 80 per cent of the total log production and 90 per cent of all exports. They have better access to financing organizations abroad and usually integrate their activities of exploitation, transformation and commercialization.

### C. Forest and wood development institutions

In the Ministry of Agriculture, three organizations are in charge of the forestry sector:

(a) The Forestry Department. That Department is responsible for the elaboration and execution of the national forest policy. Specifically, they issue forest exploitation licences, control the exploitation and the development of wood industries, and implement the forestry law, which stipulates that 60 per cent of all logs produced be converted within the country;

(b) The National Centre for Forestry Development (CENADEFOR). CENADEFOR is a public corporation responsible for forest inventory and management and also for the development of forest industries. With regard to forest industries, CENADEFOR has promoted the participation of nationals in forest industries and the utilization of lesser-known species. To achieve this objective, CENADEFOR participates in the execution of conventions signed between the Government and the Canadian International Development Agency (CIDA) and also with UNIDO. CENADEFOR is also responsible for the execution of two forest-industry projects financed by ITTO: a pre-project study on the industrial processing of rubber-wood in Africa, involving Cameroon, Côte d'Ivoire, Ghana and Liberia, and a study on enhancing locally the value of lesser-known species (by manufacturing blackboards);

(c) The National Forestry Regeneration Agency (ONAREF). ONAREF is also a public corporation, responsible for forest regeneration and soil conservation. So far 22,747 ha have been regenerated in the dense forest with Azobe, Framire, Okourre, Sapelli, Bibolo, Frake, Moabi and Ayous; 7,488 ha in the humid savannah with Eucalyptus, Cupressus, pines and teak, and 5,103 ha in the dry savannah with Khaya senegalensis, Reen and some Eucalyptus spp.

Graduate forest officers are trained at the Dschang University Centre, and forestry technicians at the Mbalmayo Forestry School. The training for wood technologists or wood workers is not sufficiently covered by these institutions. That is why a Wood Promotion Centre (CPB) was created in Nkolbisson by a FAO/UNDP project, to train junior and middle-level wood workers. That training programme was stopped after a few years and ought to be revived in order to ensure qualified workers for wood industries.

An ATO bilingual Regional Training Centre for Woodworkers is also being envisaged for Yaoundé, if finances can be found to construct the school.

Furthermore, a CENADEFOR/Canadian Forestry Project proposes to provide on-the-job training for workers in primary processing by setting up:

(a) A pilot forest exploitation centre at Akonolinga in a 40,000 ha managed forest, for the short-term training of fellers, machine operators, measurers, tree finders etc.;

(b) A sawmill training centre near Yaoundé for short-term training of sawmill machine operators, timber graders and workers specializing in timber treatment;

(c) An equipment maintenance workshop for the training of equipment and machine mechanics, equipment operators etc.

The future of this very interesting programme is now uncertain in view of the serious problem of national financing and the re-structuring of the public forestry sector, which makes it difficult for the government to implement its own part of the responsibilities.

Some research in wood technology is being done at the University, Department of Engineering (polytechnic). CENADEFOR intends to construct a research laboratory where research results could be confirmed and trials on new species undertaken.

The investment code provides advantages and fiscal incentives to promote the development of forest industries and the National Investment Corporation participates in the financing of joint-venture companies that create wood industries.

#### D. Industrial infrastructure

A reasonable network of roads exists and favours the transportation of timber from the south-western part of the dense forest to the ports of Douala and Kribi, and into the conversion plants situated mostly around the big towns. Forest exploitation in the eastern part of the country was greatly enhanced by the creation of the trans-Cameroonian railway that runs from Douala through Yaoundé to the east at Belabo and north towards Ngoundere. On that railway also timber products from the neighbouring Central African Republic are being transported.

A problem still exists in the south-eastern part of the country from where the transportation of timber is difficult. Timber from that area has to travel on poor roads up to Belabo or is floated on the river Sangha down to Brazzaville and then taken by train to Pointe Noire for export. This makes timber quite expensive in the towns and the FOB value becomes non-competitive at the international market.

Cameroon has shipping lines that participate in the maritime transport of timber with a fleet of ships all named after certain Cameroonian timber species, e.g. Camayous, Camdousie, Camiroko, Cambubinga, Camebene etc.

Inland waterway transport of timber is limited as the rivers are only partially navigable. Thanks to several hydro-electric power stations, Cameroon is fairly well supplied with electrical energy for industrial use. Solar energy has been introduced but should be further developed in order to provide cheaper energy for industry in addition to thermal energy from the burning of wood residues.

#### E. Wood industries

Two forms of wood industries exist in Cameroon: primary wood processing that produces semi-finished products such as sawnwood, veneers and plywood; and secondary processing units comprising carpentry and joinery plants.

Primary wood-processing units

The primary wood-processing industries consist of: 60 sawmills; 4 peeled veneer and plywood mills; 1 sliced-veneer mill; 1 match-production unit. The total wood-processing capacity of the sawmills is estimated at 1,650,000 m<sup>3</sup>/year. For details on sawmill capacities see table 3.

Table 3. Sawmill processing capacity

Number of sawmills	Annual capacity (logs supply, m <sup>3</sup> )	Total capacity (m <sup>3</sup> )
32	15 000	480 000
14	30 000	420 000
9	50 000	450 000
<u>5</u>	<u>60 000</u>	<u>300 000</u>
60		1 650 000

Source: CENADEFON.

These sawmills have poorly maintained equipment, usually consisting of a horizontal or vertical band-head rig saw, a multi-blade saw, a cross-cut or trim saw and some transfers. The installed capacity is used at 60 per cent, and the conversion recovery rate is 35 per cent for export wood and 45 per cent for locally used timber. Most of these sawmills are old and need to be renovated or rehabilitated. Table 4 gives the annual log intake in relation to total log production and table 5 the yearly production of sawnwood.

Table 4. Sawmill log intake

Year	Log production (m <sup>3</sup> )	Sawmill intake (m <sup>3</sup> )	Sawmill intake as percentage of log production
1985/86	2 087 982	984 733	47.2
1986/87	2 090 596	980 016	46.9
1987/88	1 976 759	1 005 775	50.9

Source: Forestry Department.

Table 5. Production of sawnwood, 1980-1987

Year	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
Volume (m <sup>3</sup> )	410 000	423 000	454 000	552 000	580 000	492 850	489 894

The inadequate performance of the saw mills is due to several reasons, among which is the siting of the mills. The choice of location of most of the mills was not based on any economic considerations but rather in conformity with the forestry regulations which insist that any concession for more than 25,000 ha must have a sawmill built, without any specification for the type of mill.

Very few of these sawmills possess drying kilns, and sawnwood is usually sold with a very high moisture content. People complain about the quality of sawnwood at the local market and absorb its excessive price. It is evident that the domestic needs of sawnwood are not met by the supply because quite a lot of sawnwood is imported into the northern part of the country from the Central African Republic.

With regard to veneers and plywood, the following four companies operate in the country:

	<u>Annual production</u> (m <sup>3</sup> )
SOFIBEL	20,000
SFID	22,000
COCAM	11,000
ALPICAM	4,000

SOFIBEL, SFID and ALPICAM possess relatively modern equipment whereas COCAM works with very obsolete equipment, and usually has many problems. For the manufacture of plywood, all glues and resins are imported. The plywood produced for the local market has the following dimensions: 4, 5, 9, 10, 15 and 19 mm. The existing capacity of about 350,000 m<sup>3</sup> of logs is used only at about 65 per cent. Species used for plywood include Ayous, Sapelli, Eyang and Bubinga. The local demand for plywood is not met by the production, and better quality Ikoume plywood is imported from Gabon.

ECAM-PLACAGE, situated at Mbal Mayo, produces 11,000 m<sup>3</sup> of sliced veneers a year. The milling capacity of 30,000 m<sup>3</sup> logs is used at 80 per cent.

The primary wood-processing industry is well represented in Cameroon but suffers from the following problems: exporters' willingness to export logs; conversion of second-quality logs; underutilization of mill capacities; and poor quality of products due to obsolete equipment.

#### Secondary wood processing

Many reports simply say that secondary wood-processing industries do not exist in Cameroon, but this is not true. The problem is that this sector is not organized and therefore people know very little about it, even though the products of the sector are available on the open market.

There are at least 10 semi-industrial furniture or joinery enterprises in the country, five at Yaoundé and five at Douala.

In addition to these semi-industrial enterprises, there are hundreds of small road-side carpenters that make relatively good products. These are usually said to belong to the informal sector because they are not organized and their production is not accounted for in the gross national product. A list of registered semi-industrial secondary wood-processing enterprises includes:

Centre de Promotion du Bois	Yaoundé
BRIKAS	Yaoundé
NANSI	Yaoundé
SOCAMOB	Yaoundé
LA LIBAMBA	Yaoundé
ANFLO	Douala
MEUBLERIE	Douala
BATIBOIS	Douala
EXOBOIS	Douala
SOMENO	Ngoundere
MCI	Mbalmayo

SOFIBEL (Société Forestière et Industrielle de Belabo) is the only example of an integrated industry that exists in Cameroon. It is a joint venture in which the Government has the majority of shares. It exploits a managed forest reserve of 210,000 ha at Belabo on the trans-Cameroonian railway line, and operates a sawmill that converts 38,500 m<sup>3</sup> of logs into 16,500 m<sup>3</sup> of sawnwood, employing about 115 people. It further operates a peeled-veneer and plywood mill employing 223 people and producing about 20,000 m<sup>3</sup> of plywood annually.

SOFIBEL also operates a semi-industrial furniture and joinery workshop employing 40 people and executing all sorts of carpentry and joinery works to order. They produce and sell furniture and joinery products like panel and flash doors, windows, mouldings etc. They have a drying kiln of 240 m<sup>3</sup> capacity and modern wood-working machines of the SCM, Chamon and Dankaer type. Only about 20 per cent of their products are exported and the rest sold locally.

Most of the enterprises engaged in secondary wood processing have at least 10 machines in their workshops. Some belong to the proprietors of sawmills from where they obtain their raw materials, while others just buy their raw materials from the open market. Only a few of them operate drying kilns and treat their wood before selling it.

Other characteristics of the sector are:

(a) Conception and design. Designers do not exist, but everyone, including craftsmen, can very well imitate products shown in European catalogues;

(b) Raw materials. Raw materials are not available in sufficient quantities and are usually neither treated nor standardized. A draft text is under study in the Ministry of Industries aimed at standardizing sawnwood. Local prices of sawnwood are regarded as expensive;

(c) Furniture. Manufacture by craftsmen exists. It is important to note that all furniture, whether produced by semi-industrialists or craftsmen is made to order and there is no serial production;

(d) Joinery products. Doors, windows and rafters are manufactured to order since they have not been standardized;

(e) Pallets are manufactured by each firm that needs them, e.g. COCAM;

(f) Wooden crates. One sawmill (SEFN) at Managam in the western province makes wooden crates for the packing of fruits;



(g) House construction. Some companies specialize in the construction of wooden-frame houses (e.g. BATIBOIS, EXOBOIS and MCI). The Cameroon Housing Estate Company has just ordered 60 houses to be built of wood by SOCAMOB;

(h) Equipment. The secondary wood-processing industry in Cameroon disposes of lots of equipment, but since acquisition and utilization are not co-ordinated it is difficult to evaluate the impact. Equipment originates mainly from the Federal Republic of Germany, France, Italy and the United Kingdom, and machines from well-known manufacturers like Wodkins, Dewall, Danraest, SCM, Volmer, Stenner, Rye etc. are found. These machines are not being used at full capacity due to the limited quantity of production, but more importantly because of their poor state of maintenance.

CENADEFOR's Wood Promotion Centre (CPB) has more than 50 machines installed in its workshop and serves as a model for the sector. Within the framework of an on-going UNIDO technical assistance project, the Centre hopes to develop serial production and undertake the training of staff from small- and medium-size enterprises and of craftsmen. The project will also introduce solar energy for timber drying, develop prototypes for office and school furniture and adapt the saw-doctoring workshop so that it can also provide services to the members of the industry.

#### Master plan for industrial development

The development of the forest industries was one of the important components of the master plan for industrialization of Cameroon prepared in 1983 with the assistance of UNIDO.

#### National Technical Timber Committee

Concerned about the slow development of the local wood industries, the Ministry of Agriculture, on 24 July 1989, created a technical committee to examine the situation of forest industries and to propose the preparation and execution of a timber plan.

It is hoped that this inter-ministerial committee will not, like in the past, concentrate only on the problems of primary wood processing but will also examine issues concerning the development of the secondary wood-processing sector which is vital if Cameroonians are to consume locally manufactured products.

### F. Marketing and trade

#### The internal market

Unlike in other countries of the subregion where the local market for wood products is limited, Cameroon's internal market is considerable and remains unsaturated in spite of importations from neighbouring countries. Sawwood is sold at sawmills and open depots while veneers and plywood are sold at specialized shops for building materials. Prices for these products are homologated by the Government.

After a gradual rise in the growth rate of local consumption of sawwood from 1980 to 1984, the situation changed and continues to decline due to the economic recession that has adversely affected the building industry (see table 6). To these figures the volume of sawwood imported from the Central African Republic ought to be added, but exact figures could not be obtained.

Table 6. Local consumption of sawnwood, 1980-1987

	Year						
	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
Volume (m <sup>3</sup> )	283 748	307 256	327 000	444 137	483 990	412 372	392 833
Growth rate (per cent)		8.2	19	20	8.9	-12.8	-6.8

Source: CENADEFOR.

The prices for sawnwood range from CFAF 60,125 to 85,500 per m<sup>3</sup>.

With regard to peeled veneers and plywood, almost all of it is used locally by the building sector and also by the furniture industry. The demand is unsaturated and about 3,000 m<sup>3</sup>/year are imported from Gabon. The local price for plywood ranges for white wood from CFAF 122,901 to 138,286, and that for red wood from CFAF 141,949 to 186,775 per m<sup>3</sup>. Sliced veneer is almost entirely exported; only an insignificant amount is used locally.

The fact that other wood-based products and furniture that could be regarded as substitute for wooden furniture are being imported further proves the existence of a surplus demand for wood products.

#### Export market

During the last three years, about 37 per cent of the total log production was exported (see table 7 for details). Exporters and exploiters claim that the export of logs is necessary to permit them to balance their finances. The Government, however, is aiming at a complete ban of log exports in the near future. This objective can be met only if the secondary processing industries are being developed to guarantee more value added to the wood resource. In order to maintain or increase the level of foreign exchange earnings, the quality of the finished products must be competitive. The export market should not only be Europe but should include a good part of neighbouring countries like Chad and Nigeria.

Table 7. Export of logs and wood products, 1982-1988

	Year					
	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88
Logs (m <sup>3</sup> )	844 319	819 207	799 098	744 979	704 540	712 796
Sawnwood (m <sup>3</sup> )	86 597	107 863	96 010	70 978	97 062	148 521
Veneer (m <sup>3</sup> )				62 500	59 000	61 000

The export price for sawn timber FOB Douala ranges from CFAF 120,000 to 132,500 per m<sup>3</sup>, that for white plywood from CFAF 122,000 to 145,000 while that for red plywood varies between CFAF 140,000 and 165,000 per m<sup>3</sup>.

So far no products of secondary processing are exported, first because the internal demand has not yet been met, and second because the quality is not competitive on the export market.

#### G. Conclusions

1. Cameroon has a good reserve of forest resources but does not get enough benefits from their exploitation.
2. The Cameroonian wood-processing industry is characterized by antiquated equipment, insufficiently qualified personnel, and a lack of product standardization which results in low productivity.
3. The number of Cameroonians or Cameroonian companies operating in the sector is quite impressive but their production is not comparable to their number. This stems from the fact that they lack adequate managerial and technical skills, as well as adequate financing and equipment to operate efficiently.
4. The projects conceived within the framework of the CENADEFOR/Canadian assistance programme which envisages the creation of a pilot forest exploitation, a sawmill training centre, a forestry credit line and a forestry equipment pool are recommendable for the future of the wood industry.
5. The above projects which promote the primary wood-processing sector, would be completed by the projects being executed within the UNIDO/CENADEFOR programme which focuses on the secondary wood-processing sector, dealing with the grouping of species, designing product prototypes, introducing solar energy for timber drying, opening up the saw-doctoring workshop of CENADEFOR for the members of the industry and, above all, training of counterpart personnel and introducing serial production.
6. The problem of transporting timber from the rich reserves in the south-east of Cameroon will persist as long as the proposed evacuation route to the proposed deep-sea port at Gran Batanga near Kribi is not realized.
7. Since the country is at present suffering from a general economic recession, it is necessary to develop the secondary wood-processing industries so that the people can rely on home-made goods in order to save foreign exchange.

#### H. Recommendations

It is recommended that the Government, bilateral and international co-operation be mobilized to create a more favourable climate for the development of secondary wood-processing industries by:

1. Accelerating the rational exploitation of forests by harvesting of more species per unit area, so that the nation can feel a greater impact of its forest resources on its national economy.

2. Launching a dynamic and aggressive promotion programme for the use of lesser known species so that by using more species the cost of timber would be reduced to favour further processing.
3. Stimulating the renovation of existing industries and the creation of supplementary ones in preparation for the eventual ban of log exports.
4. Continuing the programme of assistance to small- and medium-scale forest enterprises, started within the Canadian forestry assistance programme, so that the future development of the forestry sector can be based on a group of competent and efficient nationals.
5. Encouraging existing industries to further integrate their activities to include secondary wood-processing, similar to SOFIBEL.
6. Re-dynamizing the forest-producers syndicate and possibly creating specialized associations of forest exploiters, sawmillers, joinery and furniture manufacturers to ensure better co-operation and efficiency.
7. Pursuing the programme of standardization for wood products and the introduction of quality control and market intelligence.

Appendix

**PERSONS MET IN CAMEROON**

Ministry of Agriculture

John Niba Ngu, Minister of Agriculture  
Tikela Kemone, Secretary of State for Agriculture  
Ze Meka Emmanuel, Director of Forests  
Mabon Wehiong, Director General of CENADEFOR  
Youngang Jacques, Director General of ONAREF  
Ebamane Nkoumba, Director of Forest Industries  
Lefang Paul, Chief of Service Forest Industries  
Nchindap Lucas, Assistant Manager of CPB  
Semey Clement, Assistant Director of Forest Industries

Ministry of Planning and Territorial Development

Finlay Doh, Director of Planning

Ministry of Industrial and Commercial Development

Ndonga Celestin, Director of Industries  
Nasako Fritz, Assistant Director of Industries  
Aka'a Jean-Louis, In charge of Studies

## II. CENTRAL AFRICAN REPUBLIC

### A. General information

The Central African Republic covers a surface area of about 623,000 km<sup>2</sup>. It is bounded to the west by Cameroon, to the north by Chad, to the south by Congo and Zaire and to the East by Sudan. The capital town is Bangui.

It has a typical tropical climate with a marked dry season from December to April and a rainy season from May to November. The duration of the rainy season shortens gradually from south to north. Temperatures range from 25 °C to 30 °C in the north-east. The land undulates, with an average altitude of between 500 and 800 m above sea level.

The population is estimated at 2.5 million inhabitants, concentrated around the southern and western parts of the country, with an annual growth rate of 2.4 per cent.

The per capita income is estimated at \$US 270 (UDEAC) and the balance of payments shows negative figures.

The Central African Republic hosts the headquarters of UDEAC and is an active member of ATO.

### B. Forest resources

The vegetative cover of the Central African Republic consists of dense tropical forest around the south-western part of the country (the Lobaye, Sangha and Haut Sangha regions), open, dry, semi-deciduous forest and various combinations of wooded and grass savannah lands.

The tropical dense forest, with an area of about 3.4 million ha, is considered one of the richest forest resource zones and is the only area that is susceptible to provide raw materials to the industries. It represents about 5 per cent of the national territory. Valuable species include Sapelli, Obeche and Limba. There is also a block of relatively dense secondary forest, north of the town of Bangassou in the Mbambou region, which covers an area of 300,000 ha.

In addition to the above there are 15.9 million ha of productive open forests and 16 million ha of unproductive open forest, consisting of gallery forests and Raphia bushes.

#### Situation of forests and reserves

	<u>Hectares</u>
Productive forests	300,000
Integrally protected forests	150,000
National parks	1,340,000
Game reserves	3,860,000
Forest plantations	<u>6,000</u>
Total	5,716,000

On the basis of limited forest inventories undertaken by CIPT during late 1960, the timber potential of the dense forest area was estimated at 1,102 million m<sup>3</sup>. The estimated potential volume of different species is shown in table 8.

Table 8. Potential volume of timber, by species

Trade name	Botanical name	Volume (m <sup>3</sup> )
Limba	<i>Terminalia superba</i>	24 920 000
Sapelli	<i>Entandrophragma cylindricum</i>	23 584 000
Ayous	<i>Triplochiton scleroxylon</i>	6 913 000
Bete	<i>Mansonia altissima</i>	2 392 000
Mukulungu	<i>Antranella congolensis</i>	2 318 000
Iroko	<i>Chlorophora excelsa</i>	1 649 000
Kosipo	<i>Entandrophragma candollei</i>	1 533 000
Sipo	<i>Entandrophragma utile</i>	1 480 000
Dibetou	<i>Lova trichilioides</i>	1 447 000
Doussie	<i>Azelia africana</i>	693 000
Khaya	<i>Khaya spp.</i>	615 000

The first three species, Limba, Sapelli and Ayous represent about 80 per cent of the exploitable volume.

Following the selective system of exploitation practiced in this country, like in most African countries, out of a total of about 200 m<sup>3</sup> only about 15 m<sup>3</sup> of a few valuable or known species are felled. This explains the privileged position enjoyed by the three main species mentioned above.

Table 9 shows the annual log production for the years 1975-1988, and table 10 the volume of logs produced in 1988, by species.

Table 9. Evolution of log production, 1975-1988

Year	Volume (m <sup>3</sup> )
1975	224,967
1976	321,476
1977	379,597
1978	368,600
1979	296,246
1980	325,070
1981	340,804
1982	297,362
1983	254,430
1984	260,262
1985	268,733
1986	198,286
1987	154,354
1988	152,198

Source: Forestry Department.

Table 10. Log production in 1988, by species

Trade name	Botanical name	Utility class a/	Volume (m <sup>3</sup> )
Sapelli	Entandrophragma cylindricum	D	89 934.8
Sipo	Entandrophragma utile	D	10 603.4
Kossipo	Entandrophragme candollei	D	1 315.7
Tiama	Entandrophragma angolense	D	2 204.0
Bosse	Guarea adrella	D	152.9
Ayous	Triplochiton scleroxylon	LU	41 981.9
Padouk	Pterocarpus sayouxi	HU	83.0
Mukulungu	Autrenella congolensis	HU	672.5
Acajou	Khaya ivorensis	D	2 254.6
Dibetou	Lova trichilioides	D	242.0
Iroko	Chlorophora excelsa	LU	1 120.9
Doussie	Afzelia africana	HU	437.9
Limba	Terminalia superba	LU	42.0
Azobe	Lophira alata	C	255.0
Bete	Mansonia altissima	D	8.3
Tchitola			258.0
Eyong	Sterculia oblonga	LU	131.0
Difou	Morus mesozygia		112.0

a/ A classification of the United Kingdom market for sawn hardwoods. See O. P. Hanson, Research report 2/81, TRADA, United Kingdom.

According to the classification by utility, based on the mechanical and strength properties of the species, they are distributed as follows:

Decorative timber	D	8 species
Light utility timber	LU	4 species
Heavy utility timber	HU	3 species
Construction timber	C	1 species

This shows that the species currently exploited cover all four utility classes identified. Therefore, as far as species are concerned, it is possible to prepare suitable timber for any utilization or purpose, and to develop almost all types of wood industries.

#### Forest plantations

Due to the low population density (3.7 inhabitants per km<sup>2</sup>), forest degradation through farming and other human action is not a major problem. The annual deforestation rate for purposes of agriculture is estimated at 5,000 ha.

The National Forestry Bureau (ONF), responsible for forest regeneration and afforestation, has planted, purely on trial basis, 100 ha in the dense forest of Lole near Mbaiki. They also planted 150 ha of Eucalyptus in the Bambari region for purposes of fuel wood, and they are taking care of a 4,000-ha plantation that was started before ONF was created. The species used in these plantations include Cedrella adorata, Terminalia ivorensia and Cassia siamea.



### C. Forest and wood-development institutions

The Forestry Department within the Ministry of Forestry, Wildlife, Fisheries and Tourism, determines and implements the national policy of forest resources and wood-industries development. That Ministry authorizes forest exploitation by issuing concessions referred to as "temporary exploitation permits", whose period of validity would range from five to 20 years, depending on the expected level of industrial investment. The exploitation taxes and fees, based on surface area and timber production, the regeneration fees etc., are determined and collected by the Forestry Department. The Forestry Law lays down the rules and regulations that guide the wood industries.

The Ministry of Trade, Industries and Small- and Medium-Sized Enterprises plans and controls the national policy of industrialization on a very general level. Together with the Ministry of Forestry, through an inter-ministerial arrangement, they determine the merchantable value for the different timber species. These values, which are a quarter of the FOB values, are used as a basis for the determination of the various taxes and fees mentioned above. The Ministry of Trade also prepares the investment code which guarantees protection to industrial investment and provides certain tax and financial incentives in order to promote industrialization. Some of these incentives include:

- (a) Reduced taxation on profits;
- (b) Five per cent import tax on equipment for new industries;
- (c) Exoneration from land taxes for real estate;
- (d) Abolition of export taxes on locally manufactured goods.

ONF is responsible for forest inventory and management, as well as for the promotion of wood industries and the increased utilization of wood, especially for house building. It is planned to start soon a national forest inventory, with Canadian assistance. To achieve its objective of wood promotion, the Bureau operates a small carpentry and joinery workshop at its premises at Bangui, with equipment acquired and installed with assistance from the Federal Republic of Germany.

The Centre for Assistance to Small- and Medium-scale Enterprises and Artisans (CAPMEA) was set up with technical assistance from the International Labour Organization (ILO) and further assistance is expected from the UNDP and UNIDO. The Centre helps enterprises through consultations and advises them on technical and financial management.

No research on wood is carried out in the country, as the Centre Technique Forestier Tropical concentrates only on silvicultural research.

Concerning forestry training, a section for the training of sub-professional personnel (ingenieur des techniques forestières) was recently started within the Higher Institute for Rural Development (ISDR) at Mbaiki. All other forestry personnel are trained abroad, but their number is insufficient. The training of industrial workers is supposed to be handled by the National Office for Inter-professional Training (ONIFOP), who organize courses on woodworking. Part of the tax for forest regeneration and industrial training is paid into ONIFOP.

The former Centre forestier de formation professionnelle et de demonstration, created by FAO, together with similar centres in Cameroon, Congo and Côte d'Ivoire, closed down and its equipment was transferred as government share to a joint-venture forest industry which was equally wound up. If wood industries are to be developed, then the training of personnel has to be given priority.

As to financing the development of small- and medium-scale industries in the wood sector, the Agricultural and Development Credit Bank (BCAD) created in 1984 as a joint venture between the Government (33 per cent) and the French "Credit agricole", is disposed to give loans through the intermediary of an organization like CAPMEA, provided that the latter will be restructured.

#### D. Industrial infrastructure

##### Roads

It is estimated that there are about 6,000 km of roads in the country. Very few of them are asphalted, and most of them are barely passable during the rainy season. Due to such poor conditions, the road transport of logs is usually very expensive, and therefore only few, very valuable timber species can profitably be extracted.

##### Water transport

The main means of transport for exports and imports is the Oubangui river, a tributary of the river Congo (Zaire). The rivers Lobaye and Sangha that drain the dense forest area where timber is harvested serve for the transport of logs by floating. The water level drops during the dry season and makes them non-navigable. The Sangha is navigable for only 3 to 4 months of the year and the Lobaye for 6 to 7 months of the year.

##### Ports

The Central African Republic is a land-locked country and depends for its imports and exports on the seaports of Douala in Cameroon and Pointe Noire in the Congo.

#### E. Wood industries

Since the forests of the Central African Republic were opened up to timber exploitation in the early 1940s, more than 20 million ha have been given to about 13 exploitation companies that were involved mainly in primary timber processing. Due to various difficulties many companies closed down and at present only six are operating.

##### Primary processing industries

Table 11 contains the six companies operating today in the exploitation of forests together with details about the size of the area they may exploit and their willing capacities.

Table 11. Companies engaged in primary wood processing

Name	Concession area (ha)	Saw mill capacity (m <sup>3</sup> )	Proprietor
COROMBIS (RCA - ROUMAIN)	400 000	30 000	Roumany
EFBACA	171 750	20 000 [Veneer and plywood 1 200 000 m <sup>2</sup> ]	Ballet
IFB	55 000	12 000	Group Gaden
SCAD	167 200	70 000 [plywood]	Rougier
SCIPLAC	70 000		P. Maissiat
SICA-BOIS	200 000	15 000	Leroy

Source: Forestry Department.

Only two of these six companies operate both a sawmill and veneer/plywood mill (SCAD and EFBACA). The four others operate only sawmills among which SICA-BOIS is the largest and most prosperous. Table 12 shows the development of the output for each of these companies over the period 1982-1988, and table 13 summarizes that output by type of product.

Table 12. Production of companies engaged in primary wood processing, by company and product, 1982-1988 (m<sup>3</sup>)

Company and product	1982	1983	1984	1985	1986	1987	1988
<b>CAROMBOIS</b>							
Logs	39 632	29 152	28 979	27 021	20 447	21 458	17 105
Sawnwood	5 416	4 186	5 598	6 212	5 132	5 764	4 057
<b>EFBACA</b>							
Logs	20 987	16 269	19 726	20 985	19 842	15 159	25 118
Sawnwood	5 167	4 394	5 324	5 769	5 409	4 049	6 902
Peeled veneer	489	708	507	342	342	391	829
Sliced veneer	86	27	21	26	11	0	
<b>IFB</b>							
Logs	35 998	30 891	22 512	26 331	26 681	16 885	26 200
Sawnwood	16 975	14 968	11 102	11 302	9 378	4 500	10 370

continued

Table 12 (continued)

Company and product	1982	1983	1984	1985	1986	1987	1988
<b>SCAD</b>							
Logs	53 670	62 276	44 210	42 304	33 407	25 903	26 800
Sawnwood	-	3 510	1 845	3 367	6 657	8 096	11 650
Veneer	-	-	-	-	-	-	-
Plywood	8 460	8 374	5 176	4 718	4 167	3 406	520
<b>SCIPLAC</b>							
Logs	2 748	4 024	4 583	6 405	6 244	1 348	1 686
Sawnwood	850	1 506	1 363	1 773	1 663	642	-
<b>SICA-BOIS</b>							
Logs	55 788	60 241	66 737	63 360	63 083	50 240	44 896
Sawnwood	18 099	19 407	18 471	14 970	15 938	15 051	11 971

Source: Forestry Department.

Table 13. Total production of six companies engaged in primary wood processing, by product, 1982-1988 (m<sup>3</sup>)

Product	1982	1983	1984	1985	1986	1987	1988
Logs	208 323	202 853	187 455	186 406	169 704	130 993	141 805
Sawnwood	46 507	47 971	43 703	43 393	44 177	38 102	79 561
Peeled veneer	489	708	507	342	342	391	829
Sliced veneer	86	27	21	26	11	-	2
Plywood	8 460	8 374	5 176	4 718	4 167	3 406	520

Tables 12 and 13 show that, although some companies have been liquidated, the production of the remaining ones has steadily decreased between 1982 and 1987. This trend appears to have changed in 1988, but it remains to be seen if this tendency of recovery will continue in 1989.

The primary wood-processing units are generally located in the Lobaye and Sangha regions where the exploitable dense forest is situated.

Generally the mills operate at about half of their capacity and the transformation factor is estimated at 65 per cent.

#### Secondary processing industries

Secondary wood processing exists but has remained at the level of artisanal manufacturing. The building of prefabricated timber houses, formerly performed by SEFI, has been abandoned.

Some of these carpentry and joinery units possess some good machines and sometimes some good expatriate managers and produce reasonable to very good furniture, but only to order. There is, therefore, no unit that undertakes serial production.

In the following, some of the secondary processing units are described:

(a) Joint production unit of three exploitation companies. Three forest exploitation companies that operate sawmills have integrated their activities to include machines that produce certain joinery products such as mouldings, battens and rebates. These are:

IFB at Batalimo;  
SCD/DAMECA, with a furniture workshop at Bangui;  
EFBACA, the only forestry industry that operates both a peeling and slicing veneer mill uses about 30 m<sup>2</sup> of sliced veneer to make cigar boxes for SOCACIC at Bangui. These boxes are transported from Nola to Bangui by a private plane. This company's secondary processing unit that used to make furniture, joinery and prefabricated houses has been almost abandoned;

(b) National Timber Bureau Workshop (ONF). A public corporation attached to the Ministry of Forestry, responsible for promoting research and the use of wood, as well as the development of wood industries. It operates a small workshop at Bangui on a commercial basis.

The Bureau does not appear to have enough resources, finance and trained personnel to carry out its objectives successfully. The workshop has just six old machines that are not well maintained consisting of a vertical band saw, a table circular saw, a planer, a mortising and tenoning machine, a trimmer and a moulder. It has seven workers. Sanding is done by hand and varnishing with the use of a brush.

It is hoped that when the Bureau shall be re-organized within the framework of the Structural Adjustment Programme it will be in a better position to undertake the activities assigned to it.

(c) Société industrielle de menuiserie (SIM). Owned by an expatriate, this company produces furniture, doors, windows and does general wood construction work to specific orders. The company has more machines which are well laid out and well maintained and it employs 48 people. The quality of the products is good.

(d) L'atelier de menuiserie et d'ebenisterie de Berberati (AMEB). It is the biggest furniture and joinery industry, created as a pilot project with technical and financial assistance from the Federal Republic of Germany. As soon as it was handed over to the Government (i.e. to ONF) in 1981, its management and performance deteriorated for lack of qualified managers and financial support, poor accounting systems etc. The Government has now decided to re-vitalize its operation and for that to happen:

- (i) A more favourable technical, administrative and financial environment has to be created;
- (ii) The training of personnel has to be reinforced;
- (iii) It may be necessary to look for some external assistance (Federal Republic of Germany or UNIDO).

Consultants from the Federal Republic of Germany estimated the cost of such rehabilitation at about CFAF 220 million, over a period of three years. New equipment to be acquired would include: tools, spare parts, a delivery lorry, a four-wheel drive vehicle and an electric generator.

As mentioned above, there is a great number of small road-side furniture manufacturers who manage completely on their own, without any assistance or follow-up on their production.

#### F. Marketing

Companies that undertake primary processing, i.e. harvesting of logs, sawmilling, veneer and plywood manufacture, are almost entirely in the hands of expatriates who cater mostly for the export market, and this is why the local market is apparently non-existent (see table 14).

Table 14. Total production (all companies), exports and local consumption of primary wood products, 1985-1988 (m<sup>3</sup>)

	1985	1986	1987	1988
<b>Production</b>				
Log	268 733	198 286	154 354	152 198
Sawnwood	55 762	54 417	51 997	50 569
Peeled veneer	1 429	1 139	453	829
Sliced veneer	26	11	-	2
Plywood	4 718	4 167	3 406	520
<b>Export</b>				
Logs	94 672	44 118	37 714	26 328
Sawnwood	32 499	27 164	23 930	23 251
Peeled veneer	1 134	838	445	652
Sliced veneer	32	-	-	15
Plywood	3 397	1 784	1 183	543
<b>Local sales</b>				
Logs	-	-	-	132
Sawnwood	22 866	24 456	21 459	23 578
Veneers	22	201	57	-
Plywood	1 250	2 029	909	1 300

On the other hand, the country has to import furniture and other wood products because there is little or nothing available and what is available is too expensive.

Table 14 shows that at least about 65 per cent of the logs produced are transformed within the country, and that about half the sawnwood produced is used locally. This amounts to about 22,000 m<sup>3</sup>.

The greater part of the wood exports is directed to Western Europe while about half of the sawnwood is exported to Chad, Sudan and the northern part of Cameroon.

The sales prices for those products are shown in table 15.

Table 15. Sales prices for logs, sawnwood and plywood

Product	Species	CEAF	
		Local market	Export, FOB Pointe Noire
Logs	Sapelli		55 000
	Sipo		57 000
Sawnwood	Sapelli	40 000	80 000
	Ayous	30 000	50 000
Plywood (standard)		120 000	

### G. Conclusions

The development of the forest and wood industries in the Central African Republic which seems to have had a good start, has remained stagnant for a long time and has declined in recent years, with the results that several industries had to close down.

This reduction in the performance of the primary transformation sector has further retarded any progress that could have been made in developing the secondary wood industries.

The main constraints that have given rise to this situation include:

1. The land-locked nature of the country and its difficulties in transporting products to shipping ports like Douala in Cameroon and Pointe Noire in the Congo.
2. The lack of qualified personnel due to inadequate training facilities.
3. Scarce financial resources for investment in new plants to replace the old and obsolete ones, and even for spare parts to renovate existing plants.
4. Import taxes for spares and consumable materials that are fairly high, i.e. about 60 to 80 per cent of the CIF values.
5. The cost of petrol and lubricants which is continuously rising in spite of the proximity to petroleum-producing countries like Cameroon, Congo, Gabon and Nigeria (CFAP 300/1 for gas oil and CFAP 350/1 for petrol). The average consumption by a timber company is estimated at 50,000 to 80,000 litres per month.
6. The fact that the few existing industries do not realize the importance of product design and simply believe in copying from each other or from unadapted catalogues.
7. The high price and poor quality of sawnwood, plywood etc., because the primary processing industries aim mostly at the export market.

8. The fact that there are no original designers and that wood products are not standardized, which makes the introduction of serial production difficult, even though the country has suitable timber species for almost all uses.

#### H. Recommendations

It is recommended that the Government, bilateral and international assistance be mobilized to create a more favourable environment in the country that would boost the development of the secondary wood-processing industries by:

1. Reviving, dynamizing and rationalizing the exploitation of forests and the primary transformation sector so that sawnwood, plywood and other raw materials are available at reasonable prices.
2. Encouraging some of the primary processing industries to integrate their production further by adding plants for the manufacture of finished products.
3. Solving the problems of accessibility and extraction of trees by constantly improving on basic industrial infrastructure and by constructing the projected "4th parallel" road, to link up the south-western part of the country to the trans-Cameroonian railway at Belabo for transport to the port of Douala.
4. Reviewing the investment code and the taxation system so that the import of spare parts and raw materials can be an incentive for the development of the small- and medium-scale enterprises.
5. Reviewing, within the process of the Structural Adjustment Programme, existing institutions such as ONF, CAPMEA, UNIFOP etc. so that their activities would effectively encourage the development of the small- and medium-scale enterprises.
6. Re-activating, in co-operation with international organizations, including UNIDO, the AMEB and ONF workshops to serve as pilot plants for the industries, where training, demonstration, wood seasoning quality control and machine maintenance could be undertaken.
7. Encouraging members of the industry to organize themselves into professional or technical associations so as to boost up their sector and be able to make constructive representations.



Appendix

**PERSONS MET IN THE CENTRAL AFRICAN REPUBLIC**

**UDEAC**

Mr. Ambroise Foalem, Secretary General  
Mr. Loyi, Director, Harmonisation Industrielle  
Mr. Abdoulahi Mahamat, Expert, Harmonisation Industrielle  
Mr. Paul Atemazen, Director for General Affairs  
Mr. Augustine, Chief of Documentation

**Ministry of Forestry, Wildlife and Fisheries**

Mr. Raymond Mbitikon, Minister  
Mr. Koulengbom, Secretary General  
Mr. Dieudonne Nzimasse, Director of Forestry  
Mr. Thomas Damio, Technical Director, ONF

**Ministry of Trade and Industry**

Mr. Alphonse Amoda, Director for Industrial Development  
Mr. Mathias Allendi, Chief of Production

**CAPMEA**

Mr. Daniel Nditifei-Boysembe, Director General  
Mr. Jean-Marie Haller, Technical Adviser

**SIM**

Mr. Francois Arnaud, General Manager

### III. CONGO

#### A. General information

Dissected by the equator, the Congo is situated between latitude 4° north and 5° south. It covers a total surface area of about 342,000 km<sup>2</sup> with a population of about 1.8 million. Its annual population growth rate is 2.7. Seventy per cent of the population is found on 30 per cent of the land area around Brazzaville, Pointe Noire and two other towns. The rural population is scanty, about one inhabitant on 2 km<sup>2</sup>.

The temperatures range from 23 °C to 27 °C, and the rainfall from 1,200 mm to 2,200 mm. The per capita income is about \$US 1,700. The Congo is an active member of ATO and UDEAC.

#### B. Forest resources

The Congolese forest covers an area of about 20 million ha, but the really productive forest extends only over some 14 million ha, 10 ha in the northern part of the country and 4 ha in the south.

The forests in the north are still fairly intact and unexploited because the area is inaccessible, whereas the littoral regions of Kouilou and Mayombe in the east, accessible by road and by railway, have been exploited and are now less rich in valuable species. Figure I shows a map of Congo and the regions referred to above. Since the beginning of the exploitation of the Congolese forests, Okoume and Limba have always constituted 90 per cent of the total production.

In the northern part of the country, the main species found are Sapelli, Sipo, Ayous and Afromosia.

According to the limited forest inventory projects that have been carried out in the country, the total volume of commercial species is estimated at about 90 million to 120 million m<sup>3</sup>.

#### Forest exploitation

According to decree No. 84/910 of 19 October 1984, and with the aim of ensuring a rational exploitation of the forests, the entire area was divided up into "Unité forestière d'aménagement" (UFA), of which 16 are in the north and 11 in the south. Two types of authorizations are issued for forest exploitation:

- (a) Permits to allow the exploitation of a limited number of trees;
- (b) Contracts for exploitation, covering a given surface area.

The forest-exploitation companies in the country are divided up into State, joint-venture and private companies. Their participation is shown in table 16.

Figure I. Map of the Congo

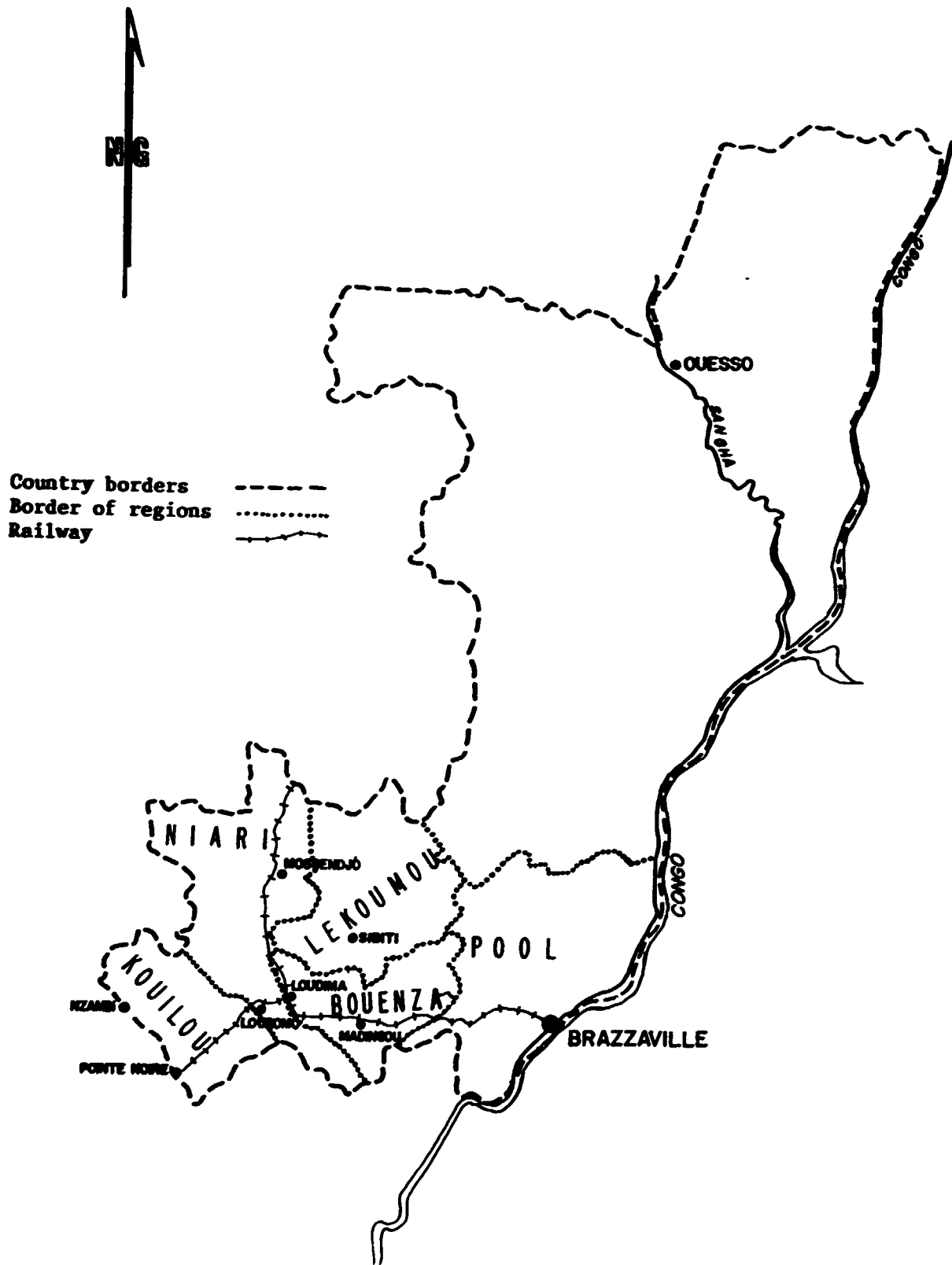


Table 16. Forest-exploitation companies

Type of company	Companies		Log production, 1985		Log production, 1986	
	Number	Percentage	m <sup>3</sup>	Percentage	m <sup>3</sup>	Percentage
State	3	7	37 916	7	61 929	9
Joint ventures	5	12	114 753	20	146 528	21
Private nationals	22	51	79 144	14	89 022	12
Private expatriates	13	30	340 055	59	417 402	58
Total	43	100	571 860	100	714 881	100

Source: Forestry Department.

Table 16 shows that even though national Congolese forest exploiters constitute 51 per cent of the number of forest exploitation companies, they contribute only 13 per cent to the total production of logs, while the private expatriate companies that represent only 30 per cent of the total number account for 58 per cent of total production. An effort has to be made to increase the participation of nationals by expanding their companies and making them more efficient.

The two State companies, SNEB and SONATRAB which experienced serious financial and management problems, were fused together to form COMETRAB. The difficulties encountered by the country's forestry sector, due only in part to the poor international timber market, caused many companies to close down.

The total surface area given out under forest concessions in 1986 amounts to about 7,107,374 ha.

The total log production from 1983 to 1987 is shown below:

Year	Log production (m <sup>3</sup> )
1983	513,545
1984	587,000
1985	571,860
1986	714,881
1987	690,595

The record log production of 845,000 m<sup>3</sup>, attained in 1971, has never been met again. The northern part of the country that has for many years been virtually unproductive now shows signs of increasing activities.

The species that dominate log production are Sapelli and Sipo from the Sangha region in the north and Okoume and Limba from the Buenzea and Pool regions in the south.

From the point of view of utilization, these species are a good representation, Sapelli and Sipo being good examples of red wood, suitable for high-quality furniture and decorative joinery, while Okoume and Limba are light-white woods for veneers and other jobs that require light timber.

The Congolese forest is not seriously threatened by destruction since the population is not dense. Deforestation is estimated at 20,000 ha per year.

### Forest plantations

The Congo offers very good potentialities for plantation forestry. The success of plantation forestry in the regions of Pointe Noire (Kouilou) and Loudima are exemplary for Central Africa. Plantation forests alone could provide enough sawnwood to satisfy the country's needs.

Since its creation, the Office Congolaise des forêts (OCF) has successfully established 4,851 ha in the dense forest. Also, the Unité d'afforestation industrielle du Congo (UAIC) has successfully established 23,559 ha of industrial plantations. Species planted are mostly Eucalyptus and pines for pulp and fuel wood. UAIC now produces and exports about 170,000 tonnes of pulp billets and about 50,000 electricity and telephone poles per year.

### C. Forest and wood-development institutions

The institutions supposed to be involved in forests and wood development can be distinguished according to the aspects on which they are focusing: administration, education and research, and finances.

#### Administration

The Ministry of Forestry has a Department of Forest Exploitation and Forest Industries which prepares and controls the issue of exploitation licences and contracts. This Department also enforces the implementation of the forestry law which prescribes that taxes be paid by forest exploitation companies and that 60 per cent of all log production be converted within the country. The Office Congolais des bois (OCB), created in 1975, is responsible for and has monopoly for the commercialization of logs. OCB is based at Pointe Noire and also operates an office at Brussels. Due to several difficulties affecting its functioning, it is important that it be reorganized.

The Office Congolais des forêts (OCF), created in 1974 and based at Pointe Noire, is a State corporation, charged with the afforestation in the savannah and regeneration in the dense forest.

The Unité d'afforestation industrielle du Congo (UAIC), created in 1986 and also based at Pointe Noire, is a public corporation responsible for the creation and exploitation of industrial plantations of Eucalyptus. It exported Eucalyptus billets for pulp manufacture to Italy, Spain and the Scandinavian countries, realizing a turnover of CFAF 3,123,000,000 in 1987.

The National Agency for Craftwork (ANA), operating under the Ministry of Industries and Crafts, follows up and promotes the activities of craftsmen, including small road-side carpenters and wood-joinery workshops.

The Agency for the Development of Small- and Medium-size Enterprises (ADPME), under the Ministry of Trade, Small- and Medium-size Enterprises, promotes enterprises that employ between 20 and 90 workers. These enterprises also include semi-industrial wood-working industries.

#### Education and research

The Ministry of Secondary and Higher Education with its Department of secondary, technical and professional training, is responsible for the training of foresters and wood technicians. The University Institute of Rural

Development (IDR) trains the "ingenieurs des techniques forestier", while the School of Forestry at Mossendjo trains higher technical officers in forestry. It is important to mention here that both institutions produce foresters and not people qualified or specialized to work in wood industries.

The Forestry School at Mossendjo inherited the sawmill and wood-working equipment of the UNDP/FAO project that created a professional centre for training in forest exploitation and wood industries. An investigative mission to the School in July 1989 reported that the equipment was still in fairly good condition except for a few spare parts, but that the machines were not used to full advantage, because the staffing at the School was poor. The Government is now considering to rent the sawmill and joinery workshop to a private Congolese forest exploiter who would put them into production and continue to accept students for practical work.

CTFT, that performs forestry research under the supervision of the General Directorate of Scientific Research, has concentrated most of its work on forest genetics and silviculture, with the result that no effective research work is carried out on wood technology.

### Financing

The Agency for the Development of Small- and Medium-size Enterprises (ADPME) works hand-in-hand with the Guaranty and Support Fund (FGS) who guarantees 50 per cent of any loan accorded to a PME by a commercial bank.

Following the poor performance of the wood-industries sector around 1974/75 and the ensuing difficulties of auto-financing, the Government instituted a forestry credit system in 1979, which permitted 11 forestry companies to acquire the following equipment:

- 13 tractors D7
- 5 tractors D6
- 3 graders
- 9 debardeur 518
- 7 debardeur 528
- 1 loader 980
- 23 timber trailers for 30 tonnes

The credit fund amounted to CFAF 2,324,173,000, made up of CFAF 1,792,239,000 from foreign banks and CFAF 531,934,000 from local funds. At the end of 1983, the companies reimbursed CFAF 1,393,542,000, but have been unable to pay the remaining CFAF 930,631,000 which the Government is obliged to pay back, since the equipment cannot be recuperated. The first credit system failed because there was no follow-up of the performance of enterprises, neither of their technical nor financial management. A second credit system was put into place, but this time measures have been taken to avoid a repetition of the mistakes of the first system.

### D. Industrial infrastructure

Forest resource exploitation in the Congo was started and concentrated only in the southern part of the country because the infrastructure for extraction was developed only in that region. This included a number of roads, the railway which connects Brazzaville and Pointe Noire, Loubomo and Mbinda, and the sea port at Pointe Noire. In the north, the road network is very limited and not suitable for timber transport. Only the river Sangha

serves for the transport of timber from that area as well as from the south-east of Cameroon and the Central African Republic.

Locally produced electrical energy is supplemented by energy imports from Zaire.

### E. Wood industries

The equipment installed for wood processing in the Congo is of quite important size compared to neighbouring countries, but is not being used to full capacity.

#### Primary wood-processing industries

These include units that are specialized in transforming logs into semi-finished products such as sawnwood, veneers and plywood, but may also include the treatment and conditioning of poles for electricity and telephone lines. The 24 sawmills that operated in the country in 1986, with a total production of 76,704 m<sup>3</sup> of sawnwood, are shown in table 17.

Table 17. Production of sawmills, 1986

Category	Number	Production (m <sup>3</sup> )	Percentage
State	2	1 416	2
Joint ventures	2	5 659	7
Private expatriates	10	63 022	82
Private nationals	10	6 607	9
Total	24	76 704	100

Table 17 shows that the sawmills belonging to nationals (41 per cent of the total number), produce only 9 per cent of the total sawnwood, whereas those belonging to expatriates (mostly Europeans) which constitute also 41 per cent, produce 82 per cent of the total sawnwood.

Table 18 gives an overview of the production, exports and local sales of sawnwood for the period 1983-1987.

Table 18. Production, exports and local sales of sawnwood, 1983-1987 (m<sup>3</sup>)

Year	Production	Exports	Local sales	Exports as percentage of total production
1983	65 864	25 464	32 130	38.7
1984	60 016	27 608	29 189	46.0
1985	50 437	20 532	24 426	40.7
1986	76 704	22 603	29 059	29.5
1987	60 230	31 659	23 152	35.9

Source: Forestry Department.

Most of the sawmills convert only logs of poor quality since the best logs are selected for export. Their equipment too is fairly obsolete and provides an average conversion rate of 38 to 40 per cent. None of the sawmills have a drying kiln and they all provide wet timber or at most air-dried timber. With neglected and ill-equipped saw-doctoring workshops, the equipment is also poorly maintained.

The production of peeled veneers by four companies is shown in table 19.

Table 19. Production of peeled veneers, 1986 and 1987

Company	Category	Production 1986 (m <sup>3</sup> )	Production 1987 (m <sup>3</sup> )
SONATRAP	State	4 377	970
PLACONGO	Joint venture	18 096	22 986
SIDETRA	Joint venture	12 405	7 937
SOCOBOIS	Private	<u>16 716</u>	<u>14 660</u>
Total		51 594	46 553

These four companies, all situated at Point Noire, have a total installed capacity of 125,000 m<sup>3</sup>. Their total maximum production was obtained in 1973 at 96,190 m<sup>3</sup>. Only SOCOBOIS produces sliced veneers which amounted to 2,371 m<sup>3</sup> in 1985, 1,836 m<sup>3</sup> in 1986 and 2,330 m<sup>3</sup> in 1987. All of it is exported.

SIDETRA is the only company producing plywood. In 1986 its production was 6,673 m<sup>3</sup> and in 1987, 4,482 m<sup>3</sup>.

These primary conversion plants are generally profitable if situated near to the forest concession, because transportation costs are an important element of production costs. The Congolese Wood Impregnation Company (CBI), located at Loudima, impregnates Eucalyptus poles for telephone and electricity lines. At Loudima there is also a small sawmill for Eucalyptus trees.

#### Secondary wood-processing industries

These include plants specialized in the transformation of semi-finished products into finished products such as furniture, doors, windows, pre-fabricated wooden houses, tool handles, wooden bridges, parquetry and pallets.

Three semi-industrial units of that nature exist in the country, all belonging to private Congolese businessmen: Société Africaine pour le commerce et l'industrie (SACOMI), Meubles Ngoma at Brazzaville and Menuiserie industrielle du Kouilou (MIK) at Pointe Noire. In addition, there are hundreds of furniture workshops which operate like artisans or craftsmen. The most important ones are described in the following:

(a) SACOMI. Created in 1979, this plant has 26 machines and used to employ 145 workers. Due to a reduction in activities following the economic crises, the number of employees has been reduced to 60. SACOMI works only to order and has an annual turnover of CFAF 1.5 billion. They seriously lack designers and a system for sawdust removal, but have a drying kiln;



(b) Meubles Ngoma. That company is owned by a Congolese who started as a road-side carpenter in 1956. He recently acquired three machines, a vertical band saw, an SCM planer and another SCM 2 200 three-operations machine. The finishing of his products is good even though it is done manually. He has two exposition halls at Brazzaville and his monthly turnover is about CFAF 7 million. Mr. Ngoma works with about 50 apprentices whom he trains free of charge for five years;

(c) MIK. That company is located at Pointe Noire and belongs also to a private Congolese;

(d) Socome. A State-owned plant which has closed down. Before closing down, the turnover for 1985 was CFAF 154 million and for 1986, CFAF 84 million. These semi-industrial plants seriously fear competition from the hundreds of road-side carpenters who produce about the same products at much lower costs. They do not recruit trained workers but prefer to work with people who are trained on-the-job and receive lower salaries;

(e) Mossendjo Centre de formation professionnelle et de demonstration. Established in 1970 by an FAO/UNDP project, it consisted of a sawmill and a secondary wood-processing unit. The equipment was later handed over to the National School of Forestry that trains senior forestry technicians. Due to the low level of utilization by the school and lack of funds for a better maintenance of the equipment, the Government is studying the possibility of renting the equipment to a private timber company. The contract to be signed with the businessman shall safeguard the continuous use of the equipment for teaching and demonstration of practical work. The equipment is still in a good state of use. The major question now is how this new arrangement could be used to benefit the wood industries sector in the same way as the Nkolbisson Centre at Yaoundé is expected to do;

(f) Woodworkers' Co-operatives in the Pool region (COOGAP). Within the framework of the UNDP/ILO project No. PRC/83/003 on rural development of the Pool region, a United Nations volunteer in woodcrafts helped to organize five woodworkers' co-operatives in the Pool and Plateaux regions between 1984 and 1986. Details on those co-operatives are given in table 20.

Table 20. Woodworkers' co-operatives in the Pool region

Village	Members	Apprentices	Machines	Workshops	Turnover/year (Million (CFAF))
Madzia I	4	2	1	1	7
Madzia II	4	3	1	1	7
Mindouli	4	2	-	-	3
Kindamba	8	4	1	1	3
Vindza	8	-	1	1	3
<b>Total</b>	<b>28</b>	<b>11</b>	<b>4</b>	<b>4</b>	<b>23</b>

Source: UNDP/ILO project report.

In each village the project supplied a seven-operations wood working machine, members built the workshop and supplied the raw materials (sawwood) and produced furniture, drawers, tool handles etc.

During the consultant's visit, the problem of marketing was raised and it appears that after the United Nations volunteer left, there was no more follow-up.

#### F. Marketing and trade

The Congolese market for products of the wood industry is very limited in spite of the high purchasing power of the people. Neighbouring countries are also timber producers and therefore competitors.

#### Office Congolais des bois (OCB)

This State corporation, based at Pointe Noire, is responsible and has the monopoly for the buying, selling and exporting of wood. The idea is good, but OCB is experiencing some problems and requires restructuring to enable it to fulfil its role.

#### Exports, local sales and imports

Table 21 shows details on the exports and local sales of different timber products for the period 1983-1987.

Table 21. Production, exports and local sales of different timber products, 1983-1987 (m<sup>3</sup>)

Product	1983	1984	1985	1986	1987
<b>Logs</b>					
Production	513 545	586 736	571 868	714 881	690 595
Exports	191 944	250 283	275 172	286 973	326 903
Local sales	-	1 384	1 354	1 443	6 891
Exports as percentage of total production	37.4	42.7	48.1	40.1	47.1
<b>Veneer</b>					
Production	58 369	63 202	59 081	51 594	46 553
Exports	51 962	56 634	49 563	45 496	42 741
Local sales	5 545	-	7 218	1 875	414
Exports as percentage of total production	89.0	89.6	85.3	88.2	91.8
<b>Plywood</b>					
Production	4 864	5 623	6 697	6 673	4 838
Exports	65	54	27	27	27
Local sales	4 793	5 749	6 670	6 725	4 883
Exports as percentage of total production	1.3	0.9	0.4	0.4	0.6

Source: Forestry Department.

Table 21 indicates that about 45 per cent of the logs produced are exported. There appears to be some discrepancy in local sales; it should be noted, however, that most exploiting companies transform part of their logs in their own plants.

Peeled veneer, if not used locally for plywood manufacture, is almost entirely exported. The wood species that dominate the export figures are Sapelli, Sipo and Niove. The island of Reunion is the largest buyer of Congolese sawnwood, followed by France and Spain.

Table 22. Imports of wood and wood products, 1983-1988

Year	Weight (kg)	Value (CFAF)
1983	907 237	538 423 000
1984	6 478 034	709 219 000
1985	429 360	1 007 785 000
1986	175 288	288 635 230
1987	318 745	276 734 873
1988	210 252	159 276 000

Source: National Statistics.

Table 23. Imports of furniture and other beddings, 1983-1988

Year	Weight (kg)	Value (CFAF)
1983	859 496	2 140 403 000
1984	881 869	1 774 010 080
1985	744 199	2 160 673 000
1986	548 452	1 568 840 300
1987	596 610	1 326 659 678
1988	921 569	1 794 303 391

As can be seen from tables 22 and 23, there is a demand for wooden furniture and other wooden products, but that demand is met by imports.

In 1985, OCB sold logs for CFAF 12,807 million, and in 1986 for CFAF 13,658 million.

All products of the secondary wood-processing plants in the Congo are sold within the country. No information could be obtained on the volume of that production and sales.

### G. Conclusions and recommendations

Unlike in some other countries of the subregion, the secondary wood-processing industries are already given some attention in the Congo.

The rate of transformation of wood within the country is still below the expected level, and due to several handicaps, including problems of transportation, the cost of sawnwood in the country is high. The demand for sawnwood remains unsaturated and is currently being supplemented by sawnwood from the Central African Republic.

Wood industries belonging to nationals contribute less to national production because individuals lack experience, are not well trained and often do not have access to financing.

Fast-growing forest plantations have proven to be a tremendous success in the country and ought to be converted into sawnwood and other products since the pulp project is not starting soon.

Sawnwood sold within the country is of poor quality and not suited to the needs of the users, since it is neither conditioned nor standardized. It is, therefore, recommended that this be done and that the SATA timber-grading rules be implemented within the country.

Primary processing plants should be sited next to the concession so as to render exploitation more profitable when more species, including lesser-known species, will be exploited and converted.

The second forestry credit system ought to be reviewed in order to avoid the failures of the first credit system.

To further develop the wood-processing industry, it is necessary to rehabilitate the existing industries and to integrate them further by diversifying their production.

It is also recommended that small industries be installed near big ones so that more use can be made of wood rejects and off-cuts, thus enhancing a more complete use of the resource.

**Appendix**

**PERSONS MET IN THE CONGO**

**Ministère de l'économie forestier**

Mr. Kanve Jacques, Secretary-General of the Ministry  
Mr. Koumou Albert, Director of Forest Exploitation and Industries  
Mr. Otouba Faustin, Director of Studies and Planification  
Mr. Jules Mahoungou, Ingenieur des eaux et forêts

**Ministère du plan**

Mr. Emmanuel Massene, Director General of Statistics

**Ministère des industries**

Mr. Madzengue Younous, Secretary-General  
Mr. Gandou-Kende, Chief of Service Industrial Co-operation

**Agence nationale de l'artisanat (ANA)**

Mr. Passi Pierre, Director-General

**Agence nationale de developpement des PME (ADPME)**

Mr. Makosso Eric Lambert, Director-General

**SACOMI**

Mr. Homet, Technical Director

**Meuble Ngoma**

Mr. Ngoma, Proprietor and Director

#### IV. EQUATORIAL GUINEA

##### A. General information

Equatorial Guinea consists of a continental region and two islands. The total area is 30,500 km<sup>2</sup>, comprising of:

	Km <sup>2</sup>
Continental region	26,000
Bioko Island	2,000
Annobon Island	2,500

Equatorial Guinea has about 350,000 inhabitants. Rainfall ranges from 4,000-10,000 mm annually. The per-capita income is about \$US 530 and the capital is Malabo on the Bioko Island. The official language is Spanish.

Equatorial Guinea joined UDEAC in 1983 and is also a member of ATO.

##### B. Forest resources

The exploitable dense forest, situated mostly on the continental region, covers about 1,180,000 ha and is made up of:

	Ha
Productive forests	780,000
Exploited forests	220,000
Inaccessible forests	180,000

The dense forest is dominated by Okoume species, except north of the road from Bata to Niefang where other species like Azobe, Obeche, Ilomba, Tali, Frake, Acajou, Ovengkol and Movingui are found.

Surveys indicate that in the productive zone one can expect about 25 m<sup>3</sup>/ha, and in the exploited area only some 10 m<sup>3</sup>.

Forest exploitation was restarted around 1985, and there are 13 forest-exploitation companies operating over an area of about 640,000 ha. Concessions are given out for renewable periods of 5 years. In 1981, their log production was 90,000 m<sup>3</sup>, and in 1985 it was 119,168 m<sup>3</sup>.

FAO estimates the forest degradation in Equatorial Guinea at 2,500 ha/year.

So far no forest plantations exist in the country, but a plantation scheme for 1,000 ha of Okoume per year is planned.

##### C. Forest and wood-development institutions

The Department of Forestry, under the Ministry of Waters, Forests and Forestry Production, is responsible for the implementation of the national forest policy. The Regional Delegation at Bata is responsible for all forestry operations in the continental region.

There is no forestry or wood-workers training school in the country. All staff are trained abroad, partly in neighbouring countries.

In the Ministry of Commerce and Industry, the Department of Commerce and Industries follows up on the activities of the small- and medium-scale enterprises, including those that operate wood industries.

#### D. Industrial infrastructure

There is a reasonable network of earth roads on the continental mainland, but the Government prohibits timber trucks to use these roads for fear of deterioration. The forestry companies are thus obliged to create separate forest roads.

A seaport exists at Bata. Telephone communication with other countries is difficult.

#### E. Wood industries

##### Primary wood-processing industries

Among the 10 to 13 forest exploitation companies, seven operate sawmills, two of which also produce veneers. With regard to forestry taxation, a single taxation system was adopted in 1985. While exporters pay 30 per cent of the merchantable value for export logs, the charge for sawnwood and veneers is 25 per cent of the merchantable value. This corresponds roughly to CFAF 7,708 per m<sup>3</sup> of logs and to CFAF 6,346 per m<sup>3</sup> of sawnwood and veneers. Only about 33 per cent of the logs produced are converted locally and the conversion factor of the sawmills is about 45 per cent. Table 24 shows the annual production of logs, sawnwood and veneers for the period 1985-1987.

Table 24. Production of logs, sawnwood and veneers, 1985-1987  
(m<sup>3</sup>)

Product	1985	1986	1987
Logs	119 168	160 000	209 589
Sawnwood	4 750	9 194	9 469
Veneers	53	10 943	9 326

Source: General Statistics, Ministry of Planification.

The mill equipment is obsolete and very poorly maintained as not enough emphasis is placed on the saw-doctoring workshop.

##### Secondary wood-processing industries

Industries in that branch convert mostly sawnwood into building components, furniture, doors, windows etc. Within Malabo, some semi-industrial secondary processing plants are established. Most of them are owned by foreign building and public works construction companies and only one that specializes in furniture (COINPEX) is owned by a Guinean.

COINPEX has an old workshop with seven wood-working machines, some of which are 35 years old, like the two head rigs (vertical band saw). COINPEX employs about 32 workers at a minimum salary of CFAF 18,000 per month. Products manufactured at that plant include household and office furniture, doors, windows, school benches etc. Finishing is very poor as all sanding and varnishing is done by hand. Sawdust piles up around the machines until some outsiders come and collect it for their private use or for the incinerator. Production is based on orders and designs are just an imitation of existing models from some European catalogues. Workers are all trained on-the-job.

F. Marketing

Most of the logs, sawnwood and veneers are exported, while all products from the secondary processing industries are sold on the local market. Tables 25 and 26 give an overview of the country's exports of timber and timber products.

Table 25. Timber exports, 1985-1987

Products	1985		1986		1987	
	m <sup>3</sup>	Value (million CFAF)	m <sup>3</sup>	Value (million CFAF)	m <sup>3</sup>	Value (million CFAF)
Logs	75 985	1 888.0	30 041	3 230.1	129 778	3 561.0
Sawnwood	3 784	183.0	4 638	299.3	12 351	594.0
Veneers	4 254	85.0	3 353	242.3	11 431	584.0

Table 26. Production and export of logs, sawnwood and veneer, by company, 1985 (m<sup>3</sup>)

Company	Log production	Exports		
		Logs	Sawnwood	Veneer
LIMTEC	21 453	18 511	-	-
BIMBILES	19 979	17 750	2 091	-
EXFOSA	19 604	13 257	-	-
MAGUISA	15 509	10 468	-	-
MATRANSA	12 012	2 302	-	4 050
ANOSOK	7 164	2 143	402	-
MAFESA	6 828	2 499	-	-
ALOSA	5 652	3 266	595	-
ASTIMEX	4 520	2 074	-	-
SOPOGE	4 520	2 398	-	-
SEMGE	1 543	-	-	-
Total	118 784	74 668	3 088	4 050

Source: Forestry Department.

The marketing of timber in Equatorial Guinea is free and liberal. The export of sawnwood is exempted from taxes as an incentive for industrialization. No tax incentives are given for the import of equipment.

Fuel costs are about the same as in Cameroon, i.e. CFAF 280 per litre of petrol.



**G. Conclusions and recommendations**

Considering the small size of the country, forest resources could soon be exhausted and it is necessary to undertake forest plantations to secure the future of the industries.

The training of personnel in sawmilling, saw-doctoring etc., especially in neighbouring countries where such training facilities exist, should be intensified.

In order not just to "cream" the forest, a programme of promoting the use of lesser-known species should be undertaken.

In view of the number of timber companies already operating in that relatively small country, emphasis should be placed on renovating these industries and on pushing for their further integration to include both primary and secondary processing plants.

**Appendix**

**PERSONS MET IN EQUATORIAL GUINEA**

**Ministry of Forestry**

Mr. Angel Alogo Nchama, Minister  
Mr. Nvono Akele Casto, Secretary General  
Mr. Francisco Ndong Ovono, Director-General, Forestry  
Mr. Pedro Bayeme Ayingono, Director-General, Fisheries

**Ministry of Trade and Industry**

Mr. Angel Doligan Malabo, Director-General, Commerce  
Mr. Kinson Botey, Engineer, Industry

**Ministry of Planification**

Mr. Carlos Carre, Statistics Project

## V. GABON

### A. General information

The territory of Gabon is cut across, from west to east, at about one third of its upper area, by the equator. It is, therefore, situated right at the heart of the tropical forest area of Africa, bounded to the north by Equatorial Guinea and Cameroon, to the north-east, east and south-east by the Congo, and to the south-west and west by the Atlantic Ocean.

It covers a surface area of about 267,670 km<sup>2</sup>. The population is estimated at 1.2 million, with an annual growth rate of about 1.1 per cent. The population density is therefore about 4.5/km<sup>2</sup>.

The per-capita income is the highest within the UDEAC subregion: about \$US 3,340, which has now dropped to \$US 2,475.

Gabon hosts the headquarters of the African Timber Organization (ATO) and is also a member of ITTO.

### B. Forest resources

Situated at the centre of the African tropical dense forest, Gabon's dense forest covers about 22 million ha, representing about 82 per cent of the total surface area of the nation. About 3 million ha of forest savannah areas are found around the plateau regions of the extreme east and the south.

Most of the Gabonese forest is dominated by a single species, Okoume, which is well known all over the world for its good qualities for peeled veneers. That tree is found mainly in Gabon and only few of it in the Congo. The area covered by that species extends from the Atlantic Ocean right across to a line that goes from the north-west around Oyem to the south-east at Okondja. Apart from Okoume and another dominating species, Ozigo (*Dacryodes buettneri*), the Gabonese forest disposes of other species typical of the equatorial forest such as:

Decorative timber (D): Mahogany, walnut  
Light-utility timber (LU): Ozigo, Illomba and Limba  
Heavy-utility timber (HU): Douka, Kavazingo, Moabi  
Heavy-construction timber (C): Azobe, Tali

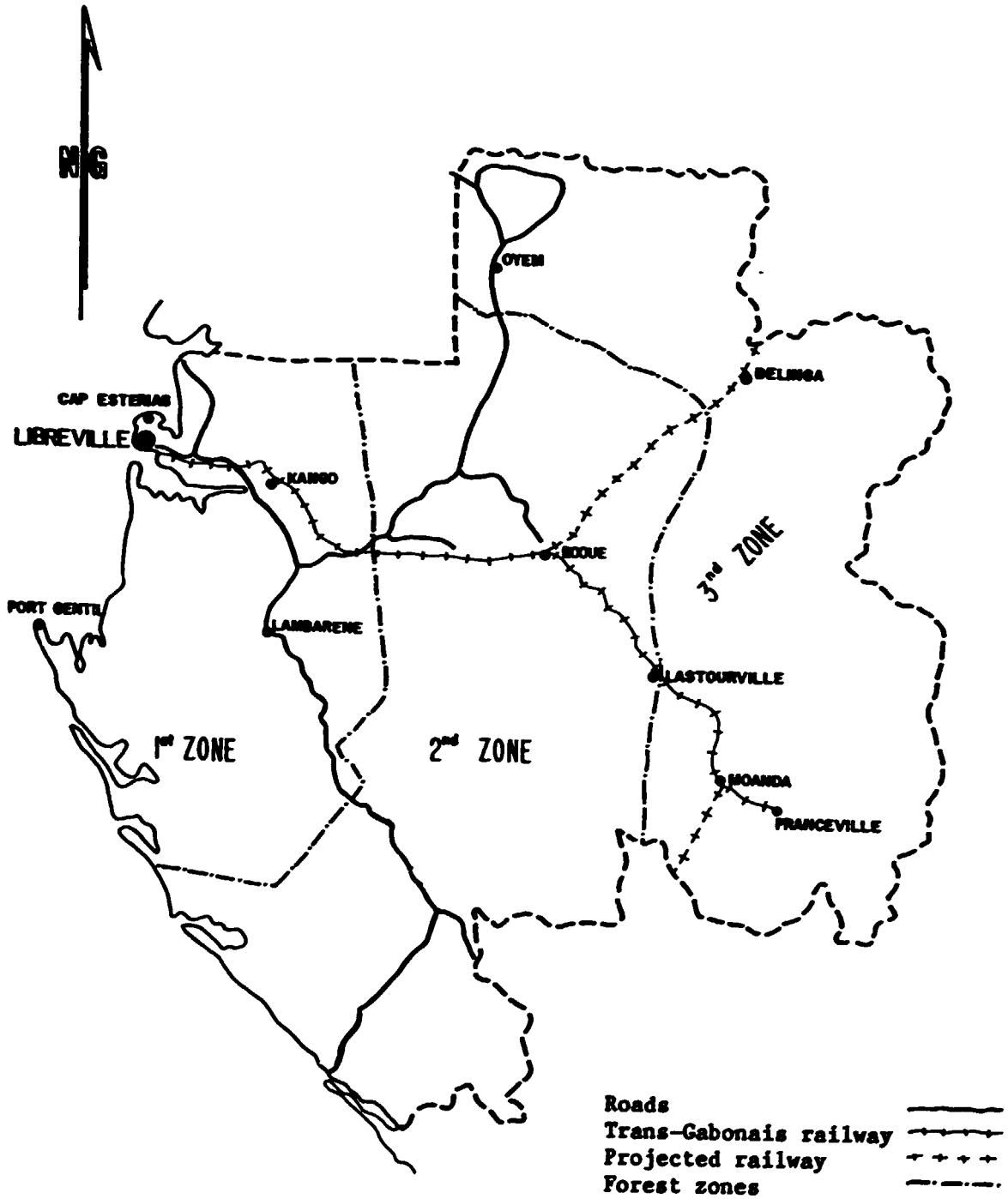
No extensive (nationwide or national) forest inventories have been undertaken, but a few limited pre-investment inventories permitted the estimation of a potential volume of Okoume at 90 million m<sup>3</sup>, and that of Ozigo at 27 million m<sup>3</sup>.

Due to lack of adequate extraction infrastructure (road and rail), forest exploitation started in and was limited to the western coastal region where navigable river transportation was possible: the delta region of the estuary rivers Ogoue and Ngounie. This led to the distinction of the following three forest exploitation zones (see also figure II):

1st zone: Covering the western coastal region of about 5 million ha, with easily accessible water transport, reserved for nationals.

2nd zone: Covering the upper valleys of the rivers where cataracts interrupt navigation and production costs are increased by long road transport before reaching the navigable parts of the rivers.

Figure II. Map of Gabon



**3rd zone:** Inaccessible and therefore less exploited. Most of it is outside the Okoume zone. Exploitation started only when the trans-Gabon railway reached Franceville.

Forest exploitation in the country is operated by both national and expatriate companies:

(a) Nationals or companies owned by nationals are given permits over limited areas (5,000 ha) within the first zone. They account for about 25 per cent of the national production;

(b) Expatriates or companies owned by expatriates operate larger concessions and conversion plants;

(c) Twenty-four industrial licences for an area of 2,245,486 ha were given out to those who possess, or intend to invest in, local industrial plants for the conversion of timber.

The production of logs in Gabon is largely dominated (about 78 per cent) by Okoume and Ozigo as shown in table 27.

Table 27. Production of logs, by species  
(Thousand m<sup>3</sup>)

Species	1968	1970	1980	1985	1988
Okoume	1 370	1 500	1 030	1 032	1 000
Ozigo	50	68	63		60
Others	<u>210</u>	<u>265</u>	<u>240</u>	<u>348</u>	<u>276</u>
Total	1 630	1 833	1 433	1 380	1 336

Deforestation and forest degradation, which constitutes a major problem in the tropical regions of the world, is not yet a problem in Gabon because of its low population density. Forest degradation so far is estimated at 15,000 ha per year.

Forest management activities are carried out in exploited forest reserves in which natural regeneration efforts are encouraged. About 30,000 ha of planted Okoume exist to date and are expected to produce about 100 trees/ha of 75 cm mean diameter at age 50. Part of these plantations was financed by the European Development Fund (EDF). Other fast-growing species such as Eucalyptus, pines and Gmelina were also planted for pulp production.

Agro-forestry efforts are also being undertaken, and a regional project for the conservation of the tropical forest by the creation and management of conservation and protected areas is under study by the IUCN and the World Bank.

The new investment triannual programme 1988-1990 budgets for that period CFAF 1,772,000,000 for afforestation and regeneration, i.e. about 63 per cent out of the total forestry, wildlife and fisheries budget of CFAF 2,798,000,000.

**C. Forestry and wood-development institutions**

The forestry administration responsible for forests and wood industries falls under the services of the first Vice Prime Minister. The services that are co-ordinated by the Director General of forests consists of:

- (a) Department of Forest Industries;
- (b) Department of Forest Administration;
- (c) Department of Forest Regeneration;
- (d) Department of Wildlife and National Parks;
- (e) Department of Forest Inventories and Management.

There is also one parastatal organization, the Societ  Nationale des bois du Gabon (SNBG), responsible for the commercialization of Gabonese timber, both locally and abroad. SNBG has a monopoly for the marketing of Okoume and Ozigo. Of its shares, 51 per cent are held by the Government and 49 per cent by a group of forest exploiters. Due to certain problems involving the timber sector, SNBG is to be restructured and rehabilitated.

The 1982 forest orientation law prescribes two measures to encourage the local transformation of timber:

- (a) Concession areas of more than 15,000 ha can only be attributed to companies that possess industrial plants;
- (b) At least 75 per cent of all logs exploited from industrial concessions must be converted by local industries.

But up to 1988 that law has not yielded much effect because it was supposed to be applied only to new concessions, and to old ones when they are renewed. That is why the rate of local transformation has not yet gone beyond 35 per cent.

As far as wood industries are concerned, the Department of Forest Industries has been involved only with forest exploitation and the primary wood industries.

Even though the National Centre for Scientific and Technical Research (CENAREST) was created in 1976, with its IRAF in charge of forestry and agronomic research, no research in wood technology is being undertaken or is likely to be carried out in the near future. This is due to the fact that only silvicultural research was inherited from Centre Technique Forestier Tropical and also because of a lack of funds.

With regard to training, there is only one forestry school in Gabon, at Cap Esterias, that trains all levels of forestry personnel from forest technicians to forest technical officers (ingenieur des techniques forestiers) in general forestry. No specialized institutes for the training of woodworkers exist. There is, however, the Centre de formation professionnelle in the Ministry of Labour that organizes short-term courses on various aspects of the industry. There is, therefore, a need for a specialized centre for the training of woodworkers, machine operators and maintenance technicians.

As a factor of production, human resources are seriously in short supply in Gabon due to its small population. The result is that the cost of labour is very high. The lowest guaranteed salary is about CFAF 60,000, compared to the Central African Republic where it is some CFAF 30,000 and CFAF 45,000 in Cameroon. The forestry sector engages more than 20,000 workers and therefore contributes substantially to solving the problem of unemployment. It comes second after the commercial sector. Forest industries employ 12 per cent of the forestry labour while forest exploitation employs 83 per cent.

With regard to the financing of industrial projects, Gabon has several commercial banks, i.e. many more than other countries of the subregion, and there is also the Gabonese Development Bank (BGD). Since 1986, the banking sector is experiencing a continuous scarcity of liquidity, due to the increase of loans to the private sector and a reduction in the amount of savings. Because of the general economic depression that has particularly affected the wood sector, construction and public works, the activities of financing institutions have greatly diminished.

Gabon, like many other African countries, possesses an Investment Code which was harmonized with those of other member countries of UDEAC. This code offers certain advantages and privileges for the creation of industrial units, especially for those that transform raw materials into semi-finished or finished products. These advantages range from reduction of custom duties or taxes up to complete exoneration. The level of advantage depends on which of the four "régimes" is accorded to the company in question.

Within the Ministry of Small and Medium-size Enterprises, PROMOGABON is the national agency responsible for assisting and promoting small- and medium-scale enterprises (SMEs), sometimes in collaboration with the Aid and Guarantee Fund (FOGAPE). The assistance given to SMEs can take various forms, including:

- (a) Technical and management assistance for negotiating joint ventures, applying for loans, setting up the enterprise, diagnostic analysis etc.;
- (b) Choice and acquisition of equipment as well as its installation and maintenance;
- (c) Group training through seminars.

PROMOGABON is the only official organ that attempted to carry out a census of SMEs in all fields, including secondary wood-processing industries, but this is not useful as the census included every enterprise with an annual turnover of from zero to CFAF 500,000,000.

#### D. Industrial infrastructure

Conscious of the problems in extracting forest products from remote areas, the Gabonese Government has adopted a dynamic policy of developing road, rail and water transportation infrastructures. This policy has been intensified by the construction of the trans-Gabonese railway which will particularly facilitate the development and exploitation of forest resources of the second and third zones.

The situation of Gabonese roads in 1986 is detailed in table 28.

Table 28. Roads in Gabon

Type of road	Km
Asphalted	599
Modern laterite	953
Ordinary earth	4 877
Farm-to-market	961
Sand-pitted	<u>145</u>
Total	7 535

Source: Ministry of Public Works and Construction.

The number of wagons reserved for timber transport by rail has continued to increase from 200 out of 452 in 1981, to 2,710 out of a total of 5,368 in 1986, i.e. to more than 50 per cent of the available wagons.

Gabon has three major services that ensure maritime and internal water transportation:

(a) SONATRAM, the National Maritime Transport Company, which ensures sea transport, mostly to Europe;

(b) The Internal Navigation Company (CNI) that takes care of water transportation within the country. It has seven boats;

(c) The Gabon Ferry Service (GFS), which runs a ferry service for about 290 persons between Libreville and Port-Gentil.

There are two deep-sea ports at Owendo and Port-Gentil and a fishing port at Libreville.

The development of all these transportation facilities will not only facilitate the evacuation of timber products and promote the creation of new industries in rural areas, but will also help to reduce production costs of timber products and increase the number of species extracted to include non-floatable species.

This affirmation is illustrated by the fact that in spite of the economic recession that led to a reduction of the investment budget since 1985 to almost a quarter, the annual investment programme has continued to give second priority to infrastructural development. It is, however, a logical consequence of the top priority position given to areas of production.

Of the investment budget for the next three years (1988-1990), the highest percentage (30.5 per cent) is allocated to infrastructure, with a gradual reduction of the military budget.

#### E. Wood industries

Wood industries in Gabon, and in fact in all member countries of UDEAC, ought to be given pride of place because of their importance within the



industrial development strategy, as a sector that transforms not only a natural resource, but a resource that is renewable. But the bitter truth is that since the economic crises the whole forestry sector has continued to show declining results.

Primary processing industries

The fifth economic and social development plan for 1984-1988 emphasized the objective of developing wood-processing industries, but in spite of the measures taken to promote local transformation it has remained low, and even tends to decline (see tables 29 and 30).

Table 29. Sawnwood production by company, 1987 and 1988  
(m<sup>3</sup>)

Company	1987	1988
CEB	8 530	3 189
CFSG	1 990	488
LIBECO	7 125	3 246
ROG	2 534	3 351
SEB	11 494	5 167
SPM	4 987	3 263
SIBAG	407	331
SIO	6 447	599
SIL	8 735	2 847
SOGASCIC	4 572	1 596
SPINDLER	4 510	1 969
UFMO	23 646	13 884
Total	84 977	39 930

These statistics which were obtained from the Forestry Department do not appear reliable as there is no systematic collection of data.

Table 30. Production of veneers and plywood, by company, 1987 and 1988  
(m<sup>3</sup>)

Company	1987		1988	
	Veneers	Plywood	Veneers	Plywood
CFG	70 045	61 679	68 110	57 739
ROG	5 096	3 351	n.a.	10 241
SHM	6 788	6 748	n.a.	n.a.
Total	81 929	71 778		

With an annual log production of 1.3 million m<sup>3</sup> from which 12 sawmills can produce only 40,000 m<sup>3</sup> of sawnwood, and with three veneer and plywood mills producing only about 65,000 m<sup>3</sup> of plywood, it is obvious that efforts have to be increased in order to let Gabon fully benefit from its timber resources.

Among the primary processing industries, the Compagnie forestière du Gabon (CFG) is the largest. It is situated at Port-Gentil, has about 410,432 ha of forest concessions and produced some 77,000 m<sup>3</sup> of plywood; that production has dropped to about 58,000 m<sup>3</sup> in 1988. Its equipment is becoming obsolete and requires renovations. CFG produces 86 per cent of Gabon's plywood, 90 per cent of which is exported. In preparation for a restructuring and renovation of the mill, discussions are taking place with the French group Pinault that intends to take up new shares while the Government will reduce its shares from 51 per cent to about 24 per cent. Another company that also contributes to this sector is the Société de la Haute-Mondah (SHM) which, in addition to veneer and plywood, also produces flush doors.

A draft decree to regulate the establishment of primary processing industries is being examined for signature. The aim is to effectively control these units and to obtain statistics which are so far virtually non-existent.

For various reasons, the milling capacities of the processing industries are not being used to the full, as can be seen from table 31. Table 32 details the ownership of those mills.

Table 31. Capacity utilization of mills

	Capacity (m <sup>3</sup> )	Utilization (per cent)
Sawmills	150 000	27
Veneer mills	90 000	91
Plywood mills	115 000	62

Table 32. Ownership of mills  
(Percentage)

	Nationals	Foreigners
Sawmills	65	35
Veneer mills	17	83
Plywood mills	17	83

The corporation Cellulose du Gabon (SOGACEL) was created and granted a 100,000 ha concession around Kango for the purpose of producing paper pulp from a mixture of tropical species. The plant was never constructed and, under present circumstances, there is no hope that it will be erected.

### Secondary processing industries

The development of secondary wood-processing industries depends to a large extent on the availability of raw materials which are the products of the primary processing industries. If the primary processing industries have problems, as described above (low level of transformation; only sawnwood available, as all veneer and most of the plywood are being exported), then it can be understood why the output of the secondary processing industries is very limited.

Secondary wood processing has been allowed to develop on its own, without any assistance. It has therefore remained in the majority of cases at the level of small road-side carpenters with a one-, two- or three-operation machine. PROMOGABON, in censusing small- and medium-size industries, mentions 200 wood industries at Libreville. But on investigations, the consultant found only four semi-industrial plants which do not even have serial production. Two of these belong to Gabonese nationals and the other two to Europeans:

(a) Etablissements Edouard Mbadou. This is a furniture and joinery industry that belongs to a national. It is situated at the industrial zone of Libreville with more than adequate building infrastructure. It has many offices, big workshops with about twenty machines, two sizeable exposition halls, but a very narrow and ill-equipped saw-doctoring workshop, and a 30 m<sup>3</sup> capacity drying kiln. The number of workers went up in 1985 which is considered the peak-production year, with a turnover of CFAF 3.4 billion. The personnel has now been reduced to about 50, corresponding to the 1988 turnover of CFAF 230 million. This company is the largest and best equipped in Libreville and the consultant believes that its capacity is being under-utilized since they work only on orders from government departments, companies and a few well-placed individuals. Product quality and finishing is quite good and competitive for the local market, considering the prices of imported products. It is assumed that a good deal of furniture and other products that are being imported could have been manufactured from local wood if the local industry were developed. Unfortunately, it was not possible to support these assumptions by statistics;

The 30-m<sup>3</sup> drying kiln is unused for several weeks because of the limited requirements of the industry. If it were organized, other industries could take advantage of it and pay something to the proprietor;

(b) Les Galeries Modernes. Also a semi-industrial plant for furniture and joinery, owned by a Gabonese national. It employs about 40 people with three Europeans occupying the posts of General Manager, Technical Director and the Commercial Director. Most of their 15 machines were bought from Italy. Without a drying kiln, they work with air-seasoned timber. Their saw-doctoring workshop also looks inadequately equipped and from time to time, they use the services of another industry for maintaining their machines;

(c) SOMATEM (Mobilier du Gabon) and SOMEGA (Société Gabonaise de Menuiserie). These two industries which are owned by French nationals could not be visited because they were closed for vacation. The showroom and sales shop of one of them was visited. It contained more imported than locally made furniture. However, some of their locally manufactured furniture was seen in the new building of the Ministry of Mines and Industry. The quality and finish is very good and compares well with imported furniture.

All secondary processing industries make the same products, i.e. office and household furniture, house-building joinery such as doors, windows,

stairs, flooring etc. There is no specialization and designs differ only in a few details. The company Mbadou produces school desks for the Ministry of Education. While the design of the desks is not as good as the UNIDO design adopted in Cameroon, costs are twice as high, i.e. CFAF 45,000 as compared to CFAF 21,000 in Cameroon. None of these industries has a specialized designer - the workshop manager conceives any new product and the draughtsman draws it out for production.

They also undertake interior decorations and joinery work in house construction, such as designing and putting up ceilings in plywood or wood battens etc. At the time the consultant visited Les Galeries Modernes, they were designing the interior decorations for a night club at Franceville.

The machines found in this class of industries are similar and mostly composed of vertical band saws, planing machines, mortising and tenoning machines, sanding machines, a panel saw and a panel press. Final sanding is done manually and coating and varnishing by use of spraying guns.

As mentioned before, there is a multitude of road-side carpenters and joinery workshops in all the countries visited, who supply the local market with products for the lower income group. They generally have just a bench or table saw and a planer or a three- to four-operation machine and a couple of hand tools. They work generally with untreated and unseasoned wood. They would produce anything for which they are able to obtain an order. A few are able to conceive one or two items but the majority would simply copy any design from existing catalogues.

Finishing is usually a problem due to inadequate or poorly maintained machines and tools and also because of poor manual coating or varnishing.

In all cases quality control does not exist and no standards exist for wood products.

Only two companies timidly tried to integrate their activities for the production of flush doors and construction panels. CFG produced 152 m<sup>3</sup> of such panels in 1987 and 1,086 m<sup>3</sup> in 1988, 207 m<sup>3</sup> of which were exported. SHM produced 2,629 flush doors for the local market in 1987; statistics for 1988 were not available.

#### F. Marketing

The Société nationale des bois du Gabon (SNBG), a public corporation, in which the State has 51 per cent of the share capital and the rest is owned by forestry companies, is responsible for marketing Gabonese timber logs both within and out of the country.

But, up to date, SNBG has concentrated only on the marketing of Okoume and Ozigo in log form.

Table 33. Evolution of Okoume log exports, 1981-1988  
(m<sup>3</sup>)

Destination	1981	1982	1983	1984	1985	1986	1987	1988
Europe	848 503	682 720	827 505	722 982	672 343	645 430	518 284	605 806
North								
Africa	60 042	102 043	67 337	100 809	85 012	82 066	88 776	152 739
America	4 794	1 068	1 480	-	953	971	2 922	5 847
Middle								
East		5 030	1 945	13 900	16 481	17 494	22 058	15 272
Asia	3 165	79 829	96 541	174 142	126 729	112 574	269 515	80 719
Total	916 504	870 692	988 808	1 011 834	901 518	858 535	901 555	859 683

Source: SNBG.

Table 34. Purchase and sales of Okoume and Ozigo logs  
(m<sup>3</sup>)

	Okoume	Ozigo	Total
Purchase	985 252	52 223	1 041 475
Export sales	859 697	37 312	897 010
Local sales	15 965	7 694	23 659

Table 35. Turnover from log exports, 1980-1987

	1980	1981	1982	1983	1984	1985	1986	1987
<b>Exports (1,000 m<sup>3</sup>)</b>								
Okoume and Ozigo	1 059	964	908	1 033	1 052	930	880	900
Other species	208	250	268	300	320	346	347	300
Total	1 267	1 214	1 176	1 333	1 372	1 276	1 227	1 200
<b>FOB price/ 1,000 m<sup>3</sup> (CFAF)</b>								
Total	30 135	28 597	34 135	33 443	37 173	37 900	36 500	36 000
<b>Frs (Mds)</b>								
Total	38.2	34.7	40.1	44.6	51.0	48.4	44.8	43.2

The marketing situation of Gabonese timber shows that 65 per cent of the logs produced are exported and only 35 per cent, mainly poor-quality logs, are

converted locally. This is contrary to the forestry law and further constitutes a handicap to the development of the secondary processing industries. Some 80 per cent of the sawnwood is used locally and some 20 per cent is exported, mostly to neighbouring countries, because the quality is not competitive in the international market. Sixty per cent of all the veneers produced (sliced or peeled) are exported and only 40 per cent used locally for the manufacture of plywood. Concerning plywood, also some 60 per cent are used locally, especially in the building industry, while 40 per cent are exported to neighbouring countries.

#### Quality control and standardization

No laid-down standards for wood products exist in Gabon and consequently there is also no quality control of semi-finished and finished products. SNBG carries out some quality grading of Okoume and Ozigo logs for export only.

At the time that the consultant was in Libreville, a short-term course was going on at the Cap Esterias Forestry School, organized by ATO and financed by UNDP. An FAO expert was in charge. The course was programmed for 27 graders, four from each Francophone ATO member country with a duration of four months, while that for grading inspectors was programmed for six months. It has to be recalled that ATO adopted the harmonized grading rules of the Association technique internationale des bois tropicaux (ATIBT) referred to as "SATA" and requests all its member countries to introduce and enforce their application.

#### G. Conclusions and recommendations

1. Gabon has still a rich reserve of forestry resources, a very high per-capita income from the export of mineral resources, petrol, manganese and uranium, but is not ploughing back enough of these resources to develop the wood industry, which, because it uses a renewable resource, could become a solid base for the economy.
2. The National Forestry Services, responsible for the development of forest and wood resources, have in the past concentrated their efforts only on the primary wood-conversion industries. Even PROMOGABON, responsible for promoting the development of small- and medium-size enterprises, gives priority to commercial enterprises. The forestry law ought to be revised to include the provisions that favour the development of secondary forest industries.
3. There is no institution concentrating on the training in woodworking and no research is being carried out in the domaine of wood technology.
4. Production costs are very high in Gabon compared to other countries of the subregion, and this is mainly due to the high cost of expatriate labour and the high cost of living.
5. The transportation infrastructure (road, river and rail) is well developed in Gabon, much more than elsewhere in the subregion. More effort has to be made, however, to open up the third forest region for exploitation.
6. The main producing and marketing companies, CFG and the SNBG, require immediate restructuring. CFG needs new investments to renovate the plywood mill, and it would also be advisable to pursue further integration by adding a secondary transformation unit. SNBG should be reformed to reduce its overhead charges and extend its activities to other wood species and also to the marketing of semi-finished and finished products.
7. It is necessary to introduce product standardization and product quality control.

**Appendix**

**PERSONS MET IN GABON**

**ISTA**

Mr. Georges Ganongo, Director-General  
Mr. Thiam Samba Laobe, Senior Technical Adviser (UNIDO)

**Ministry of Forestry**

Mr. Ondo Obame Clement, Technical Adviser to 1st Vice Prime Minister  
Mr. Legault Faustin, Director of Forest Regeneration  
Mr. Mervie Jean-Boniface, Assistant Director-General of Forests  
Mr. Mboulou Jean, Director of Forest Industries  
Mr. Anguilley Charles, Director of Administration (SNBG)

**Ministry of Mines, Industries and Consumption**

Mr. Samuel Packo-Mokosso, Director-General of Industries  
Mr. Nicodeme Peme, Assistant Director-General of Industries  
Mr. Yali Yali Joachim, Chief of Industrial Planification  
Mr. Ndjeme Joachim, Director of Industrial Promotion and Planification

**Banque Gabonaise de Developpement (BGD)**

Mr. Jean-Felix Mamalepot, Director-General

**PROMOGABON**

Mr. Jean-Fidele Otando, Director-General

**Etablissements Edouard Mbadou**

Mr. Mbadou Balthazar, Director of Administration

**ATO**

Mr. Ngoulali Rigobert, Assistant Secretary-General

**Annex**

**BACKGROUND MATERIAL a/**

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a/ This annex has not been edited.