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STAFF APPRAISAL REPORT
THE GABONESE REPUBLIC
FORESTRY AND ENVIRONMENT PROJECT

JUNE 10, 1992

Agricultural Operations
Occidental and Central Africa Department

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CURRENCY EQUIVALENTS

Currency Unit = CFA Franc (CFAF)
US\$1 = CFAF 278 (December 1991)

WEIGHTS AND MEASURES

Metric System

ABBREVIATIONS AND ACRONYMS

BADEA	-	Banque Arabe pour le Développement Economique de l'Afrique
CCP	-	Comité de Coordination du Projet
CENA	-	Club des Ecologistes et Naturalistes Africains
CENAP	-	Centre National Anti-Pollution
CFG	-	Compagnie Forestière du Gabon
CIDA	-	Canadian International Development Agency
CTFT	-	Centre Technique Forestier Tropical
DGEF	-	Direction Générale des Eaux et Forêts
DFC	-	Direction de la Faune et Chasse
DGEPN	-	Direction Générale de l'Environnement et de la Protection de la Nature
EAP	-	Environmental Action Plan
ENEF	-	Ecole Nationale des Eaux et Forêts
FAC	-	Fonds d'Aide et de Coopération (France)
FAO/CP	-	Food and Agriculture Organization/Cooperative Program
FEG	-	Front des Ecologistes Gabonais
GTZ	-	Gesellschaft fur Technische Zusammenarbeit (Federal Republic of Germany)
IADR	-	Inter-Assistance pour le Développement Rural
IRAF	-	Institut de Recherches Agronomiques et Forestières
IRET	-	Institut de Recherche en Ecologie Tropicale
IUCN	-	International Union for the Conservation of Nature
MEF	-	Ministère des Eaux et Forêts
METPN	-	Ministère de l'Environnement, du Tourisme et des Parcs Nationaux
MESRS	-	Ministère de l'Education Secondaire et de la Recherche Scientifique
NEAP	-	National Environmental Action Plan
OCTRA	-	Office du Chemin de Fer Transgabonais
ORSTOM	-	Office de la Recherche Scientifique et des Territoires d'Outre-Mer
PCU	-	Project Coordination Unit
SAL	-	Structural Adjustment Loan
SHM	-	Société de la Haute Mondah
SNBG	-	Société Nationale des Bois du Gabon
SOMIVAB	-	Société de Mise en Valeur du Bois
TFAP	-	Tropical Forestry Action Plan
UNDP	-	United Nations Development Program
WWF	-	World Wildlife Fund

GOVERNMENT FISCAL YEAR

January 1 - December 31

THE GABONESE REPUBLIC
FORESTRY AND ENVIRONMENT PROJECT
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THE GABONESE REPUBLIC
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DOCUMENTS CONTAINED IN THE PROJECT FILE

A. DOCUMENTS AND REPORTS

1. Natural resource Sector Review, Solomon, September 1988.
2. Assessment of Wood Products Manufacturing and Marketing in Gabon, General Woods, December 1988.
3. Projst Forêt/Environnement, Rapport de Préparation, FAO/CP, July 1989
4. Rapport de Mission de Préparation: Volet Environnement, J. R. Mercier, Octobre, 1989.
5. Conservation before the Crisis: A Strategy for Conservation in Gabon, T.O. McShane and McShane-Caluzi, (WWF US), January 1990.
6. Rapport de Seconde Mission de Préparation: Volet Environnement, J.R. Mercier, Août 1990.
7. Rapport de Mission: Etude sur le Potentiel Touristique du Gabon, G. Hilz-Ward, Août 1990.
8. Rapport National sur l'Environnement, PNUD/Ministère du Plan/Brèche, Mai 1991.
9. Rapport sur la Formation Forestière, Banque Mondiale/AFOCEL/GABON, Décembre 1991
10. GABON - Agricultural Sector Review, Report No. 10629-GA.

B. WORKING PAPERS

1. Fiscal System
2. Environmental impact Assessment Report
3. Project Costs
4. Forestry and Environment Training
5. Forestry and Environment Research
6. Forest Rehabilitation and Management
7. Institutional Strengthening

THE GABONESE REPUBLIC
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LOAN AND PROJECT SUMMARY

Borrower: The Gabonese Republic

Beneficiaries: Ministry of Waters and Forestry (MEF)
Ministry of Environment, Tourism and National Parks (METPN)

Amount: US\$22.5 million equivalent

Terms: 15 years, including a five-year grace period, at the Bank's standard variable interest rate

Project

Description: The project would: (a) contribute to a better use of forestry resources by implementing, on a pilot basis, a management plan in the depleted coastal zone; (b) reinforce the strategic planning and operational capacity of government institutions in the sector through the restructuring and strengthening of the Ministry of Waters and Forestry (MEF) and the Ministry of Environment (METPN); (c) resume forestry and environment research activities; (d) make forestry and environment training more practical and tailored to the needs of the private sector and to conservation needs; (e) help prevent environmental degradation through the implementation of recommendations from key environmental studies; and (f) support the Government in the creation and maintenance of wildlife reserves. The project would represent the first phase of a long term effort to bring about the rational utilization of the country's natural resource base.

To meet the above objectives, the project would include the following components:

- (a) **Institutional Strengthening.** Assistance would be provided in restructuring MEF to streamline and better define the functions of its directorates; and in supplying other resources (field housing, offices, vehicles, etc.) to increase MEF and METPN operational, planning, and monitoring capabilities, and more importantly increase their presence in the field so as to enable them to better supervise logging operations. In addition, the Directorate of Game and Wildlife at MEF would be provided with the resources needed to:
(i) improve its operational capacity; (ii) enforce legal issues related to the environment; (iii) increase its presence in the field; and (iv) prevent poaching and other actions which could have a negative impact on the environment.
- (b) **Forestry and Environment Training.** Activities under this component would consist of (i) promoting a forestry and environment training program tailored to the needs of the private sector; (ii) providing professional training and retraining for forestry graduates; and (iii) implementing a management and conservation plan for the Mondah Forest.

- (c) Forestry and Environment Research. Activities envisaged under this component would center on: (i) genetic improvement of Okoumé trees; (ii) silvicultural operations on natural forest and plantations with a view to bringing about durable and rational management of forest resources; and (iii) stabilization of agricultural production systems in forest areas through agroforestry techniques--this need was highlighted during the Environmental Impact Assessment (EA) process. Some equipment and refrigeration facilities would be provided to the National Arboretum to ensure the conservation of its unique collection of plant species.
- (d) Forest Inventory and Rehabilitation. Project support would include the preparation and implementation of a management plan subsequent to the rehabilitation and protection of 40,000 ha of natural Okoumé stands identified from an inventory of 275,000 ha in the coastal zone; and rehabilitation of 5,000 to 6,000 ha of artificial Okoumé stands.
- (e) Creation and Maintenance of Reserves. This component concerns the protection of the Moukalaba and Setté-Cama reserves and provision of infrastructure for the creation of additional reserves. In concert with the World Wildlife Fund (WWF), the reserves would be strengthened and, in time, be opened for eco-tourism purposes.

Estimated Project Costs

	<u>Local</u>	<u>Foreign</u>	<u>Total</u>	<u>% of</u>
	----- (US\$ million) -----			<u>Base Costs</u>
A. <u>Institutional Strengthening</u>				
1. Management Support	0.7	1.5	2.2	7.4
2. Dir. Waters & Forestry	3.9	5.8	9.7	32.5
3. Dir. Wildlife	1.7	2.0	3.7	12.5
4. Dir. Environment	<u>0.6</u>	<u>0.9</u>	<u>1.5</u>	<u>5.0</u>
Sub-Total	6.9	10.2	17.2	57.3
B. <u>Forestry and Env. Training</u>	0.7	1.6	2.3	7.6
C. <u>Forestry Research</u>	0.9	1.2	2.1	7.1
D. <u>Forest Rehabilitation</u>				
1. Natural Okoumé Stands	2.4	1.2	3.6	12.0
2. Plantations	<u>2.0</u>	<u>0.2</u>	<u>2.2</u>	<u>7.5</u>
Sub-Total	4.4	1.4	5.8	19.5
E. <u>Reserves</u>				
1. Moukalaba	0.3	1.2	1.5	4.9
2. Sette Cama	<u>0.6</u>	<u>0.5</u>	<u>1.1</u>	<u>3.6</u>
Sub-Total	0.9	1.7	2.6	8.5
Total Base Costs	<u>13.8</u>	<u>16.2</u>	<u>30.0</u>	<u>100.0</u>
Physical Contingencies	0.7	1.1	1.8	6.2
Price Contingencies	<u>1.5</u>	<u>4.9</u>	<u>6.4</u>	<u>21.3</u>
Total Project Costs	16.0	22.2	38.2	127.4

Estimated Disbursements from the IBRD Loan

	<u>IBRD Fiscal Year</u>						
	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>
	-----US\$ million-----						
Annual	1.8	3.8	5.2	5.4	4.2	1.8	0.3
Cumulative	1.8	5.6	10.8	16.2	20.4	22.2	22.5

Benefits and Risks

The proposed project would improve the management and protection of Gabon's forest resources and its environment. Measures envisaged under the project would help: (a) stop overexploitation in the coastal zone; and (b) initiate a sound forest management plan for the remaining areas of the country. The project would serve as an important instrument for implementing government policies dealing with forestry and the environment, and would further strengthen the scope of these policies. The project would strengthen MEF and METPN's planning and operational capacity through the implementation of training programs, studies, and the provision of vehicles, equipment, and infrastructure. As a result of the National Environmental Action Plan initiated during project preparation, more appropriate conservation policies would be developed and implemented. The project would also encourage private sector involvement in the

implementation of activities which would have a significant impact on the conservation of the forestry sector, and provide significant employment potential for the rural sector. Through the implementation of a revamped training program at ENEF, the project would make forestry and environment training more relevant to the needs of the private sector and to conservation needs.

The main risk of the project lies in the fragility of institutions in the sectors. The restructuring of MEF and the reassigning of some of its staff to field offices, represent sensitive issues, but need to be undertaken if the competitiveness of the wood sector and the envisaged conservation objectives are to be attained. To reduce the risk, MEF would be formally restructured prior to negotiations and an acceptable field staff transfer plan would be made a condition of effectiveness. Also, the shortage of adequately trained staff will be minimized through improved training programs and technical assistance.

With regard to the environment, the Government's capacity to follow-up on environmental issues and the willingness of private foresters to participate in forest conservation programs pose potential risks. The NEAP would clearly establish each party's role and help formulate policies to better protect the environment.

A final risk concerns the timely availability of counterpart funding which, in the past, has been delayed and inadequate for the forestry and environment sectors. This risk is minimized, however, by the fact that the Government has come to realize the importance of forestry and the environment and, therefore, is committed to supporting the sector. Also, counterpart funds are made available in a timely fashion in ongoing Bank-financed projects (Technical Assistance, Road Maintenance). In addition, considerable efforts have been deployed to involve the Planning and Finance ministries since the early stages of project preparation, to ensure that the Government's contribution is properly provided for in the investment program.

Economic Rate of Return (ERR)

The ERR on the project's natural forest rehabilitation component is estimated at 18% before taking into account non-wood forest products of nutritional and medicinal value for rural communities, and the ecological benefits from reduced deforestation. The ERR on the plantations component is estimated at 13%.

THE GABONESE REPUBLIC

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KEY FEATURES OF THE AGRICULTURAL AND FORESTRY SECTORS (1990)

1.	<u>Population</u>	
	Total (Thousand)	1,100
	Growth Rate (% , 1980-87)	2.8
	Rural as % of Total Population	50
2.	<u>Economic Overview</u>	
	Total GDP (US\$ million)	4,495
	GDP Real Growth Rate (% , 1980-90)	2.1
	GDP per Capita	2 850
	Agricultural/Forestry GDP as % of Total GNP	10.3
3.	<u>Forestry Areas</u>	
	Total Land Area (km2)	267,000
	Forests - Forestry Zone ('000 ha)	22,000
	- Savannah ('000 ha)	4,000
	Plantations ('000 ha)	30
4.	<u>Production</u>	
	Logs (m3)	1,600,000
	Fuel Wood (m3)	1,222,000
	Charcoal - tons	
	- m3 equivalent	-
	Processed Timber	
	Plywood (m3)	52,000
	Other (m3)	53,200
5.	<u>Exports</u>	
	Logs (m3)	995,127
	Plywood (m3)	47,170
	Other (m3)	392,616
	Value of Timber and Wood products (CFAF billion)	48
	Total Exports (CFAF billion)	510
	Total Timber exports as percent of Total Exports	9.0
6.	<u>Government Revenues</u>	
	Tax revenues from timber (CFAF billion)	5.0
	Total tax revenues (CFAF billion)	278.5
	Percent of total tax revenues	2.0

THE GABONESE REPUBLIC

FORESTRY AND ENVIRONMENT PROJECT

STAFF APPRAISAL REPORT

I. INTRODUCTION

1.01 The Gabonese Government has requested assistance from the Bank for a Forestry and Environment Project. The proposed project was identified as a priority investment in the strategy outlined in the Agricultural/Forestry sector review carried out in 1988 by the Bank and the Gabonese Government, and prepared by FAO/CP in 1989. The project reflects the Government's concern with protecting and rationally utilizing a valuable resource base, and coping with localized forest depletion and environmental degradation.

1.02 Consequently, substantial emphasis is given in the project to improving the sector's contribution to the economy through a sound forest management program, and the strengthening of institutions in the sector to enable them to undertake the necessary policy reforms, increase revenue generation, and better protect and manage forest and wildlife resources. Furthermore, the Government was encouraged during preparation to undertake a National Environmental Action Plan (NEAP) which is expected to serve as a catalyst to preserving the country's ecological balance and channeling donors' actions in the sector.

II. SECTOR BACKGROUND

A. Economic Setting

2.01 The Gabonese Republic is located astride the Equator, extending from 2N to 4S in latitude and from 8E to 15E in longitude. Covering an area of 267,000 km², it is bounded by Equatorial Guinea and Cameroon to the north, and the Congo on the east and the south. A 750 km Atlantic coastline forms Gabon's western boundary. Approximately 85 percent of the country is covered with tropical forest and the remainder is covered by savannahs. Gabon is an oil producing country with a sparse population estimated to be 1.1 million inhabitants (1989), more than 50 percent of which is living in urban areas. Demographic growth is estimated to be 2.8 percent per annum. Gabon has historically been an exporter of primary commodities, relying almost entirely on extractive, enclave-type industries.

2.02 Until recently, the combination of political stability, rich natural resource (oil, manganese, uranium, timber), substantial foreign investments, and inflows of cheap labor from neighboring countries has allowed Gabon to achieve a GNP per capita of \$2,850 in 1990, down from \$4,000 in 1980, but still the highest in Sub-Saharan Africa. Gabon's position as an upper-middle-income country disguises, however, severe structural imbalances associated with its dependence on oil exports and the absence of a sustainable productive base outside the oil and mining sectors.

2.03 The oil price shock of 1973 started a new era in Gabon's development, marked by a growing linkage of the domestic economy to swings in the international oil market, an unparalleled growth of the public sector, and emergence of structural rigidities in response to fluctuations in demand. The oil sector became the dominant force in the economy, contributing 45 percent of GDP and accounting for 63 percent of budgetary revenue and 83 percent of export receipts in 1985. The two major oil price increases in 1973 and 1980 led to an acceleration of GDP in succeeding

years, followed by periods of major contraction when oil prices dropped between 1977-79 and after 1985. In 1980-85, real GDP growth averaged 2.3 percent p.a. (non-oil

GDP: 4.2 percent); inflation, however, averaged 15 percent. In 1985-89, real GDP declined by 3 percent p.a. (non-oil GDP: -4.1 percent). The recurring economic instability has confirmed the economy's vulnerability to changes in the international oil market, and thus underlined the need for comprehensive policy reform to diversify the economy and remove price and other distortions that have accompanied Gabon's oil prosperity.

2.04 The domestic recycling of oil windfalls did not lead to a sustained transformation of the economy, primarily because massive government spending ignored the constraints posed by Gabon's limited absorptive capacity. These include a narrow, high-cost domestic market, a small labor force, and weak response by the private sector. With fiscal revenues doubling between 1980 and 1985, the Government continued its strategy of financing large-scale, but poorly conceived investment projects and creating a large parastatal sector. Although capital expenditure rose twice as fast as revenue during that period, less than 10 percent of the investment budget was devoted to directly productive activities or smallholder services. With a portfolio of 65 public enterprises, the Government acted increasingly as a direct producer of goods. However, most of the expansion of non-oil productive activities through inefficiently operating PEs relied on heavy subsidies and highly protected markets for internationally uncompetitive products. Subsequently, when oil revenues declined, the growth momentum quickly faltered and Gabon's expenditure pattern became unsustainable.

2.05 The 1986 collapse in dollar oil prices (-55 percent), in conjunction with the 23 percent appreciation of the CFAF against the U.S. dollar compared to 1985, triggered severe external and internal imbalances. The current account deficit jumped from 4.4 percent of GDP in 1985 to nearly 31 percent in 1986, as oil export earnings dropped by 66 percent to CFAF 245 billion. Government oil revenue declined by almost a third, causing the fiscal deficit to widen from 5 percent of GDP (1985) to 15 percent in 1986. Hoping that the deterioration in oil prices would prove to be temporary, the Government relied on external financing to cover the fiscal gap. As a result, the stock of external debt, which had dropped to US\$ 0.7 billion by 1984, almost doubled between 1985 and 1987 to reach US\$1.7 billion (53 percent of GNP) in 1987.

Fiscal Stabilization and Structural Adjustment

2.06 Faced with a worsening financial situation, the Government adopted a first stabilization program at the end of 1986 with support from the IMF. It aimed at regaining budgetary control and containing the current account deficit. Prompted by the 75 percent decline in oil revenue in 1987 over their 1986 level (total revenue: -50 percent), the Government slashed capital expenditure from CFAF 400 billion (1986) to CFAF 70 billion (1988) and reduced PE subsidies. The 10 percent decline in non-oil revenue in both 1987 and 1988 reflected the deepening recession in the rest of the economy. Although the budget deficit was reduced from 12 percent of GDP in 1987 to 7.5 percent of GDP in 1989, the Government's stabilization efforts stayed below expectations. In particular, the Government failed to tighten control over current non-interest expenditures, notably with regard to public sector wages, and fully implement revenue enhancing measures. A second stand-by program, concluded in October 1989, became inoperative towards the end of the year, owing to increased budgetary expenditure that followed rising social tensions (para. 2.15) and lower-than-programmed oil revenue collection. The uncertainty surrounding the Government's stabilization efforts in turn led to delays in the disbursement of external assistance. As a result, the Treasury had accumulated payment arrears of

CFAP 40 billion (3.5 percent of GDP) at the end of 1989, most of which vis-à-vis Paris Club creditors.

2.07 Following a 16 percent contraction of real GDP in 1987, Gabon's economy expanded by 2 percent and 3.8 percent in the following two years, reflecting the gradual resurgence in oil exploration and production activities. In contrast, value added in all other sectors declined further, translating into rising urban unemployment. Most severely affected by this protracted recession, which was passed on via substantially reduced public expenditures, were construction, transport, and service related activities. Figures for 1990 confirmed the growing disparity between a growing oil sector (30.0 percent increase in production) and the continuing recession in the non-oil economy (- 4.6 percent), with overall GDP increasing by a real 5.3 percent in 1990. It is important to note that events during the Gulf crisis contributed significantly to the booming of the oil sector.

2.08 The situation in Gabon's balance of payments remained critical between 1987 and 1990, with little change in the size of the overall deficit (-10 percent of GDP), but a markedly different composition. On the one hand, higher export receipts for oil and other minerals helped improve the current account deficit from 31 percent in 1986 to just 5.5 percent in 1989, with a surplus of around 3 percent for 1990. On the other hand, the capital account deteriorated sharply in 1989-90. This reflects not only reduced drawings on publicly guaranteed loans, but also a decrease in direct foreign investment and considerable private capital transfers abroad. The size of fiscal and current account deficits required continued external support, primarily in form of debt relief obtained through Paris and London Club rescheduling in addition to foreign financing from bilateral and multilateral sources. Although Gabon's debt service ratio (before rescheduling) rose from 13 percent in 1985 to around 25 percent between 1986 and 1989, actual debt service payments (after rescheduling) averaged less than 7.5 percent over the same period.

2.09 To complement its stabilization efforts, the Government adopted a broad economic reform program in April 1988, supported by adjustment loans from the World Bank, the African Development Bank, and the French Government. Its objective was to help restore the competitiveness of the non-oil sectors and return Gabon to a sustainable growth path by: (a) improving the performance of the parastatal sector through State divestiture and PE rehabilitation; (b) reinforcing public sector resource management; (c) liberalizing the regulatory environment for private sector activity; and (d) reformulating sectoral policies in the non-oil economy. In this regard, the Government has emphasized the importance of the forestry sector as a source of long-term growth. The proposed project has capitalized on the above measures by initiating a policy dialogue with the Government and the donor community to develop a rational approach to forest management and environmental protection, and provide investment funding to strengthen the sector.

2.10 In general, the first phase of the structural adjustment program helped to initiate a broad dialogue between the Government and donors on the fundamental lack of sustainability of past economic policies. The Government took difficult initial steps in reorienting its economic policies and gradually reducing the scope of state interventions in favor of private sector activities, most notably by agreeing to a comprehensive restructuring of the parastatal sector. However, the severity of the recession and Gabon's deep-seated structural constraints have limited rapid progress towards a more diversified economy.

2.11 The reform of the public enterprise sector represents a significant accomplishment of the structural adjustment program. From near total disarray at the time of the oil price collapse in 1986, the

Government has undertaken decisive steps towards the restructuring of public enterprises. On the basis of financial audits for 35 PEs, the Government liquidated five enterprises, opened seven enterprises for private majority ownership, and announced a restructuring program for another ten enterprises. A management contract with Air Gabon was signed in 1989. Similar negotiations with OCTRA (railways) and SEEG (power) are ongoing. The Government successfully committed most PEs to reduce their wage bill by an average of 15 percent in 1988/89, involving in some cases reductions of 30 percent or more for higher level managers. The Government also began to restructure the finances of the sector by settling 20 percent of accrued cross-debts between parastatals and the Government.

2.12 In support of the policy reform efforts envisaged under the structural adjustment program, the Government strengthened the investment planning process. It adopted a more comprehensive perspective on public resource management by establishing a three-year rolling investment plan in 1988. This plan aligns public investments more closely with broad economic objectives and details their recurrent expenditure in following years. Recourse to suppliers' credit and extrabudgetary expenditure as methods of investment financing were eliminated. The Government increased the share of investment expenditures for road maintenance and smallholder agriculture, while planning to reduce the emphasis on loss-making agroindustrial enterprises. In 1987/88, several measures were introduced aimed at enhancing non-oil revenues, including the transformation of the compulsory loan on salaries and sales into a solidarity tax and a surcharge on the income tax. Finally, the Government has started to reduce the excessive state consumption of public services.

2.13 In the area of incentive reform, the Government has taken measures to liberalize trade and stimulate private sector activities. Quantitative import restrictions on all but five commodities have been replaced by transitional import tariffs. Price controls on locally produced goods and the trade margins on imported commodities have also been removed. In order to encourage non-oil exports, the turnover tax on exports has been lifted except on exports of natural resources.

2.14 The Government has accorded high priority to the restructuring of the forestry sector on an environmentally sound basis and begun to implement measures aimed at improving the competitiveness of Gabon's timber exports. The poor financial and managerial performance of SNGB, the timber marketing monopoly, severely constrained the viability of private forestry companies. The Government has decided to finalize the restructuring of SNGB's marketing activities in 1992 and to reform the sector's fiscal statutes. In addition, it has entered into negotiations with private parties interested in taking over Compagnie Forestière du Gabon (CFG), a large state-owned wood processing company.

Recent Economic and Political Developments

2.15 Triggered by a growing disenchantment with the traditional one-party system and dissatisfaction over worsening employment prospects, Gabon's social and political climate grew increasingly tense at the end of 1989. Led by student protests, strikes spread through the parapublic and civil service sectors. The strikers demanded higher wages for lower salaried employees, reimbursement of the solidarity tax, reductions in the cost of living, and departures of unqualified managers. The Government gave in to most demands in February 1990.

2.16 In an attempt to calm the political situation, President Bongo convened a National Conference in March 1990, which was attended by more than 150 political groups and professional associations. The Conference participants demanded and obtained: (a) the immediate adoption of a multi-party system; (b) new elections for the National Assembly in October 1990;

(c) the formation of a transition Government; (d) wide ranging policy reforms in the areas of health and education; and (e) measures to ensure better accountability of public officials. Gabon's first multiparty elections, which were held between September and November 1990, resulted in a narrow majority for the former Government party in the National Assembly, with opposition parties gaining 57 of the 120 seats.

2.17 The cost of Government's concessions and, to a lesser extent, the increase in petroleum prices in the wake of the recent Gulf crisis, had considerable impact on Gabon's budgetary situation for 1990. The Government's social concessions, which are estimated at CFAF 38 billion, seriously undermined its fiscal stabilization efforts. In particular, the public sector wage bill rose 18 percent above targets agreed to under the IMF program and the Government failed to adopt compensatory measures to enhance non-oil revenue. Similarly, the reduction of wage costs in the PE sector and other rehabilitation measures were partly reversed. These additional expenditures were partially offset by unexpected oil windfalls in the order of CFAF 20 billion and the sale of the Government's 10 percent share of oil produced from the Rabi-Kounga field. Thus, the estimated size of the budget deficit (CFAF 60 billion or 5 percent of GDP) probably understates the erosion of fiscal discipline that occurred in 1990. One indicator is the accumulation of payment arrears to external creditors and domestic suppliers in the order of 6.5 percent of GDP.

Medium-term Outlook and Development Strategy

2.18 The 1991-93 Investment Plan identifies three principal objectives for the Government's medium-term development strategy: (a) restoring sustainable growth and reducing the economy's vulnerability to international oil shocks through the promotion of private non-oil activities; (b) strengthening the Government's capacity to implement sustainable expenditure policies in priority sectors in the context of increasing, yet highly volatile, revenues; and (c) improving the social welfare conditions through appropriate labor, education and health policies.

2.19 In its attempt to direct the economy out of a protracted five-year recession and stimulate growth in the non-oil sector, the Government has to effectively overcome four major constraints: First, further reduce the size of the public enterprise sector. The Government has to adopt a comprehensive strategy that entails divestiture and privatization of parastatals in forestry, construction, and agriculture; introduction of a new legal framework that allows the creation of financially independent companies under majority private management in the case of OCTRA (railroad) and AIR GABON; and financial reform of public utilities. Second, reduction of Gabon's high wage and cost structure. This requires the implementation of a more rational compensation system for government employees; further staff reductions in the parastatal sector and civil service reform; and tariff reforms for domestically provided services (electricity, telecommunications). Third, a strategy to address the serious bottlenecks and policy-based distortions that inhibit the private sector's supply response to a shift in relative prices. Chief among them are an inadequate and poorly maintained road network, the lack of agricultural services and marketing channels for agricultural goods, and the lack of incentives for small and medium enterprises. And fourth, implementation of a long-term strategy for the transparent collection and efficient utilization of oil revenue in order to contain the destabilizing effects of future oil price swings. The anticipated rise in oil exports will result in an increase of oil revenues in 1992, compared with 1989, testing the Government's ability to withstand pressures to again increase public spending on civil service wages and unproductive investments.

2.20 Thus, fiscal stabilization will continue to be at the core of the authorities's medium term program. The Government has to tighten budgetary control over current expenditures, restore wage restraint, and adopt an economically sound investment program. Of particular importance are the continued rehabilitation of the road network, a comprehensive review of social sector policies, and increased spending for smallholder agriculture. On the revenue side, the authorities have to strengthen customs administration, eliminate ad hoc exemptions and broaden the non-oil tax base. The restructuring of the public enterprise sector, begun under the first structural adjustment program, has to remain a Government priority in order to reduce the sector's continuing drain on public resources and provide economic opportunities for private entrepreneurs.

2.21 As these fiscal and structural reforms are implemented, the growth prospects for the non-oil economy should gradually improve, reversing the substantial decline in per capita income over the last decade. Untapped growth opportunities exist in the forestry sector, smallholder agriculture, rubber production, and service related activities such as eco-tourism. The prospects for non-oil mining activities (manganese, uranium, other minerals) also remain favorable. However, unless these structural rigidities are effectively overcome and private investments take up the slack of reduced government spending, growth in real non-oil GDP is unlikely to exceed population growth (estimated at 2.8 percent p.a.).

2.22 Notwithstanding the positive impact of a diversification strategy in the non-oil economy, the oil sector will provide for some time the main impetus for overall growth in real GDP, estimated at around 5 percent p.a. over the medium term. Oil production from a major new field (Rabi) started coming on stream in 1989, lifting Gabon's oil production from 8 million MT in 1988 to 14.1 million MT in 1991. Short-term forecasts indicate a stabilization of oil production at about 13.5 million MT through 1995. Provided a stabilization of the political situation in the coming months, Gabon's on- and off-shore territories will continue to attract substantial foreign investment from oil companies, with new wells possibly coming on stream by the mid-1990s. The dominant position of the oil sector and the associated dependence of Gabon's economy to swings in the international oil market is likely to continue throughout the 1990s.

2.23. Although the medium term prospects for fiscal recovery are favorable, they are critically dependent on the return to a rational and more transparent fiscal management. Accordingly, the combination of additional oil and non-oil revenue and tighter expenditure control is expected to result in a moderate fiscal surplus from 1993 onwards. At the same time, the current account is expected to register a rising surplus. However, in order to support this economy-wide recovery and alleviate the Government's serious debt servicing problems in 1992, Gabon will require additional external assistance over the medium-term. This includes the rescheduling of commercial and official debt service obligations as well as limited new financing. Following this period, Gabon should be well positioned to meet its debt service payments without further rescheduling, thereby restoring its international creditworthiness. In addition, the Government should consider using part of the expected oil bonus to retire part of its external debt obligations ahead of schedule and accumulate net foreign assets in a financial reserve fund.

B. The Agricultural Sector

2.24 The combined value-added of agriculture and forestry has been stagnant or declining over a considerable period, and contributed only 6 percent to overall GDP from 1975 to 1985. In 1986, the sector's contribution to GDP rose to nearly 9 percent, although this was mainly

attributable to the fall in GDP rather than to an increase in agricultural output. The sector is characterized by low population density, inefficient institutions and deficient infrastructure. As such, agriculture in Gabon has not developed into a viable, commercially oriented sector. Food imports, mainly driven by urban demand, increased by 15.5 percent annually between 1979 and 1986, outpacing the 12.7 percent annual increase in total imports.

2.25 Production activities in rural areas are dominated by the smallholder sector comprising 70,000 households. Smallholders produce most of the food crops (plantains, maize, taro, yams, and cassava) on 60,000 ha and all of the coffee, and cocoa on 15,000 ha. The agro-industrial sector, which has been the primary focus of government intervention occupies 100,000 ha, of which 7,500 ha is for oil palm, 3,300 ha for rubber, 285 ha for coffee and cocoa, 6,000 ha for soybeans and maize, 80,000 ha for livestock ranches, and 3,390 ha for sugar cane plantations.

2.26 The potential for future agricultural growth is limited. However, some growth may be realized with strong government support for the smallholder sector through better agricultural services, improved infrastructure, and proper incentives. Growth in this sector could generate income levels and sustain an environment which would be sufficiently attractive to retain a significant portion of the population in rural areas, and generate a slightly larger, and growing, share of the national output.

C. The Forestry and Environment Sector

1. Forest Resources

2.27 The country is characterized by coastal evergreen forest in the North, and a close semi-deciduous forest in most of the rest, with high density Okoumé stands. Dense tropical forest dominated by Okoumé covers 85 percent of the territory, and contains more than 100 species of potential commercial value. Total dense forest cover is estimated at 22 million ha, of which 12.5 million ha are considered to be valuable commercial stands.

2.28 Forest resources in Gabon can be broadly divided into two categories: the Okoumé-Ozigo complex, and other species (Bois Divers). Okoumé--the most abundant wood resource--is ideal for peeling and making high quality plywood.

2.29 Although overall extraction rates of all species are well below production potential, deforestation is prevalent in the overexploited coastal zone (map IBRD No. 23575). The low population density (less than 4 inhabitants/km²) and the resulting lack of agricultural encroachment have prevented significant ecological and environmental degradation in most other areas. Deforestation rates are very low (less than 1% per annum) and of all the African countries, Gabon is expected to lose the smallest portion of its forest area during the next 50 years.

2. Other Natural Resources

2.30 The country's flora and fauna benefit from a diversity that is unparalleled in tropical Africa. It is estimated that out of the 120 species of Begonia known in Africa, 50 are present in Gabon and 16 are endemic. It is also estimated that there are 6,000 species of plants. The rich forest of Gabon is also an important sanctuary for 19 different primate species. The gorilla and chimpanzee population is estimated at 35,000 and 64,000 respectively. There are also about 20 indigenous carnivorous species and more than 600 bird species. A number of waterways and a long (750 km) coastline contain a somewhat limited but diverse fish

population and other marine life systems. In addition, Gabon possesses significant petroleum, natural gas, and hydro-electric resources.

2.31 Environmental damage is localized mainly because of Gabon's low rural population density (fewer than one inhabitant per km²) and therefore the minimal impact of agricultural practices (shifting cultivation/slash and burn). Logging activities, still below maximum sustainable exploitation levels in most of the country, have however caused environmental concerns in the depleted coastal zone. Extensive logging in this zone, coupled with an increase in commercial game hunting, has led the Government to initiate measures to protect the country's rich and diverse natural resource base.

3. National Parks and Reserves

2.32 There are currently no officially designated National Parks in Gabon. However, an area covering 19,747 km², or 10 percent of the country's total forest cover, has been designated by the Government as reserves and arboretum because of a strong and diverse wildlife presence. This area includes:

- (a) the fauna and hunting reserve of Lopé (5,000 km²);
- (b) the fauna reserve of Moukalaba (1,000 km²);
- (c) the fauna and hunting reserve of Sette Cama (7,000 km²);
- (d) the biosphere reserve of Ipassa (100 km²);
- (e) the Presidential reserve of Wonga-Wongé (4,000 km²); and
- (f) the Sibang arboretum.

4. Environmental Legislation

2.33 In theory, the Government has established a sound legal framework for forest management and wildlife conservation. It was first established in 1946 by the French Equatorial African administration and modified by subsequent laws of the Gabonese Government (June 1960, November 1962, April 1971, July 1982, March 1987). Under the law enacted in 1982, all classified state forest land is subject to a forest use plan. The law specifies that only zones that have been fully inventoried may be exploited. Several decrees for the implementation of this Law have been signed. Among the few texts which still need to be signed, two decrees defining the areas which may be exploited as well as the specific conditions for exploitation would be signed as a condition of effectiveness of the proposed project (para 8.02 (b)). There is also a legal framework for the conservation of wildlife and other natural resources (Loi Relative à la Protection et à l'Amélioration de l'Environnement). The adoption and promulgation of this legal framework would be a condition of effectiveness (para 8.02 (a)). Provisions have been made to allocate 6.7 percent of total land area for sanctuaries and hunting reserves. The hunting and the collecting of animal and vegetal materials are also restricted by the Government. However, while both the Ministry of Waters and Forestry (MEF) and the Ministry of Environment, Tourism, and National Parks (METPN) have extensive policing powers to combat poaching and supervise logging practices, they have limited resources with which to pursue their mandate. Therefore, many of the regulations have not been consistently enforced.

2.34 Gabon ratified in February 1989 the African Convention for the Conservation of Nature and Natural Resources signed in Algiers, the

Convention of Washington, and the Convention on the International Commerce of Species of Wild Fauna and Flora threatened with extinction.

5. Institutions in the Sector

2.35 The proliferation of institutions, coupled with the lack of a clearly defined strategy on environmental issues, has resulted in an overlapping of institutional functions and competence, in a duplication of efforts, and a waste of resources. While the main institutions responsible for forestry and environment issues are MEF and METPN, several other institutions are involved in the formulation and implementation of policies dealing with the environment: the Ministry of Energy, the Ministry of Mining, the Ministry of Agriculture and Livestock, and the Ministry of Health.

2.36 The Ministry of Waters and Forestry (MEF) is the main institution responsible for implementing the Government's strategy for the Forestry sector. After a 1988 cabinet restructuring, MEF was placed under the authority of the First Vice Prime Ministry so as to emphasize the renewed interest the Government was placing on the forestry sector. In 1990, MEF was merged with the Ministry of the Environment under a provisional Government. However, the consolidation of Environment and Forestry in one Ministry was reversed after the October 1990 multi-party elections. MEF has 319 staff of all grades: 104 professionals, 117 technicians, 59 brigadiers, and 39 support staff. About 90 percent of the professionals are posted in Libreville. MEF organization chart is presented in Annex 1.

2.37 At MEF, the Directorate General of Waters and Forestry (DGEF) operates as a coordinating structure, and is currently responsible for 10 other directorates at the central level. Within MEF, the main implementing institution responsible for environmental issues is the Directorate of Game and Wildlife (DFC) which supervises two services and two field brigades (Moukalaba, Lopé), with a total staff of 71, of which 9 are professionals. DFC is responsible for:

- (a) the formulation of a master plan on wildlife conservation;
- (b) the implementation of sound management and conservation techniques for wildlife resources;
- (c) the coordination and supervision of activities pertaining to wildlife, in its affiliated field services;
- (d) the collection and establishment of wildlife statistics; and
- (e) the interface with national and international organizations involved in wildlife issues.

2.38 MEF is also present in each of the nine regions of the country. However, only a minimal number of technical staff is actually posted in the field. Most forestry departments at this level are poorly equipped and are not operational. In order to execute viable forest management programs, and decentralize operations, it will be necessary to improve the management and technical capacity of regional forestry departments. The proposed project would address this issue.

2.39 The Ministry's budgetary allocations have consistently decreased since 1985 when CFAF 5.9 billion (6 percent of the public investment budget) were allocated to the Ministry. This amount was reduced to CFAF 2.4 billion (2.5 percent of the public investment budget) in 1989 and to CFAF 0.8 billion in 1991 (less than one percent of the public investment

budget). Noteworthy is the fact that two-thirds of budgetary allocations for recurrent expenditures and 95 percent of fuel allocations are used at headquarters, therefore reducing the operating capacity of regional forestry services. These services lack the funds and the mobility to either conduct inventories or monitor commercial logging operations. This has been a primary cause for the depletion of the coastal zone and the poor valorization of forest resources.

2.40 As part of the new strategy for the sector, the Government has agreed to establish a restructuring plan for MEF and assign part of its plethoric headquarters staff to regional forestry services. The restructuring plan's objectives would be to (a) reduce the overlapping of institutional functions so as to avoid conflicts, duplication of efforts, and an inefficient utilization of resources; and (b) increase the Ministry's operational capacity in the field. It would consist of regrouping all central directorates (9) into three directorates, namely the Directorate of Forestry, the Directorate of Fisheries, and the Directorate of Wildlife. Coupled with the merging would be the progressive transfer of staff from headquarters to regional inspection units which, under the new plan, would be given the status of central directorates. In addition, the Government is working on a series of incentive measures which, if implemented properly, would induce a natural attraction for field assignments. The Ministry of Waters and Forestry (MEF) is discussing with both the Ministry of Finance (MFB) and the Ministry of Labor (MT) the type of incentive framework (promotions, better working environment, logistical support) that would be suited for this purpose.

2.41 Since its establishment in 1985, the Ministry of Environment, Tourism, and National Parks (METPN) has been responsible for:

- (a) elaborating and implementing government policies pertaining to the environment and the protection of nature;
- (b) protecting and preserving the natural milieu;
- (c) studying and monitoring the environment and ecosystems; and
- (d) promoting and facilitating the interface with the donor community on matters related to the environment.

2.42 METPN's central organization consists primarily of two General Directorates: the Directorate for the Protection of Nature and the Environment (DGEPN) that supervises two services with a total staff of 25, of which 14 are professionals, and the Directorate of Tourism (DGT) which holds the essential and immediate responsibility for the formulation and implementation of tourism policy. Presently, it comprises 62 employees of which 40 have civil service status and 22 are contract personnel. METPN has no representation outside of Libreville and is therefore unable to undertake any activity in the field. The National Center for Anti-Pollution, the National Committee on Man and Biosphere, and the National Council on the Environment also fall under the tutelage of METPN. The organization chart of METPN is presented in Annex 2.

2.43 Even though the establishment of a Ministry responsible for environmental issues suggests the Government's commitment to a better environment, METPN has not been able to operate as a full fledged environmental policy setting and implementing agency. The major problems impairing its performance are: (a) the shortage of staff with the proper profile; (b) inadequate funding for operational expenditures; (c) the lack of a strategy and action plan on environmental issues; and (d) the lack of coordination with MEF and other concerned institutions.

2.44 The Société Nationale des Bois du Gabon (SNBG). SNBG, a parapublic enterprise, was established in 1975 to (a) exercise a marketing monopoly on logs of all species; (b) stimulate the development of the national timber industry; (c) assist through its own resources in the expansion of markets for Gabonese timber and timber products; and (d) help stabilize prices of timber and timber products.

2.45 Contrary to its mandate, SNBG not only has done very little to stimulate growth in the forestry sector, but, until recently, stood as a major stumbling block for development in the sector. Its inefficiencies and high operating costs have increased its marketing margins and contributed to Gabon's loss of competitiveness on the world market. Faced with this untenable situation, the Government initiated a restructuring plan for SNBG, which together with the envisaged transfer of ownership to the private sector is the consequence of a 1988 audit of SNBG, measures called for under the first Structural Adjustment Loan, and discussions with the Syndicate of Foresters.

2.46 In February 1991, the Government of Gabon started the implementation of a restructuring plan that should transform SNBG into a viable and efficient entity. In this regard, the following measures have been implemented during the transitory period (February 1, 1991 - February 29, 1992): (a) a representative of the Foresters Syndicate was named to head SNBG's Board of Directors; (b) a new Director General, chosen by all parties concerned, was named; (c) a private accounting firm was hired to oversee all financial operations; (d) a new salary structure was adopted on July 1, 1991; (e) across the board reduction of operating costs was initiated; (f) transfer of all civil service staff to their department of origin was finalized on August 31, 1991; and (g) a management committee was established to oversee the restructuring plan. These actions are essential for the revival of the sector.

2.47 At the end of the transitory period (February 1992) an assessment of the restructuring program was undertaken by the Government and the Bank. This assessment revealed that considerable progress had been made in the areas of cost reduction, transparency in the budgetary process, staffing and wage reforms, and marketing performance. In particular, SNBG has (a) reduced its wage bill from CFAF 2.4 billion to CFAF 1.7 billion; (b) reduced staff from 357 to 286; (c) shortened delays in payment to foresters from 130 days to 60 days; (d) reduced general operating expenditures by more than 40 percent; and (e) fulfilled its fiscal obligations vis-à-vis the State Treasury. In fact, SNBG is forecasting for Fiscal Year 1992 close to CFAF 240 million of net profit. It would be the first profitable year for SNBG since 1975--when the parapublic enterprise was initially established.

2.48 As the restructuring program proved effective, the Government has decided against a complete privatization of SNBG. Although it welcomes majority ownership of SNBG by the private sector, the Government's position is that under the prevailing conditions where it has weak institutional capacity at the field level to control commercial logging practices, SNBG is the only vehicle through which it has an effective way of monitoring (droit de regard) commercial logging activities. Furthermore, a restructured and efficient SNBG should enable the forestry sector to properly fulfill its social, economic and environmental obligations. The foresters, the Government, and the rural communities are all expected to benefit from the restructured SNBG.

2.49 Forestry and Environment Training. Forestry and Environment training in Gabon has had a negligible impact on the sector's development. It comes under the aegis of MEF but its main implementing institution is the National School for Waters and Forestry (ENEF), located 30 miles from Libreville. For the past several years, forestry and environment training

in Gabon has been plagued by a number of problems due to (a) the lack of a clearly defined training strategy; (b) a training curriculum that has so far been tailored to only fill the needs of the administration; and (c) little relevance to activities in the forestry sector and to conservation practices.

2.50 Forestry and Environment Research. Due to funding limitations, the current forestry and environment research program has been limited to a few experiments dealing mainly with silviculture on natural Okoumé stands and plantations, genetic improvement of trees, tree pathology, and wood technology. It is carried out mainly by the Institute for Agronomy and Forestry Research (IRAF). This institute was created in 1976 to follow-up on research programs undertaken in the past by the French Office for Scientific and Technical Research (ORSTOM) and the Technical Center for Tropical Forestry (CTFT). Unlike most institutions involved in the forestry sector, IRAF comes under the aegis of the Ministry of Higher and Scientific Education (MESRS). To a lesser extent, the National Arboretum (l'Herbier National) and the Research Institute for Tropical Ecology (IRET) are also involved in forestry and environment research.

6. Forest Exploitation

2.51 Virtually all forest lands in Gabon are owned by the Government, which in turn regulates forest exploitation by granting a fixed number of permits to forestry companies for logging operations. Although logging permits have been granted for 8.6 million ha, logging operations are being undertaken only on about 4 million ha. Logging concessions are granted for two zones:

- The First Zone consists of 5 million ha extending from the coastal plain to 150 km inland. The relatively flat terrain coupled with the proximity to ports and an extensive river network, have resulted in lower transportation and production costs compared with other parts of the country. As a result, timber production was limited to the coastal region until 1962, when extensive exploitation led the Government to curtail logging in this zone and enact legislation which forced large logging companies to relocate to the Second Zone situated more towards the interior. The First Zone was reserved for exploitation by national logging companies as the Government wanted to encourage the participation of the Gabonese population in forestry. This practice so far has not yielded the anticipated results as only very few Gabonese have actually undertaken logging activities. Most have been subleasing their concessions to foreign concessionaires.
- The Second Zone encompasses 16.5 million ha, much of which has been made accessible as a result of the Trans-Gabonese railroad. Concessions have been granted on 6 million ha, with 1 million allotted to Gabonese companies. The Government has placed a ceiling of 200,000 ha of concession per company.

2.52 Even though there are rules governing logging activities and exploitation rights, the Gabonese authorities, namely the Ministry of Waters and Forestry (MEF) staff, have inadequate resources and capacity to assure compliance with regulations. The short duration of logging permits, which encourages overexploitation over the short-term rather than conservation for future gains, has also been detrimental. The combination of these inadequacies has been the primary cause for the depletion of the First Zone, but more importantly has had a negative impact on the environment and the forestry sector as a whole.

7. The Timber Industry

2.53 In Gabon, timber processing for exports is dominated by a few large companies. The Compagnie Forestière du Gabon (CFG), a parastatal, is the largest wood processing company in the country and the largest plywood producer on the African continent, with 80,000 m³ of finished product per annum. The company's logging operations average 240,000 m³ per annum, of which 88 percent is of Okoumé. Two major expatriate companies (SHM-Leroy and ROG-Rougier, France) are involved in the production of peeled veneers and plywood. The local demand for processed wood is easily met by 28 sawmills scattered throughout the country, averaging an output of 100,000 m³ of sawnwood per annum. SOMIVAB, which is owned by the railroad company (OCTRA-Transgabonais), produces Azobe railway ties for local use. The sawmills are usually small and are the major users of "Bois Divers".

2.54 The wood industry has experienced some difficulties because of the following structural and logistical constraints: (a) the overstaffing of processing plants; (b) the increasing distance from logging sites to mills as depletion of adjacent forest becomes more pronounced; (c) the ageing of equipment; and (d) the overall downturn of the economy in major urban centers (Libreville, Port-Gentil). As part of its new strategy for the sector, the Government has agreed to a restructuring plan and is currently assessing several proposals for the privatization of the largest wood processing company (CFG).

8. The Fiscal System

2.55 The current fiscal system in the wood sector is triple-tiered: (a) area based taxes; (b) stumpage fees; and (c) export taxes (Droits et Taxes de Sortie--DTS) on export logs. Area taxes are applied for all size concessions and vary between 4 CFAF and 20 CFAF per ha. For larger industrial concessions, area taxes are negotiated on a case by case basis, depending on the level of investment. A one time fee of 2 CFAF per ha is paid at the time of attribution. Stumpage fees are set according to grade and species and vary from zero to 3,500 CFAF per m³. Lower grades of timber (Choix Economique, Choix Spécial) are not taxed. This stumpage tax is levied at export along with the DTS. Export taxes, including the stumpage tax, include three fees (six proportional taxes, three fixed taxes, and a custom stamp). Based on FOB prices set by the timber marketing parastatal SNBG, and a mix of species and grades, the average taxation amounts to 2,850 CFAF per m³.

2.56 Efforts have been made to promote local processing through a very low taxation rate and procedures on concession attribution that stipulate a certain transformation rate according to the size of the concession and the level of investment.

2.57 Efficiency of the System. The current system has proved ill-suited to achieve the Government's fiscal and development objectives in the forestry sector for the following reasons:

- (a) the lack of quality and specification control on a given quantity of logs that some companies are obligated to transform has led to inefficient sawing techniques and conditioning of the finished product which, in turn, contribute to the low competitiveness of Gabon's wood products on the export market;
- (b) the concession attribution system has not been properly applied and has led to an overexploitation of the readily accessible First Zone. Furthermore, it does not provide an adequate incentive system to develop less accessible forest areas, notably in the eastern part of the country but rather encourages overexploitation in easy to reach areas;

- (c) the very low taxation rate on "Bois Divers" compared to the comparatively high taxation rate on Okoumé and Ozigo, introduces a distortion in the recovery rate of the taxation system. Some highly valued timber species with FOB prices two or three times higher than Okoumé, are taxed at comparatively low levels; and
- (d) the fiscal system is very complex; it includes a multitude of taxes with rates as low as 0.2 percent of FOB value. This complexity results in heavy and unwarranted administrative work, when many of the taxes could be lumped into a single fee.

2.58 The current fiscal system therefore is not optimal. Furthermore, it is not known whether the combined weight of the various forest fees and taxes is too heavy, causing undue strain on the logging firms, or too light, contributing to wasteful logging practices and causing the Government to lose potential revenue. It is of paramount importance that fiscal reforms be undertaken. Consequently, the Government and the Bank agreed on the need for a study of the fiscal system. Recommendations from the study would pave the way for a reform of the forest fiscal system. The reform would address: (a) the overall competitiveness of the sector; (b) the financial viability of timber companies; and (c) the rent capture for the sector. These reforms should be made an integral part of the Government's new strategy for the sector and should address conservation objectives. Terms of reference of the study (Annex 3) have been approved by the Government. It was also agreed that the study would be financed with PPF funds. Upon completion by March 31, 1993, the study will be communicated to the Bank for comments and subsequently, legislative and regulatory measures which reflect the recommendations of the study as determined in agreement between the Bank and the Government will be put into effect. Assurances to this effect were obtained during negotiations (para 8.01 (a)).

D. Sector Strategy

2.59 The Government's long-term objectives for the forestry and environment sector, stated first in its 1976-1980 Development Plan and reiterated periodically, consists mainly of: (a) preserving the ecological balance and maintaining the long-term productive potential of the Gabonese forest; and (b) increasing the contribution of the forestry sector to the national economy through the rational management and conservation of existing forest resources. To date, however, the Government has not developed a clear strategy to achieve its declared objectives. Nevertheless, to its credit, it has initiated policies and taken steps to address some of the prevailing problems in the sector. It has recently established a task force on forestry to review the incentive structure for logging operations and oversee the preparation of a Sector Development Policy (LPGFE - Annex 4) which would set the stage for the establishment of:

- (a) a land use plan to delimitate boundaries between nature reserves, protected watersheds, commercial logging sites, and agricultural land;
- (b) a forest management action plan to: (i) define the role of private concessionaires; (ii) develop new procedures and guidelines to grant concessions and exploitation permits; (iii) promote forest protection and enforcement policies; and (iv) promote incentives which encourage the efficient utilization of forest resources consistent with conservation objectives;

- (c) a wildlife conservation strategy in order to preserve its long-term potential; and
- (d) an awareness campaign to improve people's understanding of the need to safeguard the country's natural resource base.

The LPGFE was finalized during negotiations (para 2.68) and a signed copy was presented to the Bank on June 1, 1992.

2.60 Most of the policies envisaged by the Government have been confronted with severe implementation problems, mostly due to the weak planning and operational capacity of institutions in the sector, namely MEF and METPN, and therefore have not yet had a significant impact on the sector.

2.61 At the same time, the Government is committed to policy reforms in the forestry sector introduced under the Bank-supported SAL, notably the restructuring of SNBG. The prescribed measures are expected to go some way toward removing the distortions generated by SNBG and improving the competitiveness of the country's forest resources. In addition, the Government has agreed to a major restructuring of MEF with a view to establishing an organizational structure conducive to increased efficiency and cost-effectiveness in the management and conservation of the country's forest and wildlife resources. The restructuring and strengthening of MEF and the restructuring of SNBG are key elements in the fulfillment of the proposed strategy and would, therefore, be supported by the proposed project.

E. Donor Activities in the Forestry and Environment Sector

2.62 Because of its high per capita income, Gabon has received modest donor assistance. The small emphasis placed on the environment in Gabon is reflected in the lack of investment in environmental projects. A study done by the International Union for the Conservation of Nature (IUCN) and financed by EEC outlines potential areas of action (creation and maintenance of reserves) that could be susceptible to funding. The proposed Bank project would draw on the IUCN recommendations and serve as a catalyst for donor involvement in environmental projects. Still, to date the forestry and the environment sector has received assistance from:

- (a) The European Community (EEC) which supports a reforestation project in the Moyen Ogooué region and conducts experiments on the improvement of agro-forestry techniques. EEC is also supporting a regional project for the rational utilization and the conservation of forests in central Africa.
- (b) The French Ministry of Cooperation and Development which is financing a forest management project in the Estuaire region consisting in reforestation activities, the study of prospects for controlled natural regeneration, and silvicultural operations. The French cooperation will also undertake a major assessment of the forestry sector as part of the Tropical Forestry Action Plan (TFAP).
- (c) The Canadian International Development Agency (CIDA) which is funding a few but potentially important studies on forest inventories and wood technologies.
- (d) The World Wildlife Fund US (WWF US) has recently approved funding for a five-year program aimed at (i) improving the

management of existing reserves and establishing a new protected area in the North-East; and (ii) providing institutional support for the Wildlife Department (DFC). Activities envisaged under the WWF US program would be made an integral part of the proposed Bank project.

2.63 At the donors meeting held in Libreville on July 8, 1991, it was agreed by all the donors (IBRD, FAC, UNDP, WWF US, EEC, Germany) that the Bank-prepared project would serve as the basis for channeling all investments in the sector. It was noted that this agreement was already being put in practice as the EEC, WWF US and the German Cooperation were financing activities and/or actions identified in the Bank-prepared project. Furthermore, at that meeting UNDP agreed, in principle, to finance the National Environmental Action Plan (NEAP) envisaged in the Bank project. The NEAP would address all environmental issues and would result in a comprehensive "Schéma Directeur" for implementing the Government's mid- to long-term environmental strategy (ecosystems, urban and rural environments, local participation efforts, pollution, wastes, etc.).

F. Bank Involvement in Gabon

2.64 After a ten-year absence, the Bank resumed lending to Gabon with a SAL in 1988. The Government accepted the challenge of undertaking significant reforms to: (a) reinforce public sector resource management; (b) rationalize the performance of public enterprises; (c) introduce incentive policies to promote private sector activity, especially among small and medium enterprises; and (d) reformulate sectoral policies to encourage growth in the non-oil sectors on an environmentally sound basis. Measures envisaged under the program progressed satisfactorily, and release of the second tranche was approved in December 1989.

2.65 As part of the overall strategy for Gabon, the Bank is supporting a road maintenance project designed to strengthen the institutional and operational performance of the road sector, and introduce new policies and measures to improve the efficiency of the use of road maintenance resources. The Bank is also supporting a technical assistance (TA) project aimed at strengthening key ministries in critical areas during the adjustment period. The objective of the TA project is the effective training of local counterpart staff in economic management and public investment programming. Suitable Gabonese have been identified and recruited to be trained by the team of expatriate technical assistants in the Ministry of Planning and the Institut d'Economie et des Finances with a view to: (a) transfer more responsibility for the management of the economy to nationals over the medium- to long-term; and (b) reduce the cost of resident technical assistance. The project also provides support for the promotion of small and medium scale enterprises.

2.66 IFC has helped the private sector in Gabon implement projects in three key sectors of the economy. The objectives of these projects were to rationalize and diversify forestry production, reduce transportation and production costs for the manganese sector, and increase production in the oil sector. IFC's net commitments to Gabon, as of February 1992, stood at US\$136.9 million, making the private sector in Gabon one of the corporation's largest client in sub-saharan Africa.

2.67 In October 1991, the IMF approved a stand-by credit of SDR 28 million (about US\$38 million) in support of Gabon's economic and financial reform program for 1991-92. The program aims at (a) generating growth in the non-oil sector; (b) reducing balance of payments deficit; (c) encouraging fiscal reform; and (d) reducing budgetary dependence on oil revenues.

G. Lessons Learned

2.68 Because the proposed project would be the first to be financed by the Bank in the Gabonese rural sector, preparation efforts capitalized on experience gained in other countries (Côte d'Ivoire, Central African Republic, Congo) during the preparation and implementation of similar operations. In particular, the need to fully involve in the project design, the participation of not only Government institutions but NGOs and local communities alike was stressed during the preparation process. In this regard, an Environmental Impact Assessment of the project was initiated before appraisal so as to: (a) record experiences of past development efforts in the sector; (b) provide a platform to get input from the population concerned by the project; and (c) fully internalize the project at all levels of society. Subsequently, project design was fine tuned to include a mitigation plan for actions that could pose potential risks to the environment. Other lessons incorporated in project design include significant measures in the area of fiscal reform, institutional strengthening, and forestry and environmental legislation. The underpinnings of the above measures are highlighted in the Statement of Sector Development Policy (Lettre de Politique Générale pour le Secteur Forêts et Environnement) discussed and finalized during negotiations (para 2.59).

III. THE PROJECT

A. Project Rationale, Objectives and Description

Rationale

3.01 Forestry has traditionally played a very important role in the Gabonese economy, particularly before the oil boom, by providing foreign exchange and revenues to the Government. In 1986, forestry represented 13 percent of export value, second only to oil. However, in recent years, growth in the forestry sector has been hampered by the lack of a clear forest resource management strategy which resulted in: (a) the overexploitation of the First Zone (the closest to the port); and (b) inefficiencies in forestry institutions and the parastatal in charge of marketing Okoumé (the country's main timber resource).

3.02 The decline in oil revenues over the years, coupled with the depletion of the coastal zone has led the Government to place a central emphasis on the forestry and environment sector and think of ways by which the sector can be revitalized while at the same time ensuring that conservation goals are not neglected. The proposed project would support the policy and structural measures undertaken by the Government to improve the competitiveness of the sector while safeguarding forest resources.

3.03 Gabon has a substantial reservoir of plant and animal wildlife and a number of ecosystems. So far, pressure on the ecosystems by either agriculture or population has been minimal. However, the potential for environmental degradation in certain areas is strong. To preserve its rich and diverse natural resource base, the Government, in 1985, has set up a Ministry in charge of the environment and has, in theory, drawn up a sound legal framework for its protection. However, most of this legislation has not been enforced.

Objectives

3.04 The project would: (a) contribute to a better use of forestry resources by implementing, on a pilot basis, a management plan in the depleted First Zone; (b) to this end, reinforce the strategic planning and

operational capacity of government institutions in the sector through the restructuring and strengthening of MEF and METPN; (c) resume forestry and environment research activities; (d) make forestry and environment training more practical and tailored to the needs of the private sector and to conservation needs; (e) prevent environmental degradation; and (f) support the Government in the creation and maintenance of wildlife reserves.

3.05 Environmental Impact Assessment (EA). Although the project was initially classified under the environmental category D, indicating a project with positive impact on the environment, the Bank and the Gabonese Government decided to undertake an Environmental Impact Assessment of the project. In FY92, the category D classification was abolished. The project was subsequently reclassified as a category A project. The EA was initiated to ensure the soundness of the project and confirm that activities proposed under the project will not impact negatively on the environment and on local communities in the project area. The EA was initiated in June 1991 by a working group (Noyau Permanent de Travail) comprised of staff from key ministries (MEF, METPN, MPE), and two local consultants (one Environmentalist, and one Sociologist) working closely with an internationally recruited environmentalist. Local NGOs (Club des Ecologistes et Naturalistes Africains-CENA, Front des Ecologistes Gabonais-FEG, Inter Assistance pour le Développement Rural-IADR) and community groups were involved from the beginning. The local media (press, radio), seminars and large expanded meetings where members of the public were invited (réunions élargies) provided a platform through which all interested parties could comment on the project viability/necessity and probable impacts as designed prior to appraisal.

3.06 The EA revealed that the project could have two significant impacts: (a) a possible increase in wildlife poaching (already a serious problem in Gabon) in the project area; and (b) localized pressure on land in areas with relatively high population density, notably around plantation sites envisaged in the project. A mitigation plan was developed for each of these potential impacts and its measures and costs were incorporated into the project design. A detailed description of the EA process is available in the Environmental Impact Assessment Report. A summary of the EA report was distributed to Executive Directors on April 17, 1992. This summary is also available in Annex 5.

Project Description

3.07 The project would consist of the following components:

- (a) Institutional Strengthening. Assistance would be provided in restructuring MEF to streamline and better define the functions of its directorates; and in supplying other resources (field housing, offices, vehicles, etc.) to increase MEF and METPN operational, planning, and monitoring capabilities, and more importantly increase their presence in the field so as to enable them to better supervise logging operations. In addition, the Directorate of Game and Wildlife at MEF would be provided with the resources needed to:
 - (i) improve its operational capacity;
 - (ii) enforce legal issues related to the environment;
 - (iii) increase its presence in the field; and
 - (iv) prevent poaching and other actions which could have a negative impact on the environment.
- (b) Forestry and Environment Training. Activities under this component would consist of (i) promoting a forestry and environment training program tailored to the needs of the private sector; (ii) providing

professional training and retraining for forestry graduates; and (iii) implementing a management and conservation plan for the Mondah Forest.

- (c) Forestry and Environment Research. Activities envisaged under this component would center on: (i) genetic improvement of Okoumé trees; (ii) silvicultural operations on natural forest and plantations with the view of bringing about durable and rational management of forest resources; and (iii) stabilization of agricultural production systems around plantation sites through agroforestry techniques--this need was highlighted during the EA process. Some equipment and refrigeration facilities would be provided to the National Arboretum to ensure the conservation of its collection of plant species.
- (d) Forest Inventory and Rehabilitation. Project support would involve the preparation and implementation of a management plan subsequent to the rehabilitation and protection of 40,000 ha of natural Okoumé stands identified from an inventory of 275,000 ha in the coastal zone; and rehabilitation of 5,000 to 6,000 ha of artificial Okoumé stands.
- (e) Creation and Maintenance of Reserves. This component concerns the protection of the Moukabala and Setté-Cama reserves and provision of infrastructure for the creation of additional reserves. In concert with the World Wildlife Fund (WWF), the reserves would be strengthened and, in time, be opened for eco-tourism purposes.

B. Detailed Features

3.08 The project would be carried out over five years (1993-1997). It would be the first phase of a long-term program. The components are described below and more details are given in the project preparation report and associated working papers.

(a) Institutional Strengthening

3.09 The General Directorate of Waters and Forestry (DGEF) would be restructured in order to reduce the overlapping of institutional functions, and to increase its operational and planning capacity and its presence in the field. The restructuring plan would mainly consist of regrouping all central directorates (9) into three directorates, namely the Directorate of Forestry, the Directorate of Fisheries, and the Directorate of Wildlife. Coupled with the merging would be the progressive transfer of staff from headquarters to regional inspection which, under the new plan, would be given the status of central directorates. The submission to the Bank of an acceptable staffing plan including a timetable for the implementation of field staff transfer would be a condition of Loan effectiveness (para 8.02 (c)).

3.10 The project would finance the construction and/or rehabilitation of offices at MEF's headquarters and in the field. It would also finance the construction and/or rehabilitation of housing in selected regional services (Estuaire, Ogooué Ivindo, Ogooué Lolo, and Moyen Ogooué). A total of 1730 m² would be constructed and 830 m² rehabilitated.

3.11 To increase staff mobility, the project would fund the purchase of vehicles for the central and regional offices. Furthermore, the project would induce competent staff to move from central to regional offices, by installing in regional offices a favorable working environment. Provisions would be made for operating costs of vehicles and maintenance costs of buildings and equipment. However, the Government would be expected to gradually cover these costs, so as to indicate its commitment to sustained involvement in the development of the forestry and environment sector. Government would also cover all salary costs.

3.12 Also, the project would support institutions directly responsible for environmental issues, namely DFC and METPN. Training would be provided to staff at DFC and METPN, and to forest rangers. The statistics and documentation service within DFC would be strengthened, and a monitoring unit comprised of staff from both DFC and METPN would be set up to oversee day to day execution of project activities. Provisions would be made to support local environmental assessment efforts and to raise awareness of local communities on environmental issues. In this regard, the project will provide support to local environmental NGOs (Club des Ecologistes et Naturalistes Africains-CENA; Front des Ecologistes Gabonais-FEG; Inter-Assistance pour le Développement Rural-IADR) through the financing of seminars, workshops, and environmental publications. The strengthening of these institutions, working together, would improve their capacity to translate environmental policies into a concrete plan of action and better coordination with other government institutions and the donor community.

3.13 To complement the institutional strengthening process, several studies would be undertaken, notably, the project would provide funding for two feasibility studies; one for the protection of 15 recommended zones (Working paper No 2, Table 3) and the other for a joint training program between the School of Wildlife Studies in Garoua (Cameroon) and the Tropical Ecology Research Institute of Makokou (IRET-Gabon). In addition, a study on the state of the environment in Gabon would be financed and its findings would be updated every 5 years. Finally, studies would be also carried out on: (i) the needs and habits of the forest dwellers; and (ii) the potential for tourism in identified areas.

3.14 Under this component, the project would finance for five years the position of an internationally-recruited Forest Management Specialist (Terms of Reference in Annex 6). In addition to the above resident position, the project would fund five person-months of short-term consultancies.

(b) Forestry and Environment Training

3.15 The forestry training component would provide support to the National School of Waters and Forestry (ENEF). The objective of this component is to improve the quality of training at ENEF so as to increase the relevance of its programs to employment and productivity in the private sector, and assist in the process of defining and implementing a forest conservation strategy. This component would consist of establishing a new training program that will be supplemented by the formulation and implementation, by students, of a management plan for the Mondah forest.

3.16 The training program would have the following key features:

- (i) the restructuring and the revising of the training curricula for the degrees of forestry engineer and forestry technician;
- (ii) the design and implementation of refresher courses for MEF staff;

- (iii) the design and implementation of training programs for mid-level forestry staff and technical agents in the private sector; and
- (iv) the definition and implementation of training curricula with several major environmental protection themes (erosion, soil fertility, water conservation, biodiversity, interface between forest and environment, etc..)

3.17 The overall training curricula would be redesigned around specific technical themes. Incoming students would be required to participate in a short initiation internship in the field before actually starting the first school year. This "stage d'immersion" is important because it helps determine whether a prospective student is ready to meet the challenge of the forest milieu. In addition, periodic practical training in the field and/or in private forestry enterprises would be made an integral part of the overall training program.

3.18 The Mondah Forest covers an area of 8,000 ha. Following a presidential decree dated June 24, 1969, the Mondah Forest was placed under the supervision of ENEF to serve as a practical training ground for forestry students. ENEF was also given the responsibility of implementing a management plan for the forest and undertake a series of research activities in cooperation with IRAF. The proposed project activities would consist of:

- (i) establishing maps of cultivated areas in the Mondah Forest;
- (ii) carrying out an inventory of 8,000 ha; and
- (iii) having students participate in the drawing and implementation of a management plan for the Mondah Forest.

3.19 Under this component, the project would finance vehicles, office, field, and camping equipment, tools, training supplies, short-term and long-term scholarships, and the construction and equipment of a small pilot sawmill. Finally, the project would provide technical assistance for overall support to the component. It would finance for three years the position of an internationally recruited specialist (Terms of reference in Annex 6). An additional nine person-months of specialized short-term consultancies would also be provided by the project.

3.20 Project assistance for this component would be complemented by: (i) German and EEC support for the renovation of school buildings and the provision of additional infrastructure support (vehicles, equipment), and some technical assistance; and (ii) French support in the form of trainers.

(c) Forestry and Environment Research

3.21 The project would provide some support to MEF with a view to strengthen its capacity to implement a limited research program relevant to Gabon's forestry and environment research needs.

3.22 Project activities under this component would center on: (i) genetic improvement of Okoumé trees; (ii) silvicultural operations on natural forest and plantations with the view of bringing about durable and rational management of forest resources; and (iii) stabilization of agricultural production systems around plantation sites through agroforestry technics--this need was highlighted during the EA process.

3.23 Actual field operations, notably agro-forestry, and genetic improvement activities would be carried out in the Mbine research Station. Research work on silvicultural operations would be carried out in the Ekouk

research station. A total of 24 ha of experimental plots would be installed by the project. In addition, the project would assist MEF in the rehabilitation, maintenance, and scientific monitoring of 1000 ha of existing experimental plots.

3.24 To execute the component, MEF would employ specialized consultants or establish contractual arrangements with one or several research institutions such as the Institute for Agronomic and Forestry Research (IRAF). Thirty seven person-months of technical assistance would be provided by the project. Four national researchers (three Foresters and one Agronomist) would be assigned to the project. A limited number of vehicles, equipment, supplies, and research material would be provided by the project.

3.25 The project would also provide funding for the design and compilation of a forest dendrology manual to help forestry agents in the identification and the grading of various timber species. The manual would also be used for tourism and educational purposes. An additional six person-months of technical assistance would be required for this purpose.

(d) Forest Inventory and Rehabilitation

3.26 The main objective of this component is to help the Gabonese Government build-up a permanent forest domain that is rationally managed. This entails: (i) undertaking inventory and other diagnostic activities with a view to "knowing" the forest and what it contains; (ii) planning of forest development and conservation activities (plantations, silvicultural operations, natural regeneration, etc.); and (iii) controlling and optimizing logging activities in order to avoid waste, prevent localized depletion and limit exploitation of suitable areas in a manner compatible with their natural regeneration capacity. Through a pilot operation (40,000 ha out of 5 million ha), the project would train, equip, and assist the forestry service in the initiation of a management plan which could, in the future, be extended to the entire coastal zone.

3.27 Natural Okoumé Stands. The lack of management plans and extensive logging in the First Zone (5 million ha) have led to the partial depletion of the natural forest in that region. Operations under the proposed project would be undertaken and supported by government measures stopping the granting of concessions and logging permits in Zone I. There will be no logging in the project area. Preliminary findings indicate that a total of about 275,000 ha around the city of Foulzém would be suitable for the initiation of such operations. In addition to these operations, a faunal and floral inventory would be undertaken in the 275,000 ha area. This area has been chosen for the following reasons: (a) its proximity to Libreville, allowing easy monitoring and deployment of staff and other personnel; (b) relatively dense population of Okoumé stands; (c) absence of concessions and logging activities; (d) weak population density in the proposed area; and (e) existence of a road network. Activities in the project area would serve as a basis for drawing up a rational management plan for future exploitation and establish a cost-effective program for the rehabilitation of the entire coastal zone. The signing of a Ministerial Arrêté setting aside areas to be rehabilitated under the project would be made a condition of Loan effectiveness (para 8.02 (d)).

3.28 The project would cover, over a five-year period, a total of about 40,000 ha identified from the 275,000 ha and would be implemented as follows:

- (i) Identification of pilot area through a review of available material at a scale of 1/50,000. This material consists in two sets of aerial photographs (1955 and 1982); a complete mapping

of the 275,000 ha; and a ground inventory of the 275,000 ha at 0.75 percent sample density.

- (ii) Ground inventory of 40,000 ha at 6 percent sample density which would be carried out by an inventory brigade comprised of one engineer, 5 technicians, and 5 field teams (for opening up lines and for counting trees). Technical assistance would be provided for inventory design and monitoring.
- (iii) Demarcation of the 40,000 ha required would be done under the supervision of two forestry assistants and would require two teams of nine people for the opening up and the maintenance of artificial limits.
- (iv) Sylvicultural operations on 40,000 ha would be carried out by a team of two forestry assistants, six brigadiers, and 30 workers (three man-days per hectare).
- (v) Construction of four houses and one office at Foulenzem for local technicians and brigadiers, and the purchase of vehicles required for the transport of the labor force.

3.29 Artificial Okoumé Stands. Since the early 1960s, the Government has undertaken with financing from the donor community a program of artificial plantations. Under the program, a total of about 30,000 ha have been planted mainly in the Bokoué and Mvoum regions (Coastal Zone/Zone I). The lack of sylvicultural operations and proper management has hampered growth, and has kept plantations from reaching their full development potential.

3.30 The project would undertake sylvicultural operations on 5,400 ha of salvageable Okoumé plantations out of the total of 30,000 ha planted between 1960 and 1989. Weeding and maintenance operations would take place on 2,000 ha of young plantations, and thinning operations would take place on 3,400 ha of adult plantations. These operations would be initiated to gradually save plantations with development potential. The main area of emphasis would be in the Bokoué, Mvoum, Mbiné, and Haut-Como regions.

3.31 Project activities under this component would be as follow:

- (i) Aerial photography (scale 1/10,000) and photo-interpretation would be done on approximately 3,500 ha in order to cover the total planted area. The identified treatable areas would then be subject to a full ground inventory.
- (ii) Weeding and cleaning operations would require nine man-days per ha and would be implemented by a team of three people.
- (iii) Marking and thinning would be implemented under the authority of a forestry officer assisted by two technicians and six laborers at a pace of five ha per day for marking and 1/3 ha per day for thinning.
- (iv) Rehabilitation of existing access roads as well as means of transportation to increase personnel mobility and work efficiency.

(e) Creation and Maintenance of Reserves

3.32 To support the creation and maintenance of reserves the project, in concert with WWF US efforts, would identify and protect 800,000 ha of

forest land. These reserves (Moukalaba, Sette Cama) would be strengthened and, in time, opened for eco-tourism purposes. In this regard, the project would finance perimeter tracks, markers, the construction and/or rehabilitation of buildings (housing and offices), vehicles, equipment, and some incremental operating costs. The project would also finance mapping studies and surveys. This component would be carried out through DFC with the cooperation of the World Wildlife Fund.

**IV. PROJECT COSTS, FINANCING, PROCUREMENT,
DISBURSEMENT, ACCOUNTS, AUDITS, AND REPORTING**

A. Project Costs

4.01 The total cost of the proposed project over the 1993-97 period, including all incremental capital and recurrent expenditures, is estimated at CFAF 10.6 billion (\$38.2 million), of which CFAF 6.1 billion (\$22.2 million) or 58.1 percent of total cost in foreign exchange and about CFAF 479 million (\$2.1 million) or 5 percent in taxes and duties.

4.02 Base costs have been estimated at December 1991 prices using the rate of exchange of CFAF 273 prevailing at that date. Physical contingencies have been allowed on investment and operating cost items, except for technical assistance and staff salaries. The average physical contingency amounts to 6.2 percent of base costs, with individual rates ranging from 5 percent to 10 percent. Price contingencies have been applied to base costs over an estimated implementation period of five years (1993-1997). Price contingencies on foreign exchange costs based on Bank's projections of international price increases have been included at an average of 3.7 percent from 1993 to 1997. Price contingencies on local costs are based on annual price increases of 4.0 percent for 1993, 1994, and 1995, and 5 percent thereafter to reflect current inflation trends in Gabon. Total price contingencies amount to 21.3 percent of base costs.

4.03 Project costs are summarized below and detailed estimations for each component are given in Annex 8 and Working Paper No. 3.

Project Cost Summary

	Local ----- (CFAF million)	Foreign	Total	Local ----- (US\$ million)	Foreign	Total	%Foreign Exchange	% Total B. Costs
A. Institutional Strengthen.								
1. Management Support	188.7	427.7	616.2	0.7	1.5	2.2	69.4	7.4
2. DGEF	1091.0	1613.9	2704.9	3.9	5.8	9.7	59.7	32.5
3. DFC	476.7	563.0	1039.6	1.7	2.0	3.7	54.2	12.5
4. DGEN	<u>169.3</u>	<u>243.7</u>	<u>413.0</u>	<u>0.6</u>	<u>0.9</u>	<u>1.5</u>	<u>59.0</u>	<u>5.0</u>
Sub-Total	1925.6	2848.3	4773.9	6.9	10.2	17.2	59.7	57.4
B. For/Env. Training (ENEf)	181.7	447.2	628.9	0.7	1.6	2.3	71.1	7.6
C. For/Env. Research	255.9	332.1	588.0	0.9	1.2	2.1	56.5	7.1
D. Forest Rehabilitation								
1. Natural Okoumé Stands	661.8	340.9	1002.7	2.4	1.2	3.6	34.0	12.0
2. Plantations	<u>569.3</u>	<u>54.4</u>	<u>623.7</u>	<u>2.0</u>	<u>0.2</u>	<u>2.2</u>	<u>8.7</u>	<u>7.5</u>
Sub-Total	1231.1	395.3	1626.4	4.4	1.4	5.9	24.3	19.5
E. Reserves								
1. Moukalaba	89.0	320.8	409.8	0.3	1.2	1.5	78.3	4.9
2. Sette Cama	<u>161.0</u>	<u>140.3</u>	<u>301.3</u>	<u>0.6</u>	<u>0.5</u>	<u>1.1</u>	<u>46.6</u>	<u>3.6</u>
Sub-Total	250.0	461.1	711.1	0.9	1.7	2.6	64.8	8.5
Total Baseline Costs	<u>3844.2</u>	<u>4484.1</u>	<u>8328.3</u>	<u>13.8</u>	<u>16.1</u>	<u>30.0</u>	<u>53.8</u>	<u>100.0</u>
Physical Contingencies	201.8	311.1	512.9	0.7	1.1	1.8	60.7	6.2
Price Contingencies	<u>403.1</u>	<u>1367.5</u>	<u>1770.6</u>	<u>1.5</u>	<u>4.9</u>	<u>6.4</u>	<u>77.2</u>	<u>21.3</u>
Total Projects Costs	<u>4449.2</u>	<u>5162.7</u>	<u>10611.9</u>	<u>16.0</u>	<u>22.2</u>	<u>38.2</u>	<u>58.1</u>	<u>127.5</u>

B. Project Financing

4.04 Project financing is presented in the following table.

Financing Plan by Category of Goods and Services
(US\$ million)

	<u>IBRD Amount</u>	<u>EEC Amount</u>	<u>Govt Amount</u>	<u>WWF Amount</u>	<u>Other Amount</u>	<u>Total Amount</u>	<u>For. Exch.</u>	<u>Local (Exclu. Taxes)</u>	<u>Duties and Tax</u>
Civil Works	2.1	0.9	0.0	0.0	0.2	3.2	1.6	1.5	0.0
Materials & Equip.	2.1	1.5	0.0	0.5	0.3	4.4	3.1	1.3	0.0
Vehicles	4.2	0.6	1.7	0.0	0.5	7.0	5.1	0.2	1.7
TA/Service Contracts									
- Manag. Asst.	4.9	0.0	0.0	0.6	1.5	7.0	6.7	0.3	0.0
- Forest Inventory	5.0	0.7	0.0	0.0	0.0	5.7	1.4	4.4	0.0
- Studies	0.3	0.0	0.0	0.0	0.0	0.3	0.3	0.1	0.0
- Fellowships/Train.	2.0	0.0	0.0	0.0	0.1	2.1	1.4	0.7	0.0
Operating Costs	1.6	0.6	4.4	0.6	0.9	8.2	2.4	5.7	0.0
PPF	<u>0.3</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.3</u>	<u>0.2</u>	<u>0.1</u>	<u>0.0</u>
Financing Req. Share of Fin. (%)	22.5	4.3	6.2	1.7	3.4	38.2	22.2	14.3	1.7
With Taxes	59.0	11.0	16.0	4.0	8.0	100%			
Without Taxes	62.0	12.0	17.0	5.0	9.0	100%			

4.05 A number of donors including FAC, Japan, AfDB, the Federal Republic of Germany, and BADEA, have expressed interest in financing specific activities under the proposed project. These sources are being explored, and the financing plan will be confirmed prior to implementation.

4.06 The proposed loan of \$22.5 million equivalent would finance about 62 percent of project costs (net of taxes). The Government's financial contribution to the project would include 100 percent taxes and duties and recurrent expenditures on an increasing basis starting at 30 percent in PY1 and reaching 90 percent in the last year of the project. The Government would channel its contribution through a project account. The opening of this account and evidence of initial deposit of CFAF 150 million would be a condition of Loan effectiveness (para 8.02 (e)).

C. Procurement

4.07 The proposed procurement arrangements are detailed on page 27. During negotiations, assurances were obtained from the Government that it will respect these arrangements and apply procurement procedures in accordance with Bank guidelines and that progress reports would include monitoring of the various aggregate amounts and ceiling (para. 4.13). The Ministry of Waters and Forestry would be the executing agency responsible for carrying out project activities, including all procurement.

4.08 Civil works for the construction of buildings (housing, offices) at the central and regional levels are too small and too scattered to attract international competitive bidding. Contracts for these works, each not exceeding US\$ 200,000 equivalent, would therefore be awarded through Local Competitive Bidding (LCB) procedures. These procedure have been reviewed and found acceptable by the Bank. There are enough contractors in the country to provide for adequate competition. Foreign contractors would, however, be eligible to bid. Total Bank financing under LCB for the civil works contracts is estimated at the equivalent of US\$ 2.1 million.

4.09 Contracts for vehicles and equipment would be grouped into lots to the extent possible and those in excess of US\$ 200,000 would be awarded on the basis of International Competitive Bidding (ICB). LCB, using procedures acceptable to the Bank, would be used for procurement involving contracts of less than US\$ 200,000 but greater than US\$ 50,000, up to a total of US\$ 0.2 million over the life of the project. Contracts for small items of equipment under US\$ 50,000 each, up to a total of US\$ 200,000, that cannot be grouped under the above procedures may be procured by local shopping (minimum three quotations).

4.10 Service contracts for the provision of Forest Inventory and rehabilitation would be awarded through Limited International Bidding (LIB) given their specific nature and the limited number of contractors. The established list of contractors would be subject to prior review by the Bank. Consultants and technical assistance personnel financed by the Bank will be selected in accordance with Bank guidelines. Studies, training, and audits are included in that category.

4.11 Incremental operating costs, including staff travel allowances, vehicle operation and maintenance, equipment and office costs, given their nature, would not be subject to competitive bidding. However, strict budgetary and expenditure control will be applied.

4.12 Local Competitive Bidding would include local advertising, eligibility of foreign bidders, public opening of bids and award to the lowest bidder. A minimum of four bids will be required. Procurement procedures for Bank-financed works and goods contracts and bidding packages estimated to cost over US\$ 100,000 as well as technical assistance would be

subject to prior review by the Bank as would the award of the contract. Works, goods, and services for contracts below US\$ 100,000 and above US\$ 30,000 would be subject to post-review in accordance with paragraphs 3 and 4 of the guidelines. Random post review for goods, works, and services contracts below US\$ 30,000 would be made by Bank staff on supervision missions and during annual audits and based on certified statements of expenditures (SOE).

4.13 Procurement information would be collected and included in the semi-annual progress report to be prepared by the project management so as to update cost estimates and timing of procurement actions. In particular, various aggregate amounts and ceilings would be monitored. Prompt reporting of contract award information would also be realized and a completion report would be prepared within six months of the Loan's closing date.

Summary of Proposed Procurement Arrangements
(US\$ million equivalent)

Project Element	Procurement Method				Total
	ICB	LCB	Other	N.B.F	
1. Works					
1.1 Buildings		2.1 (2.1)	-	1.1g/	3.2 (2.1)
2. Goods					
2.1 Vehicles/Equipment	5.9 (5.9)	0.2 (0.2)	0.2 (0.2)	5.1b/	11.4 (6.3)
3. Consultancies					
3.1 Management Support	-	-	4.9 (4.9)g/	2.1e/	7.0 (4.9)
3.2 Studies	-	-	0.3 (0.3)	-	0.3 (0.3)
3.3 Training	-	-	2.0 (2.0)	0.1e/	2.1 (2.0)
4. Service Contracts					
4.1 Forest Inventory	-	-	5.0 (5.0)g/	0.7f/	5.7 (5.0)
5. Miscellaneous					
5.1 Incremental Operating Costs	-	-	1.6 (1.6)	6.6h/	8.2 (1.6)
5.2 Refinancing of PPF	-	-	0.3 (0.3)	-	0.3 (0.3)
Total	5.9 (5.9)	2.3 (2.3)	14.3 (14.3)	15.7	38.2 (22.5)

Note: Figures in parentheses are the respective amounts financed by the Bank loan.
N.B.F.: Not Bank-Financed

a/ To be financed by EEC and BADEA under their own procurement arrangements

b/ Includes Government, EEC, BADEA, and WWF under their own procurement arrangements

c/ Includes Government, WWF, BADEA under their own procurement arrangements

d/ Consultancies would be procured in accordance with World Bank guidelines

e/ To be financed by BADEA

f/ To be financed by EEC

g/ To be procured through Limited International Bidding in accordance with Bank guidelines

h/ Includes Government, EEC, WWF, and BADEA under their own procurement arrangements

D. Disbursements

4.14 The proposed loan would be disbursed over a period of six and a half years, which corresponds to the standard regional disbursements profile (Annex 9).

Allocation and Disbursement Categories

<u>Category</u>	<u>Amount Allocated</u> (US\$ million)	<u>% of Expend. To Be Financed a/</u>
1. Civil works	2.0	80%
2. Vehicles and Equipment	6.0	100% FE; 80% LE
3. TA/Service Contracts		
a) Management Assistance	4.0	100%
b) Forest Inventory	4.5	100%
c) Studies	0.3	100%
4. Fellowship and Training	2.0	100%
5. Operating Costs	1.1	Declining basis b/
6. PPF Refinancing	0.3	Amount due
7. Unallocated	<u>2.3</u>	
Total	22.5	

a/ of amount net of taxes.

b/ 70% until 12/31/94, 50% until 12/31/96 and 10% thereafter.

4.15 To facilitate project execution, a Special Account equivalent to US\$500,000 representing about 3 months of expenditures would be opened in a commercial bank. The terms and conditions for operating this account were agreed during negotiations. This account would be replenished by the Bank against documented expenditures and upon receipt of withdrawal applications. Disbursements would be fully documented except for expenditures under contracts valued at less than US\$ 30,000 equivalent, local training, and operating costs in which case statements of expenditure (SOEs) would be used. The Bank would not honor direct payment requests below US\$ 30,000 equivalent. Documentation would be held for review by Bank supervision missions and verification by external auditors.

E. Financial Management, Accounts, Audits, and Reporting

4.16 The Project Coordination Unit (PCU) of the Ministry of Waters and Forestry (para 5.02) would be responsible for overall financial control of the project. It would also maintain accounts, prepare disbursement applications, and manage project funding for all components.

4.17 Detailed budgets would be submitted to the Bank for approval prior to the beginning of each implementation year. The project accounts which would be prepared in simple cash basis, would classify expenditures by component for budgetary and management control purposes. There would be tight physical control of vehicles and equipment. Project accounts would be audited according to international standards acceptable to the Bank. The auditor would be required to express an opinion on the reliability of

SOE procedures, the legitimacy of expenditures made out of the special account, the utilization of goods and services financed under the loan, and the standards for record keeping and internal controls. The audited accounts and reports would be submitted to the Bank no later than six months after the end of the financial year (December 31). Assurances to this effect have been obtained during negotiations (para 8.01 (b)).

4.18 DGF, DFC and DGE would each be responsible for monitoring project implementation, including physical and institutional objectives. With assistance from the Project Coordination Unit, each directorate would prepare semi-annual progress reports assessing progress (physical, institutional, budgetary) against agreed annual programs of operations and targets. To this effect, all technical directorates would communicate to the Bank, through the Project Coordination Unit.

V. PROJECT MANAGEMENT AND IMPLEMENTATION

A. Project Management and Implementation

5.01 The Gabonese Government through its Ministry of Waters and Forestry would be responsible for ensuring that the project would be carried out in accordance with provisions of the loan agreement. The project would be implemented through existing institutions/departments, and the responsibility for executing each component or sub-component would rest with the particular institution concerned. The Directorate General of Forestry (DGF) would be responsible for implementing the Forest Inventory and Rehabilitation component and for carrying out the institutional strengthening of its sub-directorates and regional services. The Forestry and Environment training component would be implemented by the National School of Waters and Forestry (ENEF), and the Forestry and Environment research component by the Directorate General of Forestry. The creation and maintenance of reserves would be undertaken by the Directorate of Wildlife (DFC) and WWF US field personnel in concert with the Directorate of Environment (DGE). Overall responsibility for the various studies and the UNDP-funded NEAP would rest with DGE. A preliminary implementation Schedule is presented in Annex 10.

5.02 Overall responsibility for project management and coordination would rest with a Project Coordinator in the Project Coordination Unit to be established. Assurances in this regard have been obtained during negotiations (para 8.01 (c)). The establishment of the PCU and the posting of the Project Coordinator would be a condition of Loan effectiveness (para 8.02 (f)). The Project Coordinator would be assisted by an internationally recruited Forest Management Specialist, a forestry engineer, a financial controller, an accountant, a secretary, and a driver. The Forest Management Specialist would provide specific support to the institutional strengthening component and would give priority to on-the-job training of national staff. In PY2, this specialist would be also in charge of assisting in the preparation of the project's Mid-Term Review (para 5.06). In addition to the above resident technical assistance staff, the project would finance ten person-months of short-term consultancies to strengthen the administrative and financial management capacity of project staff. In particular, these consultancies would help (a) establish, and subsequently apply, appropriate financial and accounting procedures; and (b) train national staff in the use of a computerized accounting and budgetary system. Also, in view of the complexity of the project, five person-months of short-term consultancies (one per annum) would be provided to enable both MEF and METPN to capitalize on supervision tasks undertaken by the Bank, and to gradually strengthen their own supervision capacity.

5.03 To ensure inter-ministerial coordination and periodically assess progress, a Project Coordination Committee (CCP) would be set up and chaired by the Minister of Waters and Forestry. It would include the Project Coordinator, Directors of DGF, DFC, DGE, IRAF, ENEF, the Director of Investment Programs at the Ministry of Planning, a representative of SNBG, the President of the Foresters Syndicate and representatives of local environmental NGOs (CENA, FEG, IADR). The committee would meet at least twice a year to review project progress and address inter-ministerial and other policy issues.

B. Annual Work Programs

5.04 Annual work Programs (AWP) would be prepared by the Project Coordination Unit in conjunction with the concerned technical directorates. The AWP would include: (a) progress to date; (b) the work program for all project components for the coming year; (c) an estimation of staff and equipment needed to achieve project objectives; and (d) the preparation of appropriate budgets. The work programs will be fine-tuned during Bank supervision missions (Annex 11). Assurances were obtained during negotiations that draft Annual Work Programs would be submitted to the Bank for comments before September 30 of each year (para 8.01 (d)). After taking into account Bank comments and approval, the Government would submit a revised Work Program to the Bank for final review and approval by September 30 of each year.

C. Monitoring and Evaluation

5.05 The Project Coordination Unit would have primary responsibility for the monitoring and evaluation of the project. It would be assisted in this task by the already established Permanent Working Nucleus (NPT) comprised of staff from key ministries (MEF, METPN, MPE) and representatives of local NGOs. Monitoring of forestry and environment training and research components would be carried out through the review of quarterly reports from ENEF and IRAF. Monitoring of the NEAP and the various studies would be carried out through quarterly reports from DFC and DGE. Within six months of project completion, MEF would prepare a Project Completion Report acceptable to the Bank.

5.06 Mid-Term Review. A mid-term review would be undertaken in June 1995 to confirm or improve the orientation of project activities. In this regard, a number of key performance indicators to be assessed would be agreed on (Annex 14). In particular, the Review would cover, inter alia: (a) progress in the implementation of policy actions on fiscal and environmental legislation under the Forestry and Environmental Sector Development Strategy; (b) status of studies and the Forest Rehabilitation program; and (c) progress in the redeployment of MEF field staff; (d) evaluation of consultants' performance; and (e) overall project performance against agreed key performance indicators. Assurances to this effect were obtained during negotiations (para 8.01 (e)). As was done during the EA process, a platform would be provided for all interested parties to comment on the project's achievements and/or shortcomings.

VI. PRODUCTION, MARKETS AND PRICES, AND FINANCIAL IMPLICATIONS

A. Production

6.01 Natural Okoumé Stands. Incremental production has been assessed on 40,000 ha of existing young Okoumé stands (15 years). The "without project" hypothesis assumes that annual production would stagnate at 60 m³

per ha. With the project, output is expected to rise to 160 m³ per ha starting in year 30.

6.02 Artificial Plantations. Of a total 30,000 ha of existing plantations, the project would undertake silvicultural operations on 5,400 ha. These operations would consist of weeding and maintenance operations on 2,000 ha of young plantations (7 years) and thinning operations on 3,400 ha of adult plantations (12 years). The "without project" hypothesis assumes that annual output would stagnate at 90 m³ per ha for adult plantations and 50 m³ per ha for young plantations. With the project, output is expected to increase, starting in year 34, from 90 m³ per ha to 360 m³ per ha for adult plantations, and starting in year 39, from 50 m³ to 360 m³ per ha for young plantations.

B. Markets and Prices

6.03 Okoumé, the dominant timber resource in Gabon is marketed by SNBG. Other timber species (Bois Divers) are traded freely. SNBG's marketing abilities and inefficient management practices on Okoumé have greatly hampered the competitiveness of Gabon's timber exports. As stated earlier (para 2.45), SNBG's lack of effectiveness has reduced its financial viability and has increased the vulnerability of private foresters. However, since February 1991, date when SNBG was obligated to implement a major restructuring program, its marketing position has been greatly enhanced. Its services have been very aggressive in finding new markets. In concert with the Ministry of Waters and Forestry, it has led foresters to rationalize production in function of timber demand. Furthermore, there has been an noticeable upswing in the demand for Okoumé as clients who had turned to close substitute of the Okoumé specie in the early 1980s are now demanding more Okoumé as its quality and durability was found to be unparalleled. This increased demand is reflected in figures from 1989 onward. The following table summarizes SNBG's activities from 1984 to 1991.

VOLUMES AND EXPORTS OF OKOUME

	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991 *</u>
Sales (billion CFAF)	42.2	38.1	32.5	32.6	34.3	36.5	38.0	42.7
Log Exports ('000 m ³)	1,012	902	859	901	859	795	1,000	950
Av. FOB price per m ³ (CFAF)	38,700	39,300	35,800	34,300	37,835	36,665	38,000	45,000
Net Gains (minus subsidies) (billion CFAF)	(0.41)	(1.26)	(4.20)	(3.20)	(2.30)	(1.80)	(.70)	(0.6)

* Estimates.

The 20 percent decline in sales from 1984 to 1988 is primarily due to a reduction in export volume and FOB prices. A questionable grading system, coupled with high and inappropriate marketing margins on some timber species, has also contributed to the decline.

6.04 The continuing sluggish market for logs in Western Europe, coupled with increasing ecological and environmental concerns, will limit growth prospects for Gabonese timber exports. However, measures envisaged by the Government would increase the competitiveness of Gabon's forestry sector by: (a) removing institutional and marketing (SNBG) bottlenecks; (b) encouraging first processing activities to promote diversification of

timber exploitation; and (c) preventing the commercial loggers to engage in wasteful cutting practices.

C. Budgetary Implications

6.05 The total Government contribution, as a result of the project would amount to US\$6.2 million (CFAF 1.7 billion). Assurances were obtained during negotiations on the opening by the Government of a project account, and deposit of its share of the project funding quarterly and in advance, based on annual budget and disbursement forecasts for the next three months (para 8.01 (f)). During project execution and after completion, the Government would be expected to maintain adequate funding for the forestry sector. This funding would be primarily used to finance the replacement of vehicles and equipment, and keep an adequate level of maintenance and rehabilitation work in the plantations. Following project completion, MEF and METPN combined recurrent budgets would need to be increased by CFAP 400 million per year to cover incremental cost arising from the project. Appropriate level and timely availability of financial resources for forest management and rehabilitation are requirements for the long-term success of the forest rehabilitation program to be carried out under the project.

6.06 Assuming that no cutting license is granted on areas under the project until natural and artificial Okoumé stands have reached their full development potential, the Government would start generating considerable revenues on 40,000 ha of natural Okoumé stands in PY30, and on 3,400 ha of artificial Okoumé stands in PY34. The volume and value of annual allowable cut is indicated in Annex 12.

VII. BENEFITS, ECONOMIC JUSTIFICATION, AND RISKS

A. Benefits

7.01 The proposed project would improve the management and protection of Gabon's forest resources and its environment. Measures envisaged under the project would help stop overexploitation in the coastal zone and initiate a sound forest management plan for the remaining areas. The project would serve as an important instrument for implementing government policies dealing with forestry and the environment, and would further strengthen the scope of these policies. The project would strengthen MEF and METPN's planning and operational capacity through the implementation of training programs, studies, and the provision of vehicles and equipment and infrastructure. As a result of the National Environmental Action Plan initiated during project preparation, more appropriate conservation policies would be developed and implemented. The project would also encourage private sector involvement in the implementation of activities which would have significant impact on the conservation of the forestry sector, and provide significant employment potential for the rural sector. Through the implementation of a revamped training program at ENEF, the project would make forestry and environment training more relevant to the needs of the private sector and to conservation needs.

B. Economic Justification

7.02 Owing to the diversity of the project components, no attempt has been made to estimate an Economic Rate of Return (ERR) for the project as a whole. Rather, the ERR has been estimated for those activities whose benefits are more readily quantifiable. Notably, rates of return have been calculated for two subcomponents: the Natural Okoumé Stands subcomponent

and the Artificial Okoumé Stands subcomponent. They represent about 20 percent of project costs.

7.03 The assumptions used in the calculation of the ERR and for the sensitivity analysis of selected subcomponents are given in Annex 12. The ERR for the Natural Okoumé Stands subcomponent is estimated at about 18 percent and its net present value (NPV) discounted at 10 percent (the estimated opportunity cost of capital in Gabon) is CFAF 2 billion. If investment costs increase by 10 percent or benefits decrease by 10 percent, the ERR falls to 16 percent. With both adverse variations, the ERR falls to 15 percent. The ERR for the Artificial Okoumé Stands subcomponent is estimated at 13 percent and the NPV discounted at 10 percent is CFAF 360 million. If investment costs increase by 10 percent or benefits decrease by 10 percent, the ERR falls to 12.4 percent. If both adverse variations are taken into account, the ERR decreases to 11.7 percent.

C. Risks

7.04 The main risk of the project lies in the fragility of institutions in the sector. The restructuring of MEF and the reassigning of some of its staff to field offices, represent sensitive issues, but need to be undertaken if the competitiveness of the wood sector and the envisaged conservation objectives are to be attained. To reduce the risk, MEF would be formally restructured prior to negotiations and an acceptable field staff transfer plan would be made a condition of loan effectiveness. Also, the shortage of adequately trained staff will be minimized through improved training programs and technical assistance.

7.05 With regard to the environment, Government's capacity to follow-up on environmental issues and the willingness of private foresters to participate in forest conservation programs pose potential risks. The NEAP would clearly establish each party's role and help formulate policies to better protect the environment.

7.06 A final risk concerns the timely availability of counterpart funding which, in the past, has been consistently delayed and inadequate for the forestry and environment sectors. This risk is minimized, however, by the fact that the Government has come to realize the importance of forestry and the environment and, therefore, is committed to supporting the sector. Also, counterpart funds are being made available in a timely fashion in other Bank-financed projects (Technical Assistance, Road maintenance) in Gabon. In addition, considerable efforts were deployed to involve the Planning and Finance Ministries since the early stages of project preparation, to ensure that the Government's contribution is properly provided for under the investment program.

VIII. ASSURANCES, CONDITIONS AND RECOMMENDATION

8.01 Assurances obtained during negotiations

- (a) The Government would complete its fiscal study by March 31, 1993 and take measures required to implement the study's recommendations as agreed with the Bank (para 2.58);
- (b) Audited accounts and the audit reports would be submitted to the Bank within six months of the end of each fiscal year (para 4.17);
- (c) Responsibility of daily project management would be entrusted to the Project Coordination Unit located within the Ministry of Waters and Forestry (para 5.02);
- (d) Detailed programs of operations and budgets would be submitted annually to the Bank for review and approval (para 5.04);
- (e) A Mid-Term Review would be undertaken by June 30, 1995;
- (f) The Government would open and maintain a project account in local currency and deposit into it its share of the project funding quarterly and in advance, based on annual budgets and disbursement forecasts for the next three months (para 6.05);
- (g) The Government would complete its National Environmental Action Plan by June 30, 1993.

8.02 Conditions of Loan Effectiveness

- (a) Adoption and promulgation of the environmental law (Loi Relative à la Protection et à l'Amélioration de l'Environnement) (para 2.33);
- (b) Signature of two decrees defining the forest areas which may be exploited as well as the specific conditions for exploitation (para 2.33)
- (c) Submission to the Bank of an acceptable staffing plan resulting from MEF restructuring including a reasonable timetable for the implementation of field staff transfer (para 3.09);
- (d) Signature of a Ministerial arrêté setting aside areas to be rehabilitated (para 3.27);
- (e) Opening of a project account and evidence of initial deposit of CFAF 150 million (para 4.06);
- (f) Establishment of the Project Coordination Unit and posting of the Project Coordinator (para 5.02).

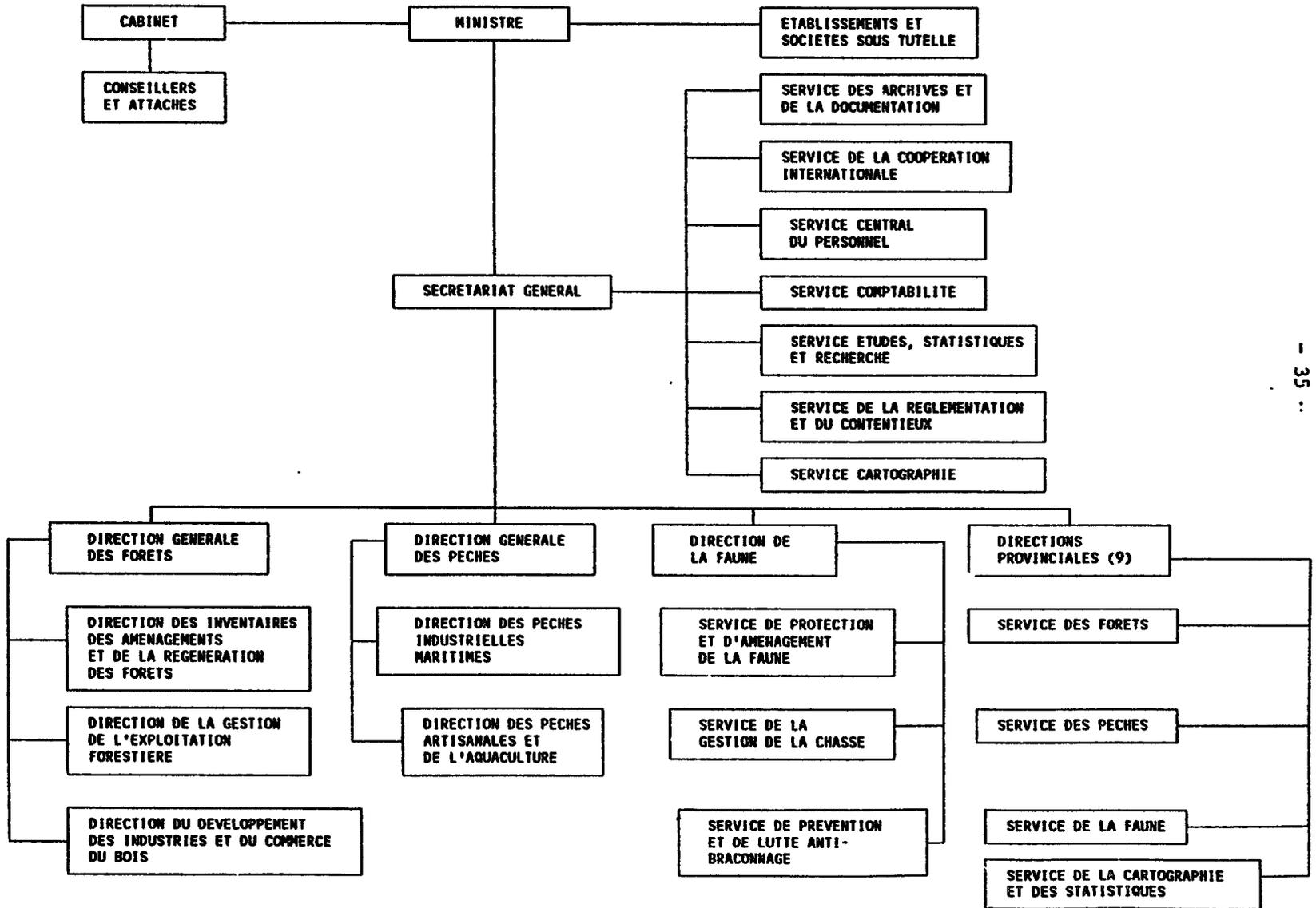
8.03 Recommendation

With the above agreements, the project would be suitable for a Bank loan of US\$22.5 million equivalent to the Gabonese Republic.

GABON

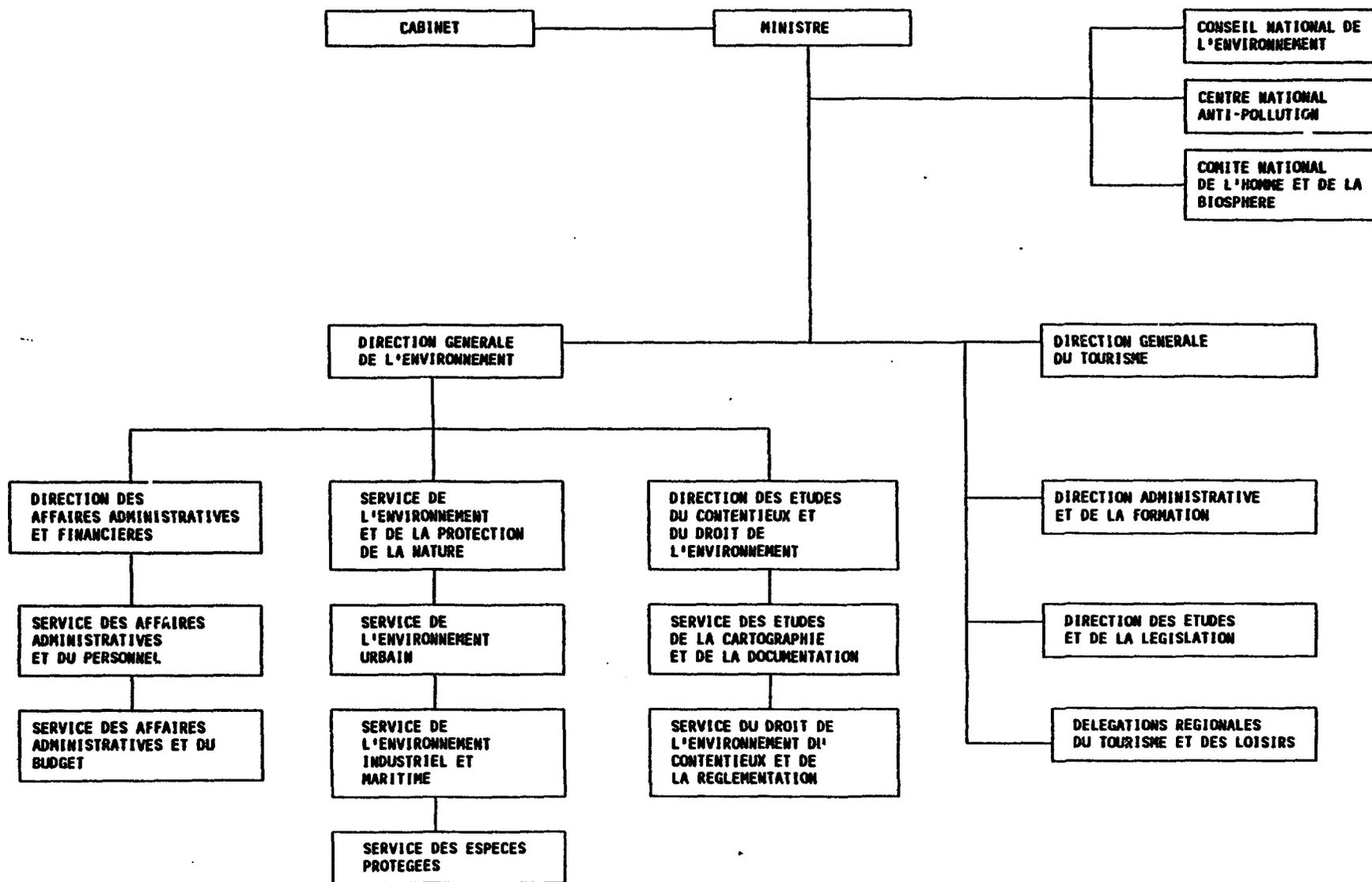
FORESTRY AND ENVIRONMENT PROJECT (PFE)
MINISTRY OF WATERS AND FORESTRY (MEF)

ORGANIZATIONAL CHART



**FORESTRY AND ENVIRONMENT PROJECT (PFE)
MINISTRY OF ENVIRONMENT, TOURISM AND NATIONAL PARKS (METPN)**

ORGANIZATIONAL CHART



THE GABONESE REPUBLIC
FORESTRY AND ENVIRONMENT PROJECT
STUDY OF FOREST FISCALITY
Terms of Reference

Objectives

This study, which has been requested by the Government, would have three objectives:

1. To recommend how the present system of forest fiscality can be rationalized and simplified.
2. To determine if the current level of forest fees and taxes is too high, causing undue strain on the logging firms, or too low, leading to wasteful logging practices and loss of potential Government revenue, or about right.
3. To arrange for a concession allocation by international competitive bidding.

These three objectives will be dealt with in turn.

1. Rationalization and Simplification of Forest Fiscality System

Confirm or modify the recommendations made during December 1991 appraisal mission.

2. Level of Forest Fees and Taxes

2.1 Direct Evidence

For three logging concessions (hypothetical or - preferably - real), situated in accessibility Zones I, and II respectively, estimate the following:

2.1.1 Costs

- (a) Costs in connection with obtaining the concession, including the costs of prospecting, mapping and inventory.
- (b) Road construction, felling, crosscutting and transport to roadside.
- (c) Transport to port. (To simplify matters, it will be assumed that log export and not log processing is the production objective, as it generally is in Gabon.)
- (d) Area- and volume-based fees and taxes, including the log export tax.
- (e) Other relevant costs.

2.1.2 Revenues

2.1.3 Rate of return

Determine the rates of return p.a. in the three zones in real terms, i.e. excluding inflation, and advise on whether these rates are likely to remain attractive to the concessionaires in the long run.

2.2 Indirect Evidence

Provide information on entry into and exit from the logging sector in Gabon. How many of the exits were by bankruptcy? How were the bankruptcies distributed according to Zone?

3. Concession Allocation by International Competitive Bidding

The study would take place during a period of six months. The report would be written in French.

MINISTERE DES EAUX ET FORETS

REPUBLIQUE GABONAISE

CABINET DU MINISTRE

UNION-TRAVAIL-JUSTICE

LETTRE DE POLITIQUE GENERALE
POUR LA FORET ET L'ENVIRONNEMENT

I. INTRODUCTION

Les grandes lignes de la politique du GABON dans les domaines de la Forêt et de l'Environnement ont été définies dans le cadre de diverses réflexions engagées par le Gouvernement au niveau des deux secteurs.

En ce qui concerne le secteur des Eaux et Forêts, cette politique est fondée sur la Loi 1/82 du 22 Juillet 1982 dite Loi d'Orientation en matière des Eaux et Forêts dont les grandes lignes sont reprises dans les différents plans de développement adoptés par le Gouvernement. Les journées de Réflexion sur les Eaux et Forêts organisées à Libreville en mai 1987 ont permis de mieux préciser les grands axes de cette politique.

L'objectif général visé par cette loi est de promouvoir et de développer, dans un cadre global et cohérent d'aménagement du territoire, une gestion rationnelle des ressources forestières, fauniques et halieutiques afin d'accroître la contribution du secteur au développement économique, social, culturel et scientifique du pays.

En matière d'Environnement et sur la base des recommandations de la Conférence des Nations Unies sur l'Environnement tenue à Stockholm (Suède) en 1972, le Gouvernement a mis au point une politique nationale de protection de la nature. Cette politique s'est matérialisée par la création et la structuration progressive du Ministère de l'Environnement et de la Protection de la Nature, chargé des missions de conception, d'élaboration et de mise en oeuvre de la politique nationale dans ce domaine.

Le premier Colloque National sur l'Environnement tenu à Makokou en 1981 a eu pour tâche d'approfondir la compréhension du concept environnemental et de préciser les grandes orientations de la politique en matière d'environnement, lesquelles s'articulent autour des quatre missions essentielles suivantes:

- connaissance du milieu;
- aménagement et conservation des ressources;
- lutte contre les pollutions et nuisances;
- éducation et formation en matière d'environnement.

D'une manière générale, la politique du GABON dans les domaines de la Forêt et de l'Environnement vise à assurer une gestion soutenue et durable qui garantisse la conservation des ressources et des écosystèmes afin de contribuer à améliorer le cadre et les conditions de vie des populations gabonaises.

Enfin, cette politique s'inscrit dans le cadre de la politique d'ajustement et de relance économique adoptée par le Gouvernement et dont les principes de base sont l'économie de marché, la réorientation des interventions de l'Etat et la réorganisation des services publics.

II. ETAT ACTUEL DE L'ENVIRONNEMENT ET DIAGNOSTIC DU SECTEUR DES EAUX ET FORETS

1/ - Importance des ressources

Le Gabon regorge d'importantes ressources naturelles qu'il importe de gérer rationnellement pour prévenir les menaces qui pèsent sur leur conservation et assurer un niveau soutenu de revenus.

a) Importance écologique

Autant par la faune que par la flore, le GABON constitue le sanctuaire d'une diversité biologique exceptionnelle dont la richesse est l'une des plus importantes de toute la forêt tropicale africaine.

La superficie du GABON est de 267.000 km² et la forêt couvre environ 85% de cette superficie. Avec une population estimée à 1.360.000 habitants, le GABON est ainsi au premier rang des pays d'Afrique pour la surface de forêt par habitant. Si l'on ajoute à ce constat que 37% de cette population vit dans les grandes villes, on peut affirmer que son territoire figure parmi les rares pays du monde qui offrent encore d'énormes possibilités pour la conservation.

La flore et la faune sont riches avec un taux d'endémicité et une diversité très élevés. On estime généralement que, sur le plan des espèces végétales, c'est la région la plus riche d'Afrique; ce qui en fait un refuge pour plusieurs d'entre elles. On a dénombré jusqu'à ce jour plus de 8.000 espèces végétales sans compter les algues, lichens et bryophytes ainsi qu'une faune de plus de 150 espèces de mammifères parmi lesquels on compte 19 espèces de primates. La population des grands primates est estimée à 35.000 gorilles et 64.000 chimpanzés. De plus, selon les estimations, le GABON abrite la population d'éléphants la plus importante et probablement la plus stable d'Afrique avec plus de 80.000 individus.

L'avifaune est également représentée avec plus de 600 espèces d'oiseaux.

Près de 40% de la superficie des forêts est restée dans un état primaire et le taux de déforestation est estimé à environ 0,1% par an.

Par ailleurs, le GABON possède une façade maritime longue de 800 km, un plateau continental de près de 40.000km² et des eaux riches en ressources halieutiques. Les stocks sont estimés à 250.000 tonnes de petits pélagiques (sardinelles, anchois, chinchards), 400.000 à 500.000 tonnes de thonidés durant six à huit mois par an, 65.000 tonnes d'espèces démersales et 2.000 tonnes de crevettes. On trouve également des quantités importantes de langoustes, crevettes, crabes et seiches en eaux profondes. Les ressources halieutiques des estuaires et des lagunes n'ont pas été entièrement inventoriées. Il en est de même des stocks de poissons dans les eaux continentales qui constituent un important réseau hydrographique de nombreux cours d'eau et de lacs. Toutefois 10 nouvelles espèces de poissons, dont 4 endémiques, ont été découvertes récemment.

La présence de nombreux reptiles et de la tortue Luth en particulier contribue également à la richesse faunique du GABON.

b) Importance économique

Sur le plan économique, la forêt a longtemps constitué la principale richesse du pays avant d'être devancée par le pétrole au début des années 1970.

Aujourd'hui, le secteur forestier occupe la deuxième place dans les recettes d'exportation (55 à 60 milliards de FCFA) et surtout demeure le premier employeur du secteur privé avec près de 28% de la population active et plus de 10 milliards de FCFA de salaires distribués par an.

Le secteur de la pêche ne joue pas encore un rôle important dans l'économie nationale et les stocks disponibles sont sous-exploités. De ce fait, le GABON est obligé d'importer chaque année plus de la moitié de ses besoins en poisson pour assurer sa sécurité alimentaire, ce qui représente une perte en devises de près de 10 milliards de FCFA.

Enfin, la forêt et les eaux maritimes et continentales constituent le support essentiel des activités des populations vivant en milieu rural. D'abord, elles leur apportent l'essentiel de leur nourriture grâce à l'agriculture, la chasse, la pêche et des produits de cueillette; puis elles leur procurent des revenus substantiels par la commercialisation des surplus de production; enfin elles fournissent les plantes médicinales et d'autres produits nécessaires à leur santé.

2/ - Menaces sur l'environnement et les ressources

Malgré la faible densité de la population (4 hab/km²) et le développement modéré de l'agriculture, certaines activités humaines menacent l'intégrité de l'environnement. Ces menaces s'expriment sous trois formes:

- les pollutions diverses des milieux urbains engendrant l'appauvrissement ou la disparition totale des écosystèmes naturels, ou encore mettant en péril la santé publique;

- l'épuisement progressif de la première zone forestière située le long du littoral du fait d'une exploitation trop répétitive et sans répit qui menace la régénération de la forêt et par là même sa pérennité;

- l'intensification du braconnage favorisé par la demande de consommateurs urbains qui risque de faire disparaître à moyenne échéance et de manière définitive certaines espèces animales du GABON (par exemple le lémentin, l'hippopotame).

3/ - Obstacles à la gestion du secteur des Eaux et Forêts

La gestion du secteur des Eaux et Forêts est confrontée à un certain nombre d'obstacles qui l'empêchent de jouer pleinement le rôle que l'Etat est en droit d'attendre de lui.

En premier lieu, l'Administration des Eaux et Forêts a une connaissance insuffisante du patrimoine qu'elle gère ainsi que de sa répartition sur l'ensemble du territoire, faute d'inventaires fiables des ressources forestières, fauniques et halieutiques. De cette situation découle une absence de planification de sa gestion et une répartition inadéquate des activités sur le terrain.

Le volume annuel du bois produit par l'exploitation forestière oscille autour de 1,5 million de m³ dont environ 80% d'okoumé. Ce volume est largement en-deçà de la possibilité forestière du GABON. La quasi totalité de cette production est exportée sous forme de grumes et une faible proportion, soit 15%, est transformée par les industries locales alors que le taux de transformation se situe au-dessus de 50% dans la plupart des pays forestiers africains.

Bien que le taux de déboisement de la forêt gabonaise reste encore faible du fait essentiellement d'une pression limitée de la population agricole et d'une exploitation sélective de la forêt, l'Administration des Eaux et Forêts a entrepris depuis 1953 des opérations de reboisement pour faire face à l'épuisement progressif des forêts naturelles et notamment de la première zone. Plus de 30.000 ha de plantations artificielles ont ainsi été réalisées de façon soutenue jusqu'en 1975. A partir de cette date, les opérations ont enregistré un net ralentissement puis un arrêt dûs essentiellement à la diminution des moyens financiers alloués et aux coûts de plus en plus élevés de leur réalisation.

Enfin, sur le plan des investissements liés au secteur des Eaux et Forêts, on note une très faible participation des nationaux dans l'exploitation forestière, l'industrie du bois et les activités de pêche.

Par ailleurs, les services de terrain chargés de la gestion du domaine forestier, de la faune sauvage et des ressources halieutiques manquent de structures d'accueil et de moyens d'intervention.

III. LES GRANDES LIGNES DE LA POLITIQUE DU GABON DANS LE SECTEUR FORET/ENVIRONNEMENT

1/ - Les grands axes de cette politique

L'objectif fondamental de la politique du GABON dans le secteur Forêt/Environnement est l'amélioration du cadre de vie des populations et l'utilisation raisonnée des ressources naturelles afin que celles-ci contribuent à la réalisation d'un développement économique durable. Pour atteindre cet objectif, le Gouvernement Gabonais a mis en oeuvre un stratégie globale dont les grands axes sont:

- la protection et l'amélioration de l'environnement;
- la conservation et la gestion rationnelle des ressources;
- la mise en valeur économique de celles-ci.

a) La protection et l'amélioration de l'environnement

La politique en matière de protection et d'amélioration de l'environnement se définit comme une politique de protection et de lutte contre les pollutions et les dégradations de toutes sortes. Pour accroître l'efficacité de la lutte contre ces dernières, le Gouvernement s'attache à intégrer dans sa stratégie le concept de l'impact environnemental. C'est ainsi que l'évaluation de l'impact sur l'environnement a été instituée comme mesure obligatoire dans la procédure de réalisation sur le territoire national de tout projet à caractère industriel.

b) La conservation et la gestion rationnelle des ressources

Les principaux axes d'activités autour desquels s'articule la politique de conservation et de gestion rationnelle des ressources sont notamment:

- l'étude et la recherche en vue d'accroître les connaissances scientifiques et les capacités biotechnologiques propres à assurer l'amélioration des ressources;

- la gestion rationnelle des ressources s'appuyant sur leur aménagement et se traduisant par une intervention directe des services publics dans les opérations d'inventaire, de reboisement, d'agroforesterie, d'assistance à la régénération naturelle, ainsi que par une redéfinition des conditions d'accès aux ressources et un renforcement du contrôle des activités des secteurs concernés;

- la constitution d'un réseau d'aires protégées basé sur des sites critiques reconnus comme importants pour la conservation des écosystèmes.

c) La mise en valeur économique des ressources naturelles

Du fait que les ressources naturelles sont la base matérielle sur laquelle repose le développement d'un pays, la mise en valeur économique de ces dernières a toujours constitué un aspect essentiel de la politique du GABON dans le domaine de l'utilisation et de la gestion du patrimoine naturel national.

Sur cette base et prenant pleinement en compte les contraintes liées à l'environnement et à l'écologie, le Gouvernement entend poursuivre et diversifier l'exploitation de ses ressources naturelles notamment:

- en développant la filière bois (bois d'oeuvre et bois d'énergie) et en orientant la production vers une diversification et une transformation locale toujours plus importante et plus élaborée basée sur une exploitation durable de la forêt;

- en organisant les activités de pêche afin de leur assurer un développement optimal basé sur le potentiel de capture biologiquement tolérable;

- en développant la filière touristique par la mise en valeur des potentialités naturelles et exceptionnelles disponibles dans ce secteur.

2/ - Les outils

La réalisation des objectifs définis ci-dessus nécessite la mise en oeuvre de moyens réglementaires, financiers et humains très importants. Elle requiert également la participation active à tous les niveaux de l'ensemble des citoyens et des opérateurs économiques tout en prenant appui sur des institutions nationales efficaces et une coopération internationale soutenue.

a) Législation et fiscalité

Un certain nombre de décrets d'application de la Loi 1/82 fixant la réglementation forestière ont déjà été pris et d'autres sont en cours d'adoption.

En ce qui concerne le secteur de l'environnement, le Gouvernement a mis au point avec le concours du Programme des Nations Unies pour l'Environnement (P.N.U.E.) un projet de loi relatif à la protection et à l'amélioration de l'environnement qui vise à créer un cadre cohérent et efficace de gestion de l'environnement. Le projet est en cours de discussion à l'Assemblée Nationale.

Sur le plan de la fiscalité, le système de taxation dans le secteur des Eaux et Forêts est relativement complexe. A cet effet, une étude sera réalisée dans le cadre du projet Forêts et Environnement en vue notamment de rationaliser et de simplifier le régime fiscal en vigueur. Le nouveau régime devra intégrer notamment des incitations à la protection de la nature par les opérateurs économiques, les préoccupations de financement de la revalorisation sur place des ressources forestières et des opérations d'aménagement durable.

En matière de nuisances et de pollution environnementales, le Gouvernement se propose d'étudier et de mettre en place des mécanismes adéquats de prévention, d'indemnisation et de restauration.

b) Commercialisation

La politique de commercialisation vise les objectifs suivants:

- protéger durablement l'exploitation et la régénération de la forêt gabonaise;
- développer une industrie compétitive de transformation du bois;
- maintenir un niveau satisfaisant des prix à l'exportation de l'okoumé et l'ozigo;
- renforcer la participation effective des gabonais, notamment des zones rurales à l'activité du secteur forestier.

A cette fin, le maintien à moyen terme du monopole sur le commerce de l'okoumé et de l'ozigo a été confirmé par le Gouvernement. En outre, des mesures complémentaires ont été prises notamment concernant la restructuration de la Société Nationale des Bois du Gabon (SNBG) et la mise en place d'un comité interministériel chargé de veiller à l'application stricte des mesures du redressement financier et commercial de cette société.

c) Education et information

L'éducation et l'information visent à établir les meilleurs rapports possibles, d'une part, entre l'homme et son environnement naturel et, d'autre part, entre les administrations chargées de la gestion des ressources naturelles et l'ensemble des citoyens. Pour cela, il conviendra d'introduire et de renforcer l'enseignement en matière d'environnement dans les programmes scolaires. De même, des programmes spécifiques de sensibilisation seront conçus pour toucher les populations concernées.

d) Formation

La formation des ressources humaines en quantité et de qualité satisfaisantes constitue une condition essentielle pour la réussite de la politique en matière de Forêt/Environnement. Il convient donc d'assurer la formation et le recyclage des agents chargés de la gestion des ressources naturelles.

e) Participation des nationaux

La participation des nationaux consiste d'abord à leur assurer une place dans les activités d'exploitation des ressources naturelles. Elle vise également à les associer aux activités de protection et de conservation des écosystèmes. Les populations rurales ont notamment un rôle primordial à jouer dans l'élaboration et la mise en oeuvre de tout projet lié au secteur.

f) Institutions nationales

Il importe de restructurer et de renforcer le cadre institutionnel de fonctionnement des Administrations chargées de la gestion du secteur Forêt/Environnement afin d'assurer une meilleure animation et coordination de l'Administration centrale. De même, cette restructuration doit viser une plus grande responsabilité des services de terrain afin de rapprocher l'Administration des opérateurs économiques et des populations.

Par ailleurs, le caractère multidisciplinaire des problèmes relatifs au secteur Forêt/Environnement requiert l'adhésion et la participation de tous les autres secteurs concernés. A ce titre, une structure de coordination interministérielle devra assurer en permanence la concertation intersectorielle indispensable à la mise en oeuvre d'une politique cohérente dans le secteur.

g) Coopération internationale

La mise en oeuvre des programmes de développement du secteur Forêt/Environnement nécessite bien entendu d'importants moyens financiers à des conditions appropriées.

En dehors des ressources qu'il consacre au secteur, le GABON a besoin de la coopération internationale, qu'elle soit bilatérale ou multilatérale, pour financer les différents projets de développement.

De même, compte tenu de la dimension et de la complexité des problèmes liés au secteur, il importe qu'une coopération scientifique soit développée avec les pays amis, les organisations internationales et les ONG pour appuyer les actions initiées par le Gouvernement et l'aider à développer ses propres capacités techniques de gestion.

IV. LE PROJET FORETS ET ENVIRONNEMENT

Il apparaît donc que le GABON regorge d'importantes ressources naturelles et que sa flore et sa faune figurent parmi les plus riches au monde avec un taux d'endémicité et une diversité très élevés. De même, ses eaux maritimes et continentales recèlent d'immenses ressources biologiques.

Le diagnostic établi ci-dessus a mis en évidence les potentialités offertes par les ressources du secteur Forêt/Environnement ainsi que les contraintes auxquelles il faut faire face pour que ce secteur joue pleinement le rôle que l'Etat est en droit d'en attendre pour assurer le développement du pays.

Le projet Forêts et Environnement dont l'élaboration et la mise en oeuvre ont été décidées par le GABON avec l'appui de la Banque Mondiale vise à appuyer les objectifs à long terme fixés au secteur Forêt/ Environnement par le Gouvernement.

Il s'agit:

- d'assurer une meilleure utilisation des ressources forestières par des travaux d'aménagement et de recherche dans la première zone qui est surexploitée, travaux qui porteront sur les peuplements naturels et les plantations d'okoumé existantes;

- de rétablir l'autorité de l'Etat en matière de contrôle de l'exploitation forestière et de protection de l'environnement, par la restructuration et le renforcement des moyens du Ministère des Eaux et Forêts et du Ministère de l'Environnement, du Tourisme et des Parcs Nationaux;

- de renforcer et réorienter les programmes de l'Ecole Nationale des Eaux et Forêts (ENEF) vers une formation plus pratique d'agents de brigades et d'inspecteurs répondant mieux aux besoins du secteur privé et aux exigences de conservation.

- de réaliser et mettre en oeuvre le Plan National d'Action Environnemental (PNAE); et
- d'appuyer l'action gouvernementale dans la protection des réserves existantes et la création des parcs nationaux, là où ils se justifient.

Libreville, le 1er juin 1992

Le Ministre des Eaux et Forêts



Eugène CAPITO

THE GABONESE REPUBLIC
FORESTRY AND ENVIRONMENT PROJECT
ENVIRONMENT IMPACT ASSESSMENT

Executive Summary

Introduction

1. Gabon is covered with vast areas of tropical forest, and this, coupled with its low human population and one of the highest standards of living in Africa, makes it one of the few countries in the world that still offer exceptional potential for conservation. Forestry has traditionally played a very important role in the Gabonese economy, although its importance diminished under the oil boom. Forest products still represents 12% of export value (1987), second only to oil. Total closed forest cover is estimated at 20.5 million ha, of which approximately 12 million are considered to be valuable commercial stands. Gabon also possesses significant petroleum, natural gas, and hydro-electric resources.
2. The biodiversity represented by the country's ecosystems is among the highest in Africa. Gabon is found entirely within the Guinea-Congolian regional centre of endemism. The rich forests of Gabon is an important sanctuary for primates (19 species), about 20 carnivorous species and more than 600 bird species. A number of waterways, lakes and a long coastline contain relatively rich freshwater and marine life systems.
3. The most recent botanical studies confirm that Gabon's rich flora is more varied than that of West Africa and the Zaire Basin. In a recent floral study of 17 botanical families represented in central and West Africa, Gabon had 888 species in 236 genera on 230,000 sq. km., compared to 885 species in 225 genera on 600,000 sq. km. in West Africa. It is estimated that Gabon has about 8000 higher plant species of which about 20% are endemic to the country.
4. Gabon has a small rural population of less than one person per square kilometer causing only minimal impact of slash and burn agricultural practices. Environmental damage is localized and limited to areas surrounding urban centers and main roads. Deforestation rates are very low (about 1% per annum) and of all the African countries, Gabon is expected to lose the smallest portion of its forest area during the next 50 years.
5. Logging activities are however causing environmental concerns, particular in the depleted forest area of the First Zone nearest to the coastline and urban centers. Extensive logging in this zone, coupled with intensive and illegal commercial game hunting, has led the Government to initiate measures to protect the rich and diverse forest and wildlife resources, although implementation is still weak.
6. Responsibility for forestry and conservation in Gabon rests with two ministries, the Ministry of Water and Forestry has primary responsibility for forestry activities, logging concessions etc., while the Ministry of Environment, Tourism and National Parks is responsible for conservation activities and protected areas.

Project Description

7. The Gabon Forestry and Environment Project has as its main objective to contribute to better and sustainable use of forestry and wildlife resources in the country; to reinforce the strategic planning and operational capacity of government institutions; to improve forestry research and training opportunities; and to support the creation of wildlife reserves and a national environmental action plan.

8. To meet the above objectives, the project includes the following components:

- Inventory and rehabilitation of Okoume forest plantations. This will include the rehabilitation and protection of 5-6000 ha of deteriorated plantations and 40,000 ha of secondary Okoume natural regrowth forests.

- Forestry and environmental research, including the rehabilitation of 1000 ha of existing research plots, and the testing of various agro-forestry techniques in collaboration with the local population.

- Forestry and environmental training and retraining at professional level, including the promotion of training programs tailored to the needs of the private sector.

- Institutional strengthening of the Ministry of Waters and Forestry and the Ministry of Environment, Tourism and National Parks, with the specific aim of assisting these ministries to better supervise and control logging concessions and operations, to prevent poaching and other negative environmental impacts.

- Environmental studies that would include the elaboration of a national environmental action plan, faunal and floristic surveys, preparation of national environmental status reports, and feasibility studies for the establishment of 15 priority ecological protected areas.

- Creation, implementation and maintenance of the Gamba protected area complex with important adjacent areas (Moukalaba, Sette Cama).

9. The project will be implemented by the Government of Gabon through the Ministry of Waters and Forestry as loan agreement coordinator, but with the Directorate General of Forestry responsible for the forest inventories and plantation rehabilitation components, the National School of Waters and Forestry responsible for training, and the Institute of Forestry and Agronomy Research responsible for forestry, agro-forestry and environmental research.

10. The creation and management of reserves and national parks would be undertaken by the Directorate for Game and Wildlife with the support of the World Wildlife Fund field personnel in concert with the Directorate of Environment. This Directorate will also have the main responsibility for the environmental action plan and biological surveys. The monitoring of the environmental impact assessment will be done by the inter-ministerial environmental working group established as a result of the impact assessment (Noyau Permanent de Travail).

11. The project components will not include support to any forest operations in primary tropical forest areas. Any forestry activity envisaged within the project frame will be in secondary forest areas that have been subjected to 3 to 5 previous logging operations, mostly for Okoume harvesting.

12. The project will not lead to any resettlement of people. Where people and forest interact, agro-forestry activities under the research component will seek to enhance the economic and environmental sustainable production potential of the land for the benefit of the local population.

Project Area

13. Management, plantations and research areas included in the project are mainly spread out in the Estuaire Province in which the capital city of Libreville is located. Some plantations and agro-forestry sites are also located in adjacent areas of the Moyen Ogooue Province. The main conservation areas (the Gamba complex) is located on and near the coast south of Port Gentil in the Ogooue Maritime Province (see attached map).

14. The project region is located in the equatorial zone receiving 2500 - 3500 millimeter of rainfall annually, and with an average annual temperature of 26 centigrades and more than 85% relative humidity. The project area locations are all within the rainforest zone.

Probable Project Impacts

15. Limited attention has been paid to conservation of natural resources within Gabon, either by the government or international organizations. However, the low population pressure and the resulting lack of rapid and uncontrolled rural development has resulted in the country being relatively untouched by the environmental problems that have affected other developing countries. The Gabonese government has nevertheless begun to realize that development must take the country's natural heritage into account and has begun to make investments in conservation, this project being a major added effort in this direction.

16. The Environmental Impact Assessment concentrated its attention on the secondary forest management component, and the plantation rehabilitation component. The other components were not considered likely to have any negative environmental impacts.

17. Likewise, the Assessment's main conclusion is that neither the secondary forest management component, nor the plantation rehabilitation component are likely to have any major negative environmental impacts.

18. The study has therefore concentrated its attention on the possibility of some negative impacts that could occur as secondary effects because of the different activities that will have to be performed in order to realize the project.

19. The forests affected by the project activities are all deteriorated secondary forests, exploited 4-5 times over for Okoume and other valuable tree species for export, and the population which used to live in these areas has migrated to the urban areas. As an example, the village of Foulzenem on the south side of the estuary across from Libreville once was home for a thriving population of 1500-2000 inhabitants dependent on a forest industry that left the area in the early nineteen seventies. Today there is only a dozen people left in this ghost town and the forest is returning.

20. The Assessment has divided the likely impacts in two categories: (a) project induced impacts; and (2) broader impacts.

The first group lists the following:

- Impacts caused by infrastructure improvements. This would include an increased human accident risk due to increased vehicular use and speed.
- Health and sanitation impacts caused by the establishment of workers camps and temporary settlements.
- Possible damage caused by the use of heavy machinery in forest operations.
- Possible secondary impacts caused by an inadequate community infrastructure in the villages that would have some relationship with the project (lack of dispensaries, schools, etc.).

The second group lists two long term impacts:

- Wildlife poaching. Illegal but widespread hunting for game meat (bush meat) is a serious threat to wildlife whenever there is adequate human access. The bush meat hunters supply a high price market in all the major towns and trading centers. Increased access provided by the project will increase poaching unless strict control measures are put in place.
- The possibility of localized overuse of soils for cultivation. Much of the soil in the project region is leached and of poor nutritional quality. The absence of proper soil conservation techniques applied in agricultural production in areas of project concentration could lead to increased soil erosion and sedimentation.

Recommended Mitigation Measures

21. Most of the expected impacts can be mitigated with simple cautionary measures during the detailed project planning and design phase. Particular recommendations include the following:

- The wildlife poaching activities should be better controlled through a regular access road control system of vehicles leaving the forests. Other specific measures will depend partly on the outcome of the ongoing WWF study on the bushmeat trade and markets in Gabon.

- As a broader counterweight measure to the negative impacts that may happen to wildlife and the flora as a result of economic development activities anticipated in the project, it is essential to secure the creation and implementation of the Gamba conservation reserves complex. This would include the implementation of the Petit Loango National Park and adjacent wildlife reserves including the Moukalaba reserve. New boundaries responding to present realities and biodiversity considerations should be agreed upon for the complex, and a comprehensive master management plan prepared. This work should be done in close collaboration with WWF.

- Agroforestry research and experimentation should be strengthened to make the local population less dependent upon wildlife poaching. In addition, an agricultural improvement program should be included for villagers and agriculturists in the project area that would include farmers not directly engaged in the project's agro-forestry component.

- All project induced activities, including improvement of infrastructure, establishment of workers camps, the use of heavy machinery etc. have to follow written and acceptable standards as to permissible environmental impacts, and mitigation measures must be implemented. These measures may include reseeding and replanting, terracing of cut slopes, use of wide rubber tires on heavy machinery, proper drainage facilities, human waste disposals etc. as the situation may warrant.

- A data-bank should be established for the project, incorporating forestry, biodiversity and sociological data for the entire project area. The data assembled would include both background literature, baseline data as well as long term monitoring data, and include economic as well as experimental forestry research results.

- Surveys of the fauna and floral composition should be done in the project area, as well as of the local inhabitants and villages that relates to the project.

- An environmental education and extension program should be implemented in the wider project area. This should particularly have the objective of making the local people better aware of the importance of sound and sustainable natural resource management for their own long term benefits.

- The human population living in villages within the project area represents mostly migrant worker families from other regions of Gabon. Their social cohesiveness is very weak, and the communal facilities and village infrastructures are of low standard. The project should include actions destined to improve basic village infrastructure situation.

Monitoring

22. Regular periodic monitoring should be done as a follow-up to the recommendations in the Environmental Impact Assessment. This should take the form of regular field visits to forest operations sites, and an inventory of changes in faunal, floral, and soil composition at regular intervals after forest operations has halted. An environmental status report should be prepared every five years for the project region.

Interagency Coordination and Public Participation

23. The established Noyau Permanent de Travail (NPT) is a permanent coordinating body for interministerial and NGO coordination and project implementation monitoring. The NPT consists of personnel from the Ministry of Water and Forests, and the Ministry of Environment, Tourism and National Parks. It also includes persons from NGOs (CENA, FEG, IADR) and research institutions etc. when dealing with relevant topics.

24. Several interministerial meetings have already been carried out by the NPT during the EA preparation and appraisal. These meetings will be organized on a regular basis throughout project implementation.

25. The local population in the project area was consulted through several on-site interview sessions organized by the EA team sociologist. Apart for NGOs participating in several technical meetings, NGOs, universities and the public were also invited to one special hearing session during the EA process, and one at the end. Broad participation in these public meetings was secured through individual invitations, through announcements in the press, and through the local radio. All of these meetings are duly recorded.

THE GABONESE REPUBLIC
FORESTRY AND ENVIRONMENT PROJECT
RESIDENT TECHNICAL ASSISTANCE - SUMMARY TERMS OF REFERENCE

1. Forest Management Specialist, 5 years as of PY1, based in Libreville in the Ministry of Waters and Forestry (MEF).

Responsibilities:

He/she would assist the project coordinator in the analysis of policy issues and the planning of activities under the project. He/she would assist in the management and coordination of the various studies to be undertaken under the project. He/she would participate in the organizational assessment of the project components and their development impact. He/she would also oversee day to day project financial management. Finally he/she would be assisting in the preparation of the project's Mid-Term evaluation. He/she would also give specific emphasis to the training of counterparts.

Qualifications:

Forest Management Specialist or Resource Economist with knowledge of environmental issues. A minimum of 12 years experience, of which at least six in Africa would be required for this assignment. French language is essential.

2. Forest Inventory Specialist, 3 years as of PY1, based in Libreville, with frequent trips in the field, at DGF.

Responsibilities:

He/she would assist: (a) in all technical operations relating to the preparation of inventories, the start-up of silvicultural operation, and the forest management activities; and (b) assist in elaborating monitoring guideline for assessing the environmental impact of field activities.

Qualifications:

Forest Engineer/Inventory Specialist with at least 10 years experience of which at least 5 in Africa. French is essential.

3. Forest Training and Management Specialist, 3 years as of PY1 based in Cap. Esterias (Libreville) at the National School for Forestry Training (ENEF).

Responsibilities:

He/she would head the Management Department at ENEF, would assist in planning and organizing all Forest Management Training activities at ENEF. He/she would be expected to teach a given number of hours per week and initiate training program in the context of the management plan for the Mondah Forest.

Qualifications:

Forest Management Specialist/Trainer with experience in Tropical Forestry and training in Forest Schools. 10 years experience with at least 5 years in Africa. French is essential.

4. Forest Engineer, 5 years as of PY1 based in Libreville at DGF.

Responsibilities:

He/she would be responsible for assisting the Directorate of Forestry in the design and implementation of work programs. He/she would work in close liaison with the Forest Inventory Specialist on the implementation of Inventory and Forest management activities.

Qualifications:

Forest Engineer with experience in management and silvicultural operations. A minimum of 12 years experience of which at least 6 in Africa would be required for this assignment. French language is essential.

5. Environmental Specialist, 5 years as of PY1 based in Libreville in support of DFC and DGE.

Responsibilities:

He/she would be responsible for coordinating actions for the creation of reserves and would assist in the implementation of the various environmental studies and surveys. He/she would establish close liaison with WWF field staff.

Qualifications:

Environmental specialist with sound knowledge of reserves and national parks. At least 12 years experience of which at least 5 in Africa. French language is essential.

THE GABONESE REPUBLIC

PROJET FORET/ENVIRONNEMENT

MODULES DE FORMATION ENVIRONNEMENTALE PROPOSES A L'ENEF

1. EROSION

Eolienne, pluviale. Cause, occurrence au Gabon. Intensité en fonction du type de sol, de la végétation, de la topographie, de la pluviométrie. Comment cette intensité peut être accrue par de mauvaises pratiques en matière de génie civil, en particulier dans le domaine routier. Préparation des terres agricoles, exploitation forestière. Comment minimiser l'érosion, en particulier par des méthodes végétatives.

2. FERTILITE DES SOLS

Les arbres en tant que pompes à nutriments, par exemple dans les jachères forestière. La déforestation entraîne une volatilisation de l'azote et le lessivage d'autres éléments. L'agroforesterie comme moyen d'entretenir la fertilité des sols.

3. CONSERVATION DE L'EAU

Les forêts consomment plus d'eau que la végétation contenant moins de biomasse, par exemple les pâturages. Cependant les arbres réduisent les crues, en particulier en améliorant la rétention de l'eau (la forêt comme château d'eau). La déforestation à large échelle (en Afrique en particulier et en Amazonie), peuvent avoir un effet global sur le climat, en particulier en réduisant la pluviométrie.

4. EFFET SUR LES EMISSIONS DE CO2

Les forêts stockent le CO2. La déforestation, suivie d'une combustion ou d'une décomposition du bois, relâche le CO2 dans l'atmosphère. Effet de serre.

5. GESTION DE LA RIODIVERSITE

Richesse de la faune et de la flore au Gabon. Intérêt international pour cette biodiversité. Eco-tourisme. Législation environnementale gabonaise et internationale. Délimitation des aires protégées. Gestion des parcs et réserves.

6. MANGROVES

Répartition dans le pays. Importance pour la pêche, la prévention de l'érosion côtière.

7. PRODUITS SECONDAIRES DE LA FORET

Miel, plantes médicinales, fruits comestibles, fourrage, petit bois. Utilisations possibles, valorisation économique.

8. ENVIRONNEMENT COMME SYSTEMES

Les éléments constitutifs d'un écosystème: biotope et biocénose (anatomie). Les flux (matière, énergie) dans un écosystème (physiologie). Tôle de l'activité humaine. Maximisation de la valorisation de l'énergie primaire (solaire) renouvelable. Applications pratiques.

9. LES INTERFACES FORET-AUTRES UTILISATIONS DES SOLS

Rôle écologique des lisières (en particulier habitat pour la faune). Transfert des matières (fertilisation forestière par les animaux de pâturage, utilisation des branches et feuilles comme source de matière organique). La protection locale des forêts contre l'érosion et l'ensablement des terres basses.

GABON
FORESTRY AND ENVIRONMENT PROJECT
Summary Account by Project Component
CFAP

	APPUI A LA GESTION & FORETS	DIRECTION N EAUX	DIRECTION N FAUNE & CHASSE	DIRECTION N ENVIRONNEMENT	FORESTRY TRAINING (ENEFF)	FORESTRY RESEARCH	NATURAL OKOLINE STANDS	PLANTATIONS	MOUKALABA	SETTE CANA	Total	Physical Contingencies		Price Contingencies	
												%	Amount	%	Amount
I. INVESTMENT COSTS															
A. EQUIPEMENT	5.3	472.4	224.4	19.5	167.9	59.0	10.6	0.8	37.0	16.8	1013.7	5.8	58.7	14.9	150.9
B. GENIE CIVIL	0.0	586.7	0.0	0.0	43.5	0.0	47.2	10.0	12.0	43.0	742.4	6.8	50.1	11.6	86.0
C. VEHICULES	78.0	602.0	231.5	94.0	49.0	77.0	111.0	39.8	46.3	69.0	1397.7	8.7	121.5	31.6	442.3
D. ASSISTANCE TECHNIQUE															
1. Expertises LT	225.0	225.0	0.0	0.0	135.0	0.0	0.0	0.0	225.0	0.0	810.0	7.2	58.5	38.5	311.6
2. Gestion des Inventaires	0.0	184.4	0.0	0.0	42.8	0.0	647.6	553.1	0.0	0.0	1427.9	8.3	4.3	11.2	160.5
3. Expertises CT	127.7	22.5	117.2	67.5	70.5	216.0	0.0	0.0	13.5	42.0	676.9	5.8	39.2	30.7	207.8
Sub-total	352.7	431.9	117.2	67.5	248.3	216.0	647.6	553.1	238.5	42.0	2914.8	3.5	102.0	23.3	679.8
E. FORMATION	15.0	62.5	75.0	140.0	59.9	37.0	0.0	0.0	18.0	0.0	407.4	9.6	39.1	28.9	117.9
F. PPF	83.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	83.4	0.0	0.0	0.0	0.0
Total INVESTMENT COSTS	534.4	2155.5	640.1	321.0	548.7	389.0	816.5	603.7	351.8	170.8	6559.5	5.7	371.5	22.5	1476.9
II. RECURRENT COSTS															
A. FONC. ENTRETIENS	26.0	165.0	35.0	35.0	55.4	36.3	21.5	0.0	23.0	7.5	404.7	10.0	40.5	21.0	84.9
B. FONC. VEHICULES	35.0	275.4	58.2	39.0	0.0	42.5	164.8	20.0	20.0	71.5	726.6	7.4	55.2	17.5	127.2
C. SALAIRES	0.0	0.0	0.0	0.0	0.0	87.3	0.0	0.0	15.0	51.5	153.8	10.0	15.4	11.3	17.3
D. FRAIS DE MISSION	21.0	108.7	15.1	18.0	4.7	33.0	0.0	0.0	0.0	0.0	200.5	2.7	5.4	10.4	20.9
E. DIVERS	0.0	0.0	283.2	7.0	0.0	0.0	0.0	0.0	0.0	0.0	283.2	8.8	25.0	15.3	43.4
Total RECURRENT COSTS	82.0	549.3	391.5	92.0	60.1	199.0	186.3	20.0	58.0	130.5	1768.8	8.0	141.5	16.6	293.7
Total BASELINE COSTS	616.4	2704.9	1039.6	413.0	628.9	588.0	1002.7	623.7	409.8	301.3	8328.3	6.2	512.9	21.3	1770.6
Physical Contingencies	18.0	137.3	93.9	32.7	60.8	56.6	35.5	7.1	41.0	30.1	512.9				
Price Contingencies	162.4	431.5	271.0	117.4	168.9	153.5	191.9	72.5	137.2	64.5	1770.6	7.4	130.5		
Total PROJECT COSTS	796.7	3273.6	1404.5	563.2	858.6	798.1	1230.1	703.2	588.0	395.9	10611.9	6.1	643.5	16.7	1770.6
Taxes	29.1	182.1	106.5	33.2	18.5	33.6	33.9	13.6	10.2	10.1	478.8	9.1	43.5		
Foreign Exchange	579.3	2041.0	819.0	355.2	645.6	485.7	477.8	78.8	479.1	203.4	6162.7	6.8	416.8		

Values Scaled by 1000000.0 3/27/1992 14:00

**GABON
FORESTRY AND ENVIRONMENT PROJECT
Projects Components by Year**

	Totals Including Contingencies CFAF						Totals Including Contingencies US\$					
	1992	1993	1994	1995	1996	Total	1992	1993	1994	1995	1996	Total
A. INSTITUTIONAL STRENGTHEN.												
1. APPUI A LA GESTION	255.8	115.5	117.3	182.0	126.1	796.7	0.9	0.4	0.4	0.7	0.5	2.9
2. DIRECTION EAUX & FORETS	1373.4	885.7	283.7	449.5	281.3	3273.6	4.9	3.2	1.0	1.6	1.0	11.8
3. DIRECTION FAUNE & CHASSE	527.8	191.2	179.7	336.1	169.6	1404.5	1.9	0.7	0.6	1.2	0.6	5.1
4. DIRECTION ENVIRONNEMENT	159.0	76.7	86.3	155.7	85.5	563.2	0.6	0.3	0.3	0.6	0.3	2.0
Sub-Total	2316.1	1269.0	667.0	1123.3	662.6	6038.0	8.3	4.6	2.4	4.0	2.4	21.7
B. FORESTRY TRAINING (ENEF)	433.5	195.0	137.6	57.6	34.9	858.6	1.6	0.7	0.5	0.2	0.1	3.1
C. FORESTRY RESEARCH	275.2	169.9	102.3	153.3	97.4	798.1	1.3	0.6	0.4	0.6	0.4	2.9
D. FOREST REHABILITATION												
1. NATURAL OKOLME STANDS	292.6	261.4	304.0	202.4	169.7	1230.1	1.1	0.9	1.1	0.7	0.6	4.4
2. PLANTATIONS	126.2	223.0	134.3	118.8	101.0	703.2	0.5	0.8	0.5	0.4	0.4	2.5
Sub-Total	418.8	484.4	438.3	321.2	270.7	1933.3	1.5	1.7	1.6	1.2	1.0	7.0
E. RESERVES												
1. MOUKALABA	181.6	91.4	90.4	135.5	89.0	588.0	0.7	0.3	0.3	0.5	0.3	2.1
2. SETTE CANA	202.9	48.4	39.8	50.5	54.3	395.9	0.7	0.2	0.1	0.2	0.2	1.4
Sub-Total	384.5	139.8	130.2	186.1	143.3	983.9	1.4	0.5	0.5	0.7	0.5	3.5
Total PROJECTS COSTS	3828.1	2258.2	1475.4	1841.4	1208.9	10611.9	13.8	8.1	5.3	6.6	4.3	38.2

Values Scaled by 1000000.0 3/26/1992 18:56

GABON
FORESTRY AND ENVIRONMENT PROJECT
Summary Accounts by Year

	Totals Including Contingencies CFAF						Totals Including Contingencies US\$					
	1992	1993	1994	1995	1996	Total	1992	1993	1994	1995	1996	Total
I. INVESTMENT COSTS												
A. EQUIPEMENT	595.1	463.6	47.5	84.6	32.6	1223.4	2.1	1.7	0.2	0.3	0.1	4.4
B. GENIE CIVIL	629.2	227.9	12.1	9.2	0.0	878.5	2.3	0.8	0.0	0.0	0.0	3.2
C. VEHICULES	999.0	107.8	139.1	630.3	85.5	1961.5	3.6	0.4	0.5	2.3	0.3	7.1
D. ASSISTANCE TECHNIQUE												
1. Expertises LT	245.8	254.9	264.3	203.8	211.3	1180.1	0.9	0.9	1.0	0.7	0.8	4.2
2. Gestion des Inventaires	393.0	417.5	337.8	242.0	202.4	1592.7	1.4	1.5	1.2	0.9	0.7	5.7
3. Expertises CT	328.5	210.4	134.8	122.8	127.3	923.8	1.2	0.8	0.5	0.4	0.5	3.3
Sub-Total	967.2	882.8	736.9	568.6	541.1	3696.6	3.5	3.2	2.7	2.0	1.9	13.3
E. FORMATION	101.9	124.6	129.2	112.3	96.4	564.4	0.4	0.4	0.5	0.4	0.3	2.0
F. PPF	83.4	0.0	0.0	0.0	0.0	83.4	0.3	0.0	0.0	0.0	0.0	0.3
Total INVESTMENT COSTS	3375.9	1806.7	1064.7	1405.0	755.6	8407.9	12.1	6.5	3.8	5.1	2.7	30.2
II. RECURRENT COSTS												
A. FONC. ENTRETIENS	92.2	105.5	106.8	110.7	114.8	530.1	0.3	0.4	0.4	0.4	0.4	1.9
B. FONC. VEHICULES	230.7	201.0	146.0	162.6	168.6	908.9	0.8	0.7	0.5	0.6	0.6	3.3
C. SALAIRES	28.5	32.8	39.4	41.9	44.1	186.5	0.1	0.1	0.1	0.2	0.2	0.7
D. FRAIS DE MISSION	32.6	44.6	48.1	49.8	51.7	226.8	0.1	0.2	0.2	0.2	0.2	0.8
E. DIVERS	68.3	67.6	70.4	71.3	74.1	351.6	0.2	0.2	0.3	0.3	0.3	1.3
Total RECURRENT COSTS	452.2	451.4	410.7	436.4	453.3	2204.0	1.6	1.6	1.5	1.6	1.6	7.9
Total PROJECT COSTS	3828.1	2258.2	1475.4	1841.4	1208.9	10611.9	13.8	8.1	5.3	6.6	4.3	38.2

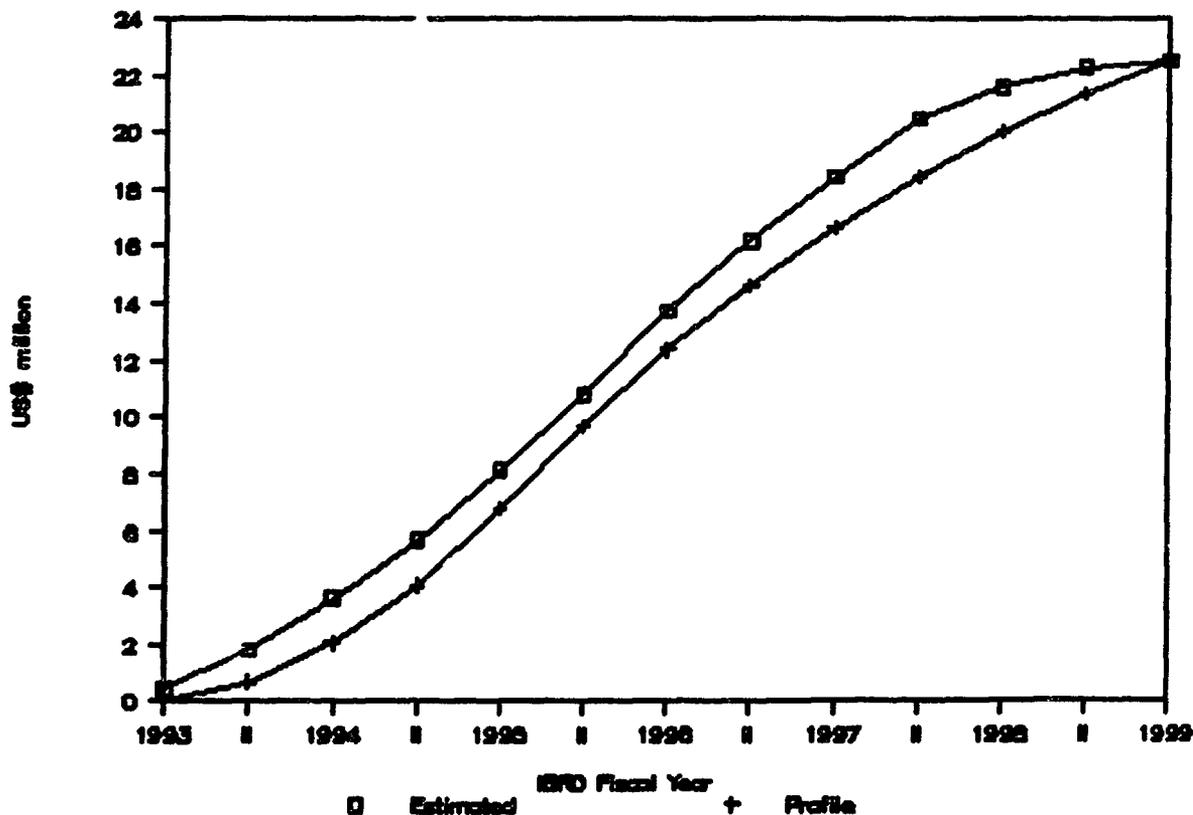
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THE GABONESE REPUBLIC
FORESTRY AND ENVIRONMENT PROJECT
DISBURSEMENT SCHEDULE AND PROFILE

A. Estimated Disbursement Schedule

IBRD's FYs	IBRD's Semesters	Project Estimated Profile Per Sem.	Cumulative	% of Loan	Per Sem.	Standard Profile Cumulative	% of Loan
1993	I	0.4	0.4	2	0.0	0.0	0
	II	1.3	1.8	8	0.6	0.6	3
1994	I	1.8	3.6	16	1.3	2.0	9
	II	2.0	5.6	25	2.0	4.0	18
1995	I	2.4	8.1	36	2.7	6.7	30
	II	2.7	10.8	48	2.9	9.6	43
1996	I	2.9	13.7	61	2.7	12.3	55
	II	2.4	16.2	72	2.2	14.6	65
1997	I	2.2	18.4	82	2.0	16.6	74
	II	2.0	20.4	91	1.8	18.4	82
1998	I	1.1	21.6	96	1.5	20.0	89
	II	0.6	22.2	99	1.3	21.3	95
1999	I	0.2	22.5	100	1.1	22.5	100

B. Disbursement Profile



REPUBLIC OF GABON
FORESTRY AND ENVIRONMENT PROJECT
IMPLEMENTATION SCHEDULE

<u>Task</u>	<u>Completion Date</u>	<u>Agency Responsible</u>
- Approval of LPGFE	Before Board Presentation	MEF/METPN
- Signing of Arrêté	Before Loan Effectiveness	MEF
- Launching of ICB for Vehicles and Equipment	Before Loan Effectiveness	MEF/PCU
- Establishment of short lists for consultant services	Before Loan Effectiveness	MEF/PCU
- Budget forecasts and work plan for CY93 to MPE	September 1992	PCU
- Signing of contract with Research Institute and/or Consultants	December 1992	PCU
- Arrival of Forest Management Specialist	January 1993	PCU
- Arrival of Forest Inventory Specialist, Training Specialist, Forest Engineer	January 1993	PCU/ENEF
- Arrival of Environmental Specialist	January 1993	PCU/DGE
- First Audit of Accounts	December 1993	PCU
- First bi-annual supervision mission of each component	March 1993	PCU/Executing agencies
- Budget Forecast and work plan for CY94	June 1993	PCU
- Second bi-annual supervision mission for each component	September 1993	PCU/Executing agencies
- Review of Environmental Impact	December 1993	NPT/NPS
- Project Mid-Term Review	June 1995	PCU/Executing agencies

Legend:

PCU	-	Project Coordination Unit
MEF	-	Ministry of Waters and Forestry
METPN	-	Ministry of Environment, Tourism and National Parks
MPE	-	Ministry of Planning and Economy
NPT	-	Noyau Permanent de Travail
NPS	-	Noyau Permanent de Suivi

SUPERVISION SCHEDULE

IBRD's Supervision Input into Key Activities

Year	Missions	Activity	Expected Skill Requirements	SM
First Year	1	Project start-up Procurement Review Financial Management	Task Manager Forestry Specialist Environment Specialist Procurement Specialist Financial Analyst	6
	2	Organization/Management Launching of Field Activities Environmental Workshop	Task Manager Forestry Specialist Environmental Specialist Agronomist/Research Specialist	6
Second Year	1	Implementation Field Activities of Environmental Impact Review Studies	Task Manager Environmental Specialist Forestry Specialist	8
	2	Review of Field Activities Financial Performance	Task Manager Financial Analyst Training Specialist	6
Third Year	1	Mid-Term Review Confirmation/Reorienting of Project Design	Task Manager Forestry Spec., Environmentalist Sociologist, Agronomist Financial Analyst	15
	2	Implementation of Field Acti. Review of Studies Procurement and Financial Review	Task Manager Financial Analyst Forestry Specialist	8
Fourth Year	1	Implementation of Field Activit. Environmental Monitoring	Task Manager Environmentalist Forestry Specialist	6
	2	Financial Management Implementation of Field Activities	Task Manager Forestry Specialist Financial Analyst	6
Fifth Year	1	Implementation of Field Activit. Environmental Monitoring Initiation of Phase II Preparation Study	Task Manager Forestry Specialist Environmental Specialist Agronomist	8
	2	Implementation of Field Activit. Follow-Up Preparation of Phase II Study PCR	Task Manager Forestry Specialist Environmentalist Training Specialist Agronomist	8

THE GABONESE REPUBLIC
PROJET FORET/ENVIRONNEMENT
ANALYSE ECONOMIQUE

I. COMPOSANTE AMENAGEMENT

A. Analyse Economique

Hypothèses de base

1. La composante porte sur 40.000 hectares de peuplements naturels d'Okoumé d'un âge moyen de 15 ans sur lesquels l'intervention du projet consisterait en un inventaire, la délimitation des blocs, et, l'amélioration des peuplements par éclaircies. L'encadrement nécessaire existe déjà, mais il est nécessaire de construire des logements en brousse et d'acheter les véhicules et motos pour le fonctionnement de cet encadrement.

2. L'échelonnement des actions est résumée dans le tableau ci-dessous :

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Constructions	x	-	-	-	-
Achat véhicules &	x	-	-	-	-
Matériel divers	x	-	-	-	-
Inventaire (ha)	x	5.000	5.000	15.000	15.000
Délimitation (ha)	x	5.000	5.000	15.000	15.000
Eclaircies (ha)	x	5.000	5.000	15.000	15.000

3. L'année 1 est réservée aux constructions et à la mise en place du personnel et de ses moyens de fonctionnement. A l'exception des opérations de délimitation qui nécessiteraient la location de gros matériel, les autres actions entraînent seulement des dépenses de main d'oeuvre.

Les Coûts

4. On appliquera aux coûts financiers les facteurs de conversion suivants afin d'éliminer les taxes.

Constructions et entretien	0.5
Ouverture des limites	0.7
Achat véhicules, motos	0.5
Fonctionnement véh.cules	0.6

5. Le coût économique de la main d'oeuvre a été estimé à 50 % du coût d'une main d'oeuvre permanente (6.000 FCFA par jour) en raison de la faible possibilité d'emploi dans la zone du projet.

6. On a ajouté 10 % d'imprévus physiques sur les coûts d'investissement.

Les Bénéfices

7. Quelle que soit la densité d'arbres à l'hectare, la surface terrière maximale atteinte par un peuplement d'Okoumé est de l'ordre de 55

m2 par hectare. Si l'on considère qu'avec ou sans éclaircie, ce maximum serait atteint il est connu qu'un peuplement naturel sur lequel on n'intervient pas, a une croissance qui tend vers zéro lorsque le diamètre moyen atteint 55 cm alors que les éclaircies permettent d'atteindre le diamètre d'exploitabilité (60 et plus) vers l'âge de 50 ans.

8. En conséquence, on estimera que sans projet, l'exploitation de 3/4 du volume sur pied serait repoussée très loin dans le temps, et en tous cas au delà d'une période où les bénéfices peuvent être comptabilisés par actualisation. Les bénéfices sans projet se limitent donc à un maximum de 60 m3 par hectare. Avec projet, les bénéfices correspondent à l'exploitation d'un volume de l'ordre de 160 m3 par hectare (moins de la moitié d'une plantation artificielle) à l'âge de 50 ans soit, avec un échelonnement de l'exploitation, entre les années 30 et 33 du projet. (Age supposé lors du début du projet : 20 ans).

9. La valeur économique du bois sur pied après application des projections de prix de la Banque mondiale a été estimée à : 11.400 FCFA par m3

Les Résultats

10. Le flux économique des coûts et bénéfices apparait dans le tableau 1.

11. La taux de rentabilité économique atteint 18 %. Si l'on diminue les bénéfices de 10 % le taux descend à 16.3 %. En augmentant les coûts de 10 % le taux atteint 16.4 %. En diminuant les bénéfices de 10 %, et en augmentant les coûts de 10 %, le taux s'établit à 15 %.

Conclusions

12. L'aménagement des peuplements naturels d'Okoumé en zone 1 est une opération acceptable du point de vue purement économique, malgré des hypothèses conservatrices sur les bénéfices : il est très probable en effet, que dans la situation sans projet, le volume exploitable à l'année 40 serait beaucoup plus faible que celui estimé dans cette analyse.

13. Cette opération apparait essentielle si l'on veut sauvegarder le potentiel de volume exploitable dans une zone réservée aux exploitants nationaux. Il n'est pas possible dans le cadre du présent projet, de couvrir des surfaces plus importantes, car la composante absorberait une part trop élevée des coûts du projet.

II. TRAVAUX SUR PLANTATIONS D'OKOUME

Hypothèses de Base

14. Sur un total d'environ 30.000 ha de plantations existantes, le projet interviendrait sur la surface totale en ce qui concerne la couverture aérienne et la délimitation, sur 3.400 ha pour les éclaircies (peuplements de 12 ans d'âge moyen) et sur 2.000 ha pour l'entretien (peuplements de 7 ans d'âge pondéré).

15. L'infrastructure logements fait partie du renforcement général du service forestier, tandis que les dépenses de couverture aérienne peuvent être assimilées à des études qui ne sont pas prises en compte dans l'analyse économique.

16. Il est d'ailleurs impossible de mesurer les bénéfices qu'entraîneraient une meilleure connaissance, la délimitation et une surveillance accrue sur les plantations trop âgées pour qu'on y intervienne par entretiens et éclaircies.

17. On se limitera donc aux bénéfices quantifiables (éclaircies, entretien) sur un total de 5.400 ha.

18. Les dépenses (coûts de délimitation, d'achat de véhicules et leurs frais de fonctionnement) ont été divisés par 5 pour tenir compte du ratio 5.400/30.000.

19. Les coûts financiers ont été convertis en coûts économiques par l'application des principaux facteurs de conversions suivants :

Achat Véhicules :	0.5
Entretien et Fonctionnement :	0.6
Ouverture Limités :	0.7
Main d'Oeuvre :	0.5

20. Pour les 2.000 ha d'entretien, on ajoutera en année 7 les dépenses d'éclaircie qui seraient à réaliser sur des peuplements alors âgés de 12 ans.

Bénéfices

21. Eclaircies (3.400 ha) : L'exploitation aurait lieu en année 34 du projet et porterait sur 360 m³ par hectare. Sans projet, le volume exploitable n'atteindrait que 90 m³ soit le quart du potentiel normal.

22. Entretien (2.000 ha) : après l'intervention en éclaircie à l'année 7 l'exploitation aurait lieu en année 39. Sans projet, le volume exploitable atteindrait un maximum de 50 m³, à la même année 39.

23. La valeur économique du bois sur pied a été estimée à 11.400 FCFA par mètre cube.

Résultats

24. Le taux de rentabilité atteint 13.3 % si l'on diminue les bénéfices ou augmente les dépenses de 10 % ce taux tombe respectivement à 12.4 % et 12.6 %. L'augmentation des coûts de 10 % et la diminution simultanée des bénéfices de 10 % donnent un taux de 11 %. Même si l'on peut toujours contester les hypothèses de bénéfices sans projet, l'opération apparaît rentable.

III. VALEUR ECONOMIQUE DU BOIS SUR PIED

Okoumé

Valeur Economique du Bois sur Pied

25. Bases de Calcul : Le prix FOB moyen a été calculé à partir du mix de qualités livrées en 1990 à la SNBG. Même s'il est probable que les pourcentages par qualité augmenteront pour les QS et CI, au détriment des basses qualités (CE et CS) par suite d'une meilleure commercialisation (minimum de déclassements), il faut tenir compte d'une évolution des marchés vers la banalisation des essences utilisées pour le contreplaqué.

<u>Qualité</u>	<u>Pourcentage</u> <u>%</u>	<u>Prix FOB</u> <u>au M3</u> <u>(FCFA)</u>	<u>Pondéré</u> <u>FCFA</u>
LM	0.3	58.400	1.752
QS	8.4	53.800	4.519
CI	45.7	42.300	19.331
CE	35.2	35.700	12.566
CS	<u>10.4</u>	<u>25.200</u>	<u>2.621</u>
Total	100.0		40.789

26. On a donc adopté le chiffre moyen de 40.000 FCFA par mètre cube au niveau FOB.

27. La décomposition des coûts à partir du niveau FOB a été effectuée hors taxes et droits de sortie. Une étude sur la fiscalité montre que les taxes sur l'exploitation forestière s'élèveraient (hors DTS) à 5.400 FCFA par mètre cube. On a en conséquence déduit ce montant du prix de revient d'exploitation évalué à 29.000 FCFA.

28. Les marges forestières et de commercialisation ont été estimées à 6 % du prix FOB.

29. La valeur économique du mètre cube d'Okoumé sur pied apparaît ci-dessous (FCFA)

Prix FOB	40.000
Frais de Mise à FOB	1.200
Marge Forestière	2.400
Frais d'Exploitation	<u>23.600</u>
Total Coûts	29.600
Valeur Economique sur Pied	11,400

30. Les projections de prix de la Banque mondiale pour les grumes sont données pour 2 essences (Meranti et Sapelli) en prix constants 1985. Après application d'un facteur de conversion (1.495), qui mesure l'inflation entre 1985 et 1990 les projections de prix apparaissent comme suit :

(US Dollars)	<u>Année</u> <u>1990</u>	<u>Année</u> <u>2000</u>	<u>Augment.</u> <u>%</u>
Meranti	246.7	276.6	12
Sapelli	290.0	310.9	7

31. La moyenne entre ces deux projections, soit 9.5 % d'augmentation, a été adoptée pour l'Okoumé, et en l'absence de projections au delà de l'an 2000, aucun changement de prix n'a été pris en compte. En conséquence, la valeur économique de l'Okoumé sur pied à l'année 40 du projet a été estimée à 10.400 + 9.5 % soit 11.400 FCFA (arrondi).

Tableau 1

Flux Economique des Coûts et Bénéfices

An	Aménagement Peuplements Naturels (40.000 ha)				Plantation d'Okoumé (5.200 ha)			
	Volume (m ³)		Bénéfice Economique ('000 FCFA)		Volume (m ³)		Bénéfice Economique ('000 FCFA)	
	Sans Projet (60m ³ /ha)	Avec Projet (160m ³ /ha)	Sans Proj	Avec Proj	SP (50m ³ /ha)	AP (360m ³ /ha)	SP	AP
1	-	-	-	(45.000)	-	-	-	(45.100)
2	-	-	-	(55.400)	-	-	-	(68,600)
3	-	-	-	(85.000)	-	-	-	(35.470)
4	-	-	-	(85.000)	-	-	-	(55.470)
5	-	-	-	(97.500)	-	-	-	(29.650)
6	-	-	-	(20.000)	-	-	-	0
7	-	-	-	-	-	-	-	(38.040)
8	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-
10-29	-	-	-	-	-	-	-	-
30	300.000	800.000	3.420.000	5.700.000	-	-	-	-
31	300.000	800.000	3.420.000	5.700.000	-	-	-	-
32	900.000	2.400.000	10.260.000	17.100.000	-	-	-	-
33	900.000	2.400.000	10.260.000	17.100.000	-	-	-	-
34	-	-	-	-	20.000	144.000	228.000	1.413.600
35	-	-	-	-	30.000	216.000	342.000	2.120.400
36	-	-	-	-	40.000	288.000	456.000	2.827.200
37	-	-	-	-	80.000	576.000	912.000	5.654.400
38	-	-	-	-	-	-	-	-
39	-	-	-	-	100.000	720.000	1.140.000	7.068.000
40	-	-	-	-	-	-	-	-

Peuplements Naturels

Taux de Rentabilité: 18 %
Valeur Actualisée: FCFA 2 milliards.

Plantations

Taux de Rentabilité: 13.3 %
Valeur Actualisée: FCFA 360 millions.

THE GABONESE REPUBLIC
FORESTRY AND ENVIRONMENT PROJECT
IMPLEMENTATION ARRANGEMENTS

1. **MEF :** The Ministry of Waters and Forestry is the main Institution responsible for implementing the government's strategy for the forestry sector. It would coordinate and oversee various studies to be undertaken under the project, undertake planning activities, participate in the assessment of the project components and their developmental impact.
2. **DFC :** The Directorate of Wildlife under the aegis of MEF, is primarily responsible for the enforcement of legal issues related to the environment, the prevention of poaching and other actions which could have a negative impact on the environment, the formulation of the master plan for wildlife conservation, the implementation of sound management and conservation techniques for wildlife resources. DFC would be responsible for coordinating actions for the creation of reserves envisaged under the project, and would assist in the implementation of the various environmental studies and surveys.
3. **DGF :** The Directorate General of Forestry. Under the tutelage of MEF, this Entity is primarily responsible for the implementation of forest inventory and rehabilitation programs. DGF would be responsible for the design and implementation of work programs defined under the project. It would carry out all technical operations related to the preparation of the inventories, the start-up of silvicultural operations, and the forest management activities. Finally It would assist other directorates (DFC, DGE) in elaborating monitoring guidelines for assessing the environmental impact of field activities.
4. **METPN :** The Ministry of Environment, Tourism and National Parks. It is mainly responsible for the strategic planning of environmental issues. This Ministry would, in concert with DFC oversee day-to-day execution of project activities in the reserves areas and through DGE, have the primary responsibility in the undertaking of environmental studies.
5. **PCU :** Project Coordination Unit of the Ministry of Waters and Forestry. This Unit would have primary responsibility for the monitoring and evaluation of the project. It would be assisted in that task by a Permanent Working Nucleus (NPT) comprised of staff from (MEF, METPN, MPE). The PCU would provide assistance to DGF, DFC and DGE in preparing the semi-annual progress report and assess progress against agreed programs of operations and targets. Finally, the PCU would be responsible for financial management, procurement, and audits.

6. DGE : The Directorate General of Environment. Under the tutelage of METPN, this Directorate is responsible for the elaboration and implementation of Government policies pertaining to the environment and the protection of the nature. It would have overall responsibility for undertaking various environmental studies envisaged under the project. DGE would in concert with DFC be responsible for coordinating actions for the creation of reserves.
7. ENEF: The National School of Waters and Forestry. ENEF is the main implementing Institution under the tutelage of MEF responsible for promoting and carrying out a Forestry and Environment Training Program. ENEF would implement a management plan for the conservation for the Mondah Forest.
8. NGOs. Environmental NGOs (CENA, FEG, IADR). The primary responsibility of the NGOs is to raise the awareness of local communities on environmental issues. They would comment on the project viability/soundness and probable impacts during its implementation, review project progress, and address other policy issues related to the forestry and Environment Sector.

THE GABONESE REPUBLIC

FORESTRY AND ENVIRONMENT PROJECT

Key Indicators

<u>Activity/Objective</u>	<u>Indicator</u>	<u>Target 1/</u>	<u>Achieved</u>	<u>Achievement Rate %</u>
<u>Program Inputs</u>				
Construction of Field Office	No.			
Fielding of MEF field Staff	No.			
Procurement of Vehicles and Equipment	No., value, timing			
Recurrent costs by Category	planned budgets			
Investment costs by components	planned budgets/value			
<u>Program Delivery</u>				
Project Coordination Committee	dates, minutes			
Seminars, Workshops	dates, conclusions, No. of participants			
Induction training for staff	dates, No. of participants			
Forest Inventory	area covered, phasing			
Studies	dates, conclusions			
Research	No. trials, results			
Training	No. students			
Reserves	placement in private sector No., level of protection			
<u>Program Impact</u>				
Impact of Institutional strengthening in field areas	trend analysis, reduction in poaching, better statistics on logging practices			
Status of studies	number of new projects, actions in the sector			
Forest Management	knowledge of forest ability to devise pilot management plans			
<u>Program Review and Reporting</u>				
Annual program and budget		date	by September 30	
Quarterly report		date		
Bank supervision		date		
Annual closing of accounts		date		
<u>Compliance with Covenants</u>				
	<u>Section</u>			
Submission of external audit to the Bank	4.01 (b)	date		
Establishment of Project Coordination Committee	5.01 (a)	date		
Deposit of 150 million CFAF	5.01 (b)	date		
Adopt Environmental law	5.01 (c)	date		
Staffing Plan to the Bank	5.01 (d)	date, timetable		
Mid-term review	3.04	June 1995		

1/ As specified in SAR and/or Annual Work Programs and Budgets.

