PD - ABP - 501

UNCLASSIFIED

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

CAPITAL ASSISTANCE PAPER

Proposal and Recommendations
For the Review of the
Development Loan Committee

GABON - ACCESS ROADS

AID-DLC/P-2103

UNCLASSIFIED

DO NOT REMOVE

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

A.I.D. Loan No. 625-W-013
Capital Assistance Paper No.AID-DLC/P-2103
Project No. 625-22-310-810

LOAN AUTHORIZATION

A.I.D. Loan No.: 625-W-013
Provided Under : FAA Section 106, Selected Development Problem
For : Gabon -- Access Roads

Pursuant to the authority vested in the Assistant Administrator for Africa of the Agency for International Development ("A.I.D.") by the Foreign Assistance Act of 1961, as amended, and the delegations of authority issued thereunder, I hereby authorize the establishment of a loan pursuant to Section 106 of said Act to the Government of Gabon ("Borrower") of not to exceed Five Million United States Dollars ($5,000,000) to assist in financing the United States Dollar and local currency costs (such local currency costs not to exceed the equivalent of Five Hundred Thousand United States Dollars ($500,000)) of road construction commodities and commodity-related services for the Gabon Access Roads Project and subject to the following terms and conditions:

1. Terms of Repayment and Interest Rates:

(a) The Borrower shall repay the loan to A.I.D. in United States dollars within forty (40) years from the date of the first disbursement under the loan, including a grace period of not to exceed ten (10) years.

(b) The Borrower shall pay to A.I.D. in United States dollars, interest on the unrepaid principal, and on any interest accrued thereon, at the rate of two percent (2%) per annum during the grace period and three percent (3%) per annum thereafter.

2. Other Terms and Conditions:

(a) Except for ocean shipping, goods and services financed under the Loan shall have their source and origin in Gabon or countries included in A.I.D. Geographic Code 941, provided, however, that marine insurance may be financed under the Loan only if it is obtained on a competitive basis and any claims thereunder are payable in freely convertible currencies. Ocean shipping financed under the Loan

shall be procured in any country included in A.I.D. Geographic Code 941, not including Gabon.

(b) The Loan shall be subject to such other terms and conditions as A.I.D. may deem advisable.

Assistant Administrator for Africa

6/30/75
Date

B

PD-ABP-~~[illegible]~~
501

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

UNCLASSIFIED

AID-DLC/P-2103

June 12, 1975

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Gabon - Access Roads

Attached for your review are recommendations for authorization of a loan to the Government of Gabon (Borrower) of not to exceed Five Million United States Dollar ($5,000,000) to assist in financing the United States Dollar and local currency costs (such local currency costs noto to exceed the equivalent of Five Hundred Thousand United States Dollars ($500,000) of road construction commodities and commodity-related services for the Gabon Access Roads Project.

This loan proposal is scheduled for consideration by the Development Loan Staff Committee on Wednesday, June 18, 1975; please note your concurrence or objection is requested by close of business on Monday, June 23, 1975. If you are a voting member a poll sheet has been enclosed for your response.

Development Loan Committee
Office of Development
Program Review

Attachments:

Summary and Recommendations
Project Analysis
ANNEXES A - H

C

PROJECT PAPER

GABON ACCESS ROADS

TABLE OF CONTENTS

List of Tables

PROJECT PAPER

MAY 28 1975

GABON ACCESS ROADS

PART I : SUMMARY AND RECOMMENDATIONS

Project Development Team:

Loan Officer : E. M. Gilbert, REDSO/WA
Lawyer : J. R. Phippard, REDSO/WA
Engineer : A. L. Best, REDSO/WA
Project Manager : J. W. Koehring, RDO/Yaounde

1. Borrower: Government of Gabon

   Executing Agency: Department of Public Works of the Ministry of Public Works, Transport and Civil Aviation.

2. Guaranty: Since the Government of Gabon itself is the borrower, no separate guaranty will be requested.

3. Loan:

   A. Total Project Costs (1)

Total project costs expressed in constant January 1975 prices at the current exchange rate of $1 = 210 FCFA are estimated as follows:

Total construction costs Phase I Access Road Program:

$6,165 million FCFA = $29.36 million

Breakdown by road segment:

Alembe Bridge:

383.6 million FCFA = $1.83 million over one year construction period, Jan 1977-Jan 1978

Lope Station Road:

$279.2 million FCFA = $1.33 million over six months construction period, June 1978 - December 1978.

(1) Not adjusted for probable inflation from January 1, 1975 through to project completion. See Section I.C, Table I, page 9.

Koumameyong-Booue Road:

2,203.0 million FCFA = $10.49 million over 18 month construction period, January 1977 - June 1978.

Booue (M'Badi) - Dilo Road:

3,299.0 million FCFA = $15.71 million over two year construction period, January 1977 - December 1978.

For a detailed cost breakdown by inputs, see "Financial Analysis" in Part II, Section 2.

B. Amount of A.I.D. Assistance.

Total Loan Amount:	$5,000,000
Foreign Exchange:	$4,500,000
Local Cost Component:	$ 500,000

Terms: 40 years including a 10 year grace period. Interest rate 3.0 percent during repayment period and 2.0 percent during grace period.

C. Other Donor Input:

Federal Republic of Germany (FRG):

29.5 million DM = $12.67 million (loan)

D. Borrower Contribution (GOG):

The GOG will contribute the balance of construction costs, estimated at $11.3 million based on January 1975 prices. The real price at the time of construction will be considerably higher. For an analysis of shifting value of GOG and other donor contributions over time, see table 1 in Part II, Section 1, Project Background.

4. Project Description.

The Gabon Access Roads project as described and analyzed in this Project Paper covers the original Phase I Access Road Program planned by the GOG to be constructed in the Second Forest Zone between 1977 and 1979. This program comprises four separate road and bridge elements to be financed by the GOG based in part on loans from the FRG and AID. The segments covered are the Alembe bridge and approaches; the Lope station road, the Koumameyong-Booue road; and the Booue (M'Badi)-Dilo road, including bridges over the Ivindo and Dilo rivers. In May 1975 the GOG added two additional roads to the Phase I network which were formerly planned for

Phase II in the early 1980s. The first is the reconstruction and extension of the existing road from the Lope station south for 111 km along the Offoue river. Subject to an economic feasibility study, the AFDB is considering a loan of 5 million units of account ($6 million) to finance this road. The second additional road is the Boundji Antenna road starting at the Boundji station and extending 60 km northeast with a 30 km spur to be completed in 1982. These two new additions to the Phase I network are not treated in this Project Paper, since they will not be financed by the AID loan. Although the modernization of the Offoue river road will have a beneficial effect on the Lope spur, the Boundji road will have little or no effect on the other Phase I roads.

The main purpose of the roads and bridges to be financed under this project is to provide a link between the forest zone and the railroad stations at Alembe, Lope and Booue, along which timber can be transported by commercial logging companies from the forest to the railroad. Future annual log production in the Second Forest Zone is estimated at an average of 1,570,000 tons per year for each of the 17 years of expected production. Until last year when petroleum surpassed wood as the number one export earner for Gabon, forest products accounted for 35 percent of Gabon's exports. In 1972 timber exports were valued at 17.8 billion FCFA or about $71 million at the then current exchange rate.

Based on an agreement informally negotiated by AID with the GOG and the FRG, AID will finance, and the GOG will provide directly to the contractors, the following items needed for the construction of the four original segments cited above: steel culverting, metal bridge spans and other equipment materials and spare parts whose source and origin are in Code 941 countries, up to a maximum of $5 million. Of this amount $500,000 can be applied to certain local costs of the four segments. The FRG loan will finance foreign exchange costs of two of the four roads, the Koumameyong-Booue Road and the M'Badi Dilo road, up to a maximum of DM 29 million. All costs not covered by the AID and FRG loans will be borne by the GOG. The AFDB will not participate in the financing of these four original Phase I segments.

5. Logical Framework Linkages.

(This section should be read in conjunction with the logical framework matrix, which is attached as Annex D).

The Sector Goal of this activity is the development of a transportation infrastructure base in Gabon for the benefit of the national economy to facilitate the exploitation and export of natural resources and to promote development of the interior of the country. The basic ingredient in this infrastructure

development goal is the Transgabon railroad, complemented by a network of access roads, bridges and a port.

Basic assumptions supporting the long-term value of the goal and project are:

A) that the GOG will continue to place top priority on the development of transportation infrastructure, sufficient to ensure the completion of the railroad and road networks;

B) that access to the interior of the country thereby provided will permit orderly and effective exploitation of timber and mineral resources. (This assumption constitutes the essential linkage between the sector goal and project purpose);

C) that the construction of the railroad and the access roads, while separately funded projects from different sources, are both integral parts of the sector goal.

The Project Purpose is to provide a means to exploit efficiently Gabon's forestry resources, through the construction of access roads and bridges to link the railroad to the untapped forest area of central Gabon.

Assumptions at the purpose level are:

A) that the access roads are totally dependent on the railroad and would not be viable on their own;

B) that the road construction schedule is geared to scheduled progress of construction of the railroad and its stations so that the roads will be completed just before the stations are opened;

C) that timber exploitation will be planned in stages over a 17-20 year period, with attention given to ecological factors;

D) that log FOB prices, having fallen recently, will rise again and stabilize at a somewhat higher price.

The outputs of the project are the actual construction of the four separate road and bridge components described in Part I, Section 4, Project Description.

Assumptions at the output level are:

A) that since the U.S. loan is fixed at $5 million rather the total cost of specific roads, the GOG will bear all residual costs associated with the construction of these roads and bridges, beyond the contributions of the U.S. and other donors, including additional costs resulting from price escalation;

B) that final design and bid documents will be completed before the end of 1975 as scheduled to permit contract execution by July 1976.

Project inputs will be $5 million in the form of U.S. and Code 941 equipment, materials and possibly services. A.I.D.-financed inputs will include road building equipment, metal culverts, reinforcing steel and spare parts.

In addition A.I.D. has separately funded on a grant basis a 5 man/months economic pre-feasibility study to establish the economic justification of these roads in the context of the railroad.

Assumptions at the input level are:

A) that the basic conclusions and financial projections of the economic study (undertaken by an outside consultant - Louis Berger, International) are generally accurate and reliable;

B) that loan will be executed as planned by FRG to assist in the financing of this project;

C) that GOG and other donors will agree to the concept of joint financing of the overall road program, and that eligible U.S. or Code 941 goods and services can be identified to utilize 90 per cent of the $5 million loan, with 10 per cent allowable for local costs.

6. Export-Import Bank Clearance

Export-Import Bank clearance was obtained on May 27, 1975.

7. Recommendation

Authorization of a Loan of $5.0 million to finance foreign exchange and local currency costs for the Gabon Access Roads project consistent with the proposed Loan Authorization attached hereto as Annex F.

PART II : SECTION 1. PROJECT BACKGROUND.

A. History of Proposal

During the past decade the top development priority for the Government of Gabon (GOG) has been, and continues to be, the construction of the Transgabon railroad and ancillary projects associated with it, such as the timber port at Owendo and the minerals port at Santa Clara, and the network of access roads needed to service the planned rail stations. After years of planning and negotiating, a major step was taken on November 26, 1974 when the GOG signed a contract with a 13-firm European consortium for the construction of the Transgabon railroad from the port of Owendo, adjoining Libreville, to the city of Franceville in the southeastern interior. This contract in the amount of 84 billion CFA Francs ($357 million) covers earthwork, structures, drainage, furnishing of ballast and laying of track. A separate contract covers supervision of construction by four firms, of which one is American (TAMS). Rolling stock, including 12 locomotives, is also to be furnished separately, with the General Electric Corporation to provide half of the locomotives through Ex-Im Bank financing. The sections of the railroad from Owendo to Booue, and from Booue to Franceville were originally planned as the first and second phases but were consolidated by President Bongo during the negotiations in the summer of 1974. A planned third phase linking Booue to Mekambo/Belinga, a region in the northeast rich in iron ore deposits, will be undertaken in the 1980s.

The cost of the railroad construction contract was more than double the 1973 estimates. Since pledges and commitments from foreign sources total about 28 billion CFA Francs, the GOG has assumed responsibility for the balance, a far greater share than originally expected.

A tentative commitment to provide a measure of concessional U.S. assistance in connection with the building of the Transgabon Railroad dates back to an August 1969 letter from President Nixon to President Bongo, which pledged $5 million in U.S. assistance to construction of the railroad.

After efforts by the GOG to have the amount of the AID loan raised, the U.S. offered for consideration in a letter of May 13, 1971 from Assistant Secretary of State Newsom to President Bongo a $25 million package of U.S. funding, wherein the AID loan would remain $5 million and up to $20 million would be provided by the Export-Import Bank in direct loans and loan guarantees in connection with the financing of the railroad.

U.S. participation was contingent on firm financing for the whole project and confirmation by the IBRD that the railroad was economically feasible. When a World Bank study in 1972 raised questions as to the railroad's feasibility, the Bank withdrew as

a prospective lender. Nevertheless the GOG proceeded with its plans to construct the railroad and to attract foreign sources of funding. A subsequent study by the European Development Fund (FED) produced somewhat higher projections of earnings from mineral exports and a more positive conclusion about the railroad's economic feasibility. However, based on the World Bank's evaluation, AID switched its interest from the railroad itself to the feeder road network which would be constructed to provide links at the various rail stations in the Second Forest Zone and would serve as lumber evacuation routes to the railroad.

At a July 1973 meeting of prospective donors in Brussels, A.I.D. offered up to $5 million in loan financing for the construction of auxiliary access roads to the railroad, whose primary economic use would be for the evacuation of timber to the port of Owendo for export. This offer was conditional on two factors: 1) that construction of the railroad would actually take place and 2) that any roads to be financed would meet A.I.D.'s criteria for economic and technical feasibility. At the same meeting an offer was made by the U.S. Export-Import Bank to finance up to $20 million in eligible U.S. goods and services in connection with the construction of the railroad.

Subsequently the GOG identified three specific road segments, including two bridges, which it proposed to construct with the prospective A.I.D. loan of $5 million. These road segments were part of the Government's planned network of feeder roads to be built in conjunction with the railroad. The first phase of the road program revised by OCTRA (the GOG Railway Authority) in January 1975 to be undertaken during the period 1977-1979 consists of the following construction:

Phase I roads:

250 m bridge and 150 m approaches over the Ogooue river to the Alembe station;

5 km link road from the Ayem-Mikongo road to the Lope station;

48 km reconstruction of the Koumameyong-Booue station road;

67 km Booue (M'Badi)-Dilo River Road, with bridges over the Ivindo and Dilo rivers.

In May 1975 the GOG added two additional roads to Phase I:

- 111 km reconstruction of the Offoue River road;
- 60 km Boundji Antenna road with a planned 30 km spur to be added in 1982.

The latter two additional roads will not be treated in this Project Paper since they will not be funded from the AID loan.

B. Other Donor Assistance

The Federal Republic of Germany (FRG) was requested to finance the foreign exchange costs of the M'Badi-Dilo road and the Koumameyong-Booue station road. The FRG has allocated a 29.5 million DM loan for this purpose which is expected to be executed in early 1976.

The African Development Bank (AFDB) was originally asked to finance a portion of the Koumameyong-Booue road but this specific assignment was later withdrawn by the GOG and listed under German financing. AFDB still has a loan of 5 million units of account (about $6 million) allocated and as of May 1975 this loan is expected to be used to finance the Offoue River road. The AFDB will not participate in the financing of any of the four road and bridge segments covered by this Project Paper.

C. The Cost Escalation Problem

With respect to the four segments covered by this PP, current pledges from foreign donors total $17.67 million (U.S. $5 million and FRG $12.67 million). The GOG has accepted responsibility for covering all costs which are not met through the loans from the foreign donors. Since costs are escalating rapidly, the GOG share, originally estimated at 37% in December 1973 (when the AFDB loan was included in this section) may rise to 78% by the time construction is completed if other donors do not raise the amount of their financing. This point is illustrated in the following table, prepared by REDSO consultant, Louis Berger, Inc.:

Table 1 (million FCFA)

	At December, 1973 Prices (1)		Probable Costs (2)	
	Value	%	Value	%
A.I.D. (US $ 5 million)	1,200.00	18.5	1,050.00 (3)	8.3
West Germany (30 million DM)	2,000.00	30.8	2,700.00 (4)	21.4
A.F.D.B. (5 million units of account)	900.00	13.8	-0-	
G.O.G.	2,400.00	36.9	9,882.07	78.2
TOTAL:	6,500.00	100.0	12,632.07	100.0

(1) OCTRA estimates December 1973. (adjusted by OCTRA to reflect cost esclations)
(2) Berger January 1975 estimates adjusted to reflect estimated cost escalations during life of project.
(3) $1US=210 FCFA.
(4) 1 DM=90 FCFA

The other interesting feature of this table is that by expressing each donor's loan in its own currency, it indicates the effect of currency fluctuations since 1973. Since the value of the German DM has risen with respect to the FCFA, the FRG loan shows an increase in monetary value expressed in FCFA at the time of construction, while the monetary value of the A.I.D. loan has dropped when expressed in FCFA because of the dollar devaluation. Assuming that the amount of both foreign donors' loans remain the same expressed in their own currencies, their percentages of the real total project costs at the time of construction all decrease, because of inflation, but the decrease in the real value of the U.S. loan is much greater than for Germany because of the combined effects of inflation and the fall in the dollar/FCFA exchange rate.

An accurate representation of real cost at a future point in time is difficult, given the present world monetary situation and variable rates of inflation which have been registered in recent years.

Notwithstanding these uncertainties, the following table attempts to estimate a projected inflation rate in Gabon's road building sector over the life of this project. The World Bank's global inflation projection for 1974-1978 (from the IBRD December 1974 Guidelines on Price Contingencies) constitutes the table's left hand column. The right hand column is an extrapolation based on the 1974 inflation rate of 22 per cent in Gabon's road-building industry, as calculated by the Department of Public Works and the Consulting Firm Gauff. Since this rate is 4 points above the IBRD global rate for 1974, a 4 point differential was also added to subsequent years based on the assumption that this relationship will remain fairly constant.

Table 2 — Inflation Projections:

YEAR	IBRD'S GENERAL RATE	RATE FOR GABON ROAD CONSTRUCTION
1974	18%	22%
1975	16%	20%
1976	14%	18%
1977	12%	16%
1978	12%	16%

Berger calculates that an overall cost escalation of 63 per cent will be incurred from January 1975 until project completion. Individual rates vary with the construction period, the earlier the completion date the lower the inflation rate. It is very clear that time lost through slippage will be particularly costly.

D. Views of Host Country and U.S. Country Team.

Notwithstanding these formidable potential cost increases, the GOG stands just as committed to the access road network as it is to the construction of the railroad itself. The U.S. Embassy in Libreville strongly supports the proposed $5 million A.I.D. loan as the most effective way of discharging the long-standing U.S. development assistance commitment to Gabon. In the absence of a bilateral USAID Mission in Gabon, agency affairs are represented by the A.I.D. Regional Development Office (RDO) in Yaounde, Cameroon, which also supports the proposed loan.

E. Views of other Donors.

The most important foreign donor is the FRG, with a loan now set at 29.5 million DM ($12.67 million). The FRG involvement in this project represents not only a significant German contribution to the overall Transgabon railroad, but also particular German interest in the timber production to be exported via the railroad and access roads.

F. Other Related Studies.

The following relevant studies have been undertaken and were considered in Berger's economic feasibility study.

F.A.O. Developpement Forestier: Couts en Exploitation Forestiere.

Technical report No. 12, April 1974. Report prepared by the CTFT and based on the work of D. MAZIER.

F.A.O. Developpement Forestier: Plan de Transport (zone d'attraction du Chemin de Fer). Technical report No. 13, November 1973. Report prepared by the CTFT and based on the work of D. MAZIER.

F.E.D. "Commentaire sur le Projet du Chemin de Fer Transgabonais."

Working Paper, May 1973.

International Bank for Reconstruction and Development. "Gabon - Appraisal of Railway Project Road Component." Draft dated June 6, 1972.

Republic of Gabon. Situation Economique, Financière et Sociale de la République Gabonaise en 1972. Direction de la Statistique et des Etudes Economiques, 1973.

Republic of Gabon. "Operations relating to the Transgabonese and Financial Aspects of the Operations Financed by AID." Translation of note submitted to AID by Office of Transgabonese Railroad, December 1973.

Republic of Gabon. Etude de routes dans la zone d'attraction du Chemin de Fer Transgabonais. Engineering Study prepared by H.P. Gauff, K.G., December 1974.

Republic of Gabon. Programme de développement routier (zone d'attraction du Chemin de Fer). Rapport de synthèse et annexes. Background study prepared by S.E.G.A., September, 1972. Revised edition April 1974.

Louis Berger, International. Pre-feasibility study of the Forestry Feeder Road System. 1975.

SECTION 2. PROJECT ANALYSIS

ECONOMIC ANALYSIS

The nature and composition of the economy of Gabon make it unique among developing countries, especially in Africa. Its basic distinguishing characteristic is its extraordinarily rich combination of mineral resources, most notably petroleum, but also including lumber, manganese and uranium. In addition, potentially rich iron ore deposits in the northeast region around Belinga remain unexploited and constitute the principal justification for the eventual construction of a planned third phase of the railroad from Booué to Belinga. The relative importance of leading exports is shown below for Gabonese Customs for 1972:

Table 3	Tonnage	Value (million FCFA)	% of Total Value
1. Forest Products	1,178,625	17,825	35.5
2. Petroleum	3,152,817	14,774	29.4
3. Manganese	2,161,476	13,392	26.6
4. Uranium	298	540	1.1
5. Cocoa	4,046	383	0.8
6. Other	309,238	3,365	6.6
Total:	6,806,500	50,279	100.0

The direction of Gabonese trade in that same year was principally toward France (41.7% of total exports; 58.3% of total imports), followed by the United States (10.9% of total exports; 11.2% of total imports) and West Germany (8.4% of total exports; 10.4% of total imports).

Ironically, Gabon's development problems and constraints are almost the exact opposite of those of most developing countries. First Gabon is under-populated and suffers from a chronic labor shortage, requiring substantial imported labor from nearby countries. In the absence of a recent census,

the World Bank estimates the entire population of Gabon at 500,000 although the Government maintains that the figure is closer to one million. Second, Gabon's rate of population growth is very low by LDC standards, about 1% in the present decade, owing primarily to health and nutrition conditions, particularly in the rural areas, which also suffer from a population exodus caused by the labor shortage in Libreville and other urban centers.

Agriculture, the mainstay of most developing countries, contributes less than 10 per cent to Gabon's GDP, the only cash crops being cocoa, coffee and groundnuts mainly from the northern part of the country. Bananas and manioc are the mainstay of the subsistence farmer. The relative importance of agriculture will probably decline even further as exports of oil, timber and eventually iron ore, expand.

Therefore the conventional concept of promoting development through assistance projects aimed at improved agricultural production does not apply to Gabon in any meaningful way. As potentially rich as Gabon is, it remains extremely underdeveloped in terms of capital infrastructure, lacking in particular a transportation network through the country's thick forests and rugged terrain. Accordingly, construction of the Transgabon railroad and related infrastructure including a minerals port and feeder roads has been for years, and remains, the top development priority of the Government of Gabon. The totality of this project represents an enormous investment over a period of many years, most of it to be borne by the GOG directly, drawing on its rapidly increasing oil revenues. The GOG justifies an investment of this magnitude on the grounds that Gabon cannot hope to develop its interior region without a transportation network which will enable its rich timber and mineral resources to be tapped and processed for export in an efficient manner.

The regional economy in the Second Forest Zone is largely based on subsistence agriculture. The area is very sparsely inhabited and aside from the rich tropical forest reserves, appears to have little immediately attainable development potential. The only prospect for a cash crop appears to be cocoa. A small quantity of cocoa (currently estimated at 1000 tons/year) is grown in the vicinity of Oyem, located at the northern edge of the zone, and is exported via the port of Kribi in Cameroon. Cocoa production around Oyem, as is true of most of Gabonese cocoa production is not very promising. Yields per hectare are low and the quality of the pods is poor. In an effort to rectify this condition, the GOG foresees an important development

project over the next ten years for the Oyem-area cocoa production. Financed by the African Development Bank and the French Government (CCCE), it is considered that this program will lead to the tripling of overall Gabonese cocoa production and an increase by 10,000 tons per year (to a total 11,000 tons/year) of regional production before 1985. The significance of this program lies in the fact that almost all of this production will later be exported through Libreville, rather than Cameroon, given the reduced transport costs introduced by the railway. Further, following up on the impetus provided by the cocoa expansion it would appear reasonable to consider that local cultivators will modernize and expand current coffee and food crop production, most of which would be eventually transported to Libreville through the Alembe station.

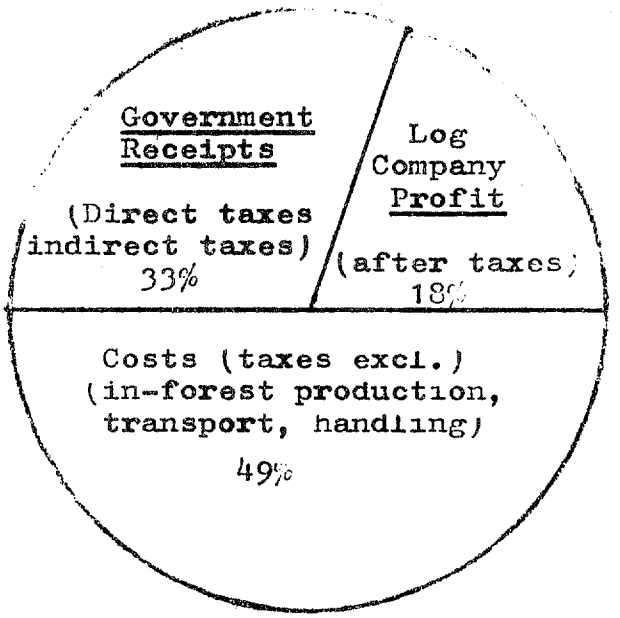
This relatively minor agricultural production aside, however, it is clear the major intended beneficiaries of the feeder road project will be the Government of Gabon through increased export earnings and tax revenues, and the lumbering industry.

In the case of the first three project roads, namely, the Alembe Bridge, the Lope spur road and the Koumameyong-Booué road (where an alternative road already exists) these benefits accrue most directly to the private logging firms in the form of transport savings, calculated at the following levels:

TRANSPORT SAVINGS (excluding taxes)

Project	Okoumé wood	Other species
Alembé Bridge	246 FCFA/ton	296 FCFA/ton
Lopé spur road	499 FCFA/ton	596 FCFA/ton
Koumameyong-Booué road	1,476 FCFA/ton	1,836 FCFA/ton

For the M'Badi-Dilo River road, however, the benefits derived from project construction are represented by the increase in national income generated by the logging operations over the road. The benefits are generally allocated to the state in the form of tax receipts and to the private logger in the form of company profit (after taxes and costs). Sharing between the public and private sectors of the benefits associated with logging operations have been calculated for the M'Badi-Dilo River road as follows:



Using the historical precedent associated with such operations in Gabon, Ivory Coast and Cameroon it may be assumed that 50 per cent of the logging company's after-tax profits will be reinvested (or maintained as liquid capital for future investment) and a remaining 50 per cent will be repatriated to the home office, most probably in Europe. Re-examining this from the perspective of the M'Badi-Dilo River forest production would indicate that only 9 per cent ($\frac{1}{2}$ x 18 = 9) of the total f.o.b. value of that production will be repatriated, leaving 91 per cent of the production value to fuel national economic development. It is in this sense, therefore, that log production resulting from the construction of a proposed feeder road should increase national income and employment, promote investment and furnish an important plus to the national balance of payments while providing substantial foreign exchange.

Other potential secondary benefits may stem from the construction of the project roads. Aside from insuring an inexpensive transport system for the evacuation of Second Forest Zone log production it has long been recognized that the successful development of rural areas in a general sense depends upon the establishment of two-way traffic flows. In terms of agriculture production, particularly in the hilly and heavily-forested Second Forest Zone where it is difficult to extend the cultivated area, there is a need to bring in increased inputs of fertilizers and pesticides. In turn the reduced transport cost brought about by the construction of new roads will encourage the farmer to produce more for an ever-enlarging market and contribute to a change from subsistence to more commercially viable forms of agriculture.

Further, though less easily quantifiable, it cannot be

denied that the development of rural feeder roads in connection with the Transgabonese Railroad, should enable an expansion of market-oriented activity, an increased mobility and an integration of the economy as a whole.

To calculate the economic benefits of this project, it was necessary to make certain assumptions about FOB timber prices. These assumptions and the rationale for them can be explained as follows:

F.O.B. TIMBER PRICE

Assessment of an average f.o.b. timber price for Gabonese woods has been rendered extremely difficult due to irregular price fluctuations in recent years. Generally timber prices were at a low level until 1972. They rose rapidly during 1973 and reached their highest level in early 1974. In June 1974, the market went into a slump, maintaining very low prices up to the present time.

It is therefore only with some uncertainty that we attempt to predict average prices for specific woods over any lengthy period of time. For the variety Okoumé the following table will give some indication of price fluctuations. After extensive interviewing with experts in the area the only general conclusion that could be drawn is that Okoumé prices should stabilize in the near future at a level slightly higher than now. We therefore have proposed the price of 23,000 FCFA/ton for the Okoumé 3rd choice, a category which corresponds to average quality presently being exported from Gabon. It should be noted that Okoumé accounts for over 85 per cent of Gabon's wood exports. This is the result of a conscious government policy.

Calculation of an average price for the species other than Okoumé becomes even more unrealistic, the only rule of thumb being that their respective market prices generally will be lower than that of Okoumé. Ilomba, for example, represents a lumber of low market value (between one half and one third of Okoumé), but, on the other hand, Acajou and Sipo often will exceed the market price of Okoumé.

After an examination of the topic we propose an average overall price of 16,000 FCFA/ton for all species other than Okoumé.

OKOUME MARKET PRICE

Table 4

in FCFA/ton

QUALITIES	1969 (1)	1970 (1)	1971 (1)	1972 (1)	8/1/73 (3)	Jan 73 (3)	Jan 75 (4)
- 1st choice	19 000	21 800	21 800	22 500	31 000	39 800	25 250
- 2nd choice	16 800	18 800	18 800	20 000	28 000	36 200	22 500
- 3rd choice (2)	14 500	16 200	16 200	17 500	25 000	32 300	
- saw-mill quality	12 000	13 100	13 100	14 400	20 400	26 500	16 000
- unclassified	7 500	8 700	8 700	9 600	14 500	16 400	
- canopy-branch	9 800	7 900	7 900	9 000	13 800	16 400	

(1) Direction de la Statistique et des Etudes Economiques - Situation Economique Financière et Sociale de la République Gabonaise en 1972.

(2) The 3rd choice is the average quality of production in Gabon.

(3) Development Forestier Gabon, Coût en Exploitation Forestière FAO No. 13, 1974.

(4) Marchés Tropicaux et Méditerranéens, 24 janvier 1975.

Table 5 : GABONESE LOG EXPORTS - 1972

Variety	Tonnage	Value (f.o.b.) ('000,000 FCFA)	% Total Value
Okoumé	821,704	12,081.3	85.3
Moabi	91,600	14.2	-
Ozigo	46,645	343.2	2.4
Limba	44,058	627.6	4.4
Ilomba	42,473	323.9	2.3
Tola	18,502	166.7	1.2
Acajou	9,111	83.0	-
Douka	6,657	69.2	-
Igaganga	3,967	33.5	-
Sipo	3,744	56.0	-
Tchitola	2,939	17.2	-
Olong	2,402	16.9	-
Bubinga	1,750	22.5	-
Zingana	1,077	22.8	-
Niangon	1,043	9.6	-
Sappeli	950	10.9	-
Ardoung	862	4.7	-
Débétou	837	10.5	-
Tiama	689	6.2	-
Dossié	416	5.9	-
Mutenye	370	4.5	-
Iroko	8	0.1	-
Other species	28,064	224.9	1.6
Total :	1,129,868	14,155.3	

Source : Bulletin Mensuel de Statistique, Jan., Feb., Mar. 1974

Measurement of Economic Benefits

Over the course of analysis of the four separate projects, we have identified and qualified four types of economic benefits:

1. Reduction in transport costs attributable to the utilization of the project road compared with an existing alternative.

2. Reductions in road maintenance costs over existing roads due to the deviation of log traffic over the project roads.

3. Taxes accruing to the State as a result of new lumbering activities generated by the construction of the project road.

4. Private sector profits (after costs and after taxes) which are a result of new lumbering activities generated by the construction of the project road.

Economic benefits 1 and 2 were deemed applicable to the Alembé bridge, the Lopé spur road and the Koumameyong-Booué road since existing alternatives could be utilized for evacuation of the projected lumber flows over these roads. Economic benefits 3 and 4 were applied to the M'Badi-Dilo River road, however, since evacuation of projected lumber flows over this road is only possible if the road is built. Without the project road it would be economically unfeasible to extract this log production.

Transport Costs Savings

The economic benefits derived from a reduction in transport costs consist in 1) reduced vehicle operating costs which follow from shorter distances traveled and improved running surfaces, and, 2) greater utilization of the less expensive rail transport as opposed to the road transport system.

These benefits were applicable only in the case where an existing alternative transport route could be utilized for the evacuation of logs. From the individual project perspective these transport alternatives become:

1. a) Utilization of Alembé Bridge and Alembé railroad station,
   versus
   b) Transport over paved 2-lane road to N'Djolé and N'Djolé railhead

2. a) Utilization of Lopé spur road and Lopé Station
   versus
   b) Transport over good laterite road to Ayem and Ayem railhead.

3. a) Utilization of Koumameyong-Booué Road and Booué Station
   versus
   b) Transport by road to N'Djolé railroad station over good laterite road between Koumameyong and Lalara and 2-lane paved road between Lalara and N'Djolé.

FINANCIAL ANALYSIS

As was previously indicated in the Economic Section the Gabonese economy is on a solid foundation and rapidly growing. Important export trade in tropical woods, petroleum, manganese and uranium and a small population give Gabon a per capita GNP second on the continent only to that of South Africa and Libya (1). Gabon's balance of payments situation is comfortably positive and her foreign exchange earnings are rapidly growing.

Given the very favorable financial situation of the GOG and given the high priority attributed to the railroad and associated feeder road network, one can be confident that the Government's capacity for loan repayment is entirely sufficient to cover the proposed A.I.D. loan.

An economic rate of return analysis and summary cost estimate of each project road was carried out by the consultant, and, with the exception of the Koumameyong-Booué Station road, reflects a favorable rate of return. Itemized project costs and IRR analyses follow for each segment of the project.

A summary of benefit and cost calculations is provided in the following table, including an estimate of real expenses at the estimated time of construction for each project.

Table 6

Project	Economic Rate of Return	Financial Costs: Jan. 1975 (FCFA)	Est. Real Costs at time of construction (FCFA)
Alembé	15.0%	383,640,000	645,360,000
Lopé	49.4%	279,240,000	565,080,000
Koumameyong-Booué	7.7%	2,203,055,000	5,660,120,000
M'Badi-Dilo River	36.5%	3,299,000,000	5,761,510,000
		6,164,935,000	12,632,070,000

(1) Estimated currently between $ 700 - $ 1,000/capita depending on the population estimate utilized.

The costs presented in the evaluation of the project roads are presented in terms of constant January 1975 CFA Francs (FCFA). The real costs of construction, given normal physical and price contingencies are unavoidably greater as illustrated in the preceding table. For the overall feeder road system, these calculations reveal a global increase of 63% over the January 1975 financial cost estimate.

In terms of the proposed A.I.D. $5,000,000 loan, therefore, it is foreseeable that it will represent a rapidly declining percentage of the total cost of project construction. Indeed, in December, 1973, the Transgabonese Railway Authority (OCTRA) proposed that the A.I.D. loan would represent 18.5% of the total construction costs and the present report would indicate that, in real construction cost terms, this number would have slipped to only 8.3%. The difference will either be compensated for by an increase in the participation of one or more of the project donors, or, most probably, by the Gabonese Government. If donor contributions do not increase before construction time the final funding proportions would shift so that the GOG, which originally (in 1973) expected to finance only 37 per cent of the road program from its own resources, would in the end be obliged to fund 78 per cent of total costs, including price escalation.

Finally, an estimate of local currency and foreign exchange needs was made for the forestry road system. The percentage of foreign exchange utilized for the payment of the diverse elements of construction is high, given that the local economy is not yet sufficiently developed to furnish the bulk of construction materials, equipment and services.

Due to her rapidly growing petroleum industry Gabon is capable, however, to provide a greater share of construction materials than many developing nations, namely: bitumen, diesel, fuel, gasoline, lubricating oil, cement, gravel and wood.

A global analysis of the Gabonese context would indicate that foreign exchange is necessary for 2/3 of total construction costs and local currency for 1/3 of these costs, evaluated at the following levels (for net-of-tax costs) : (These figures differ from Table I figures because of the tax effect.)

Table 7

Designation	Total F.CFA 1975	Total F.CFA Current	% of Total Costs
a) Local Currency	2,063.30	3,368.55	33
b) Foreign Exchange	4,126.61	6,737.11	67
c) Total	6,189.91	10,105.66	100

EVALUATION OF INDIVIDUAL COMPONENTS

Alembé Bridge and approach roads

Benefits

Two types of economic benefits have been identified in conjunction with the analysis of the Alembé Bridge:

- Savings in transport costs
- Savings in maintenance costs

A national income approach could not be used for the Alembé bridge because any log production susceptible to use the bridge could also be transported over 30 km of paved road to the Ndjolé station for a slightly higher transport cost. The principal advantage derived from construction of the bridge is therefore the savings in overall economic transport costs - 246 FCFA/ton for Okoumé and 296 FCFA/ton for other species.

The second advantage derived from the completion of the project is a reduction in road maintenance costs over the 30 km. road between the Alembé bridge and the Ndjolé station due to the total diversion of log traffic (130-300 e.u./day)* over the bridge.

* e.u. = equivalent unit. See Explanation in Glossary of Abreviations.

Costs

No irrevocable decision has yet been made to construct the Alembé railroad station, that decision being entirely dependent upon the decision to build the Alembé bridge. For the purposes of the economic evaluation, therefore, the cost of the construction of the station as well as its general operating costs must be considered as a project cost. Calculations forwarded by the OCTRA indicate a construction cost of 40,000,000 FCFA (taxes excluded) for the station and yearly operating expenses of 7,500,000 FCFA for personnel and overhead costs.

Added to these expenditures are new maintenance costs for the bridge and the approach roads as well as construction costs, calculated as follows:

Cost Estimate : Alembé Bridge and Approaches

(Jan. 1975 prices in FCFA)

Item	Quantity	Unit Price	Total
1. Clearing and grubbing	9,000 m2	128	1,152,000
2. Stripping	3,750 m2	92	345,000
3. Earthworks			
a) Cut	3,000 m3	372	1,116,000
b) Fill	2,250 m3	458	1,030,000
c) Rock excavation	75 m3	3,888	291,000
d) Unsuitable material	300 m3	1,263	378,900
4. Pavement			
a) Sub-base	450 m3	1,678	755,100
b) Base	1,200 m2	885	1,062,000
c) Prime coat	1,200 m2	183	219,600
d) Surfacing	1,050 m2	940	987,000
			7,336,600
5. Other			
a) Ditches b) Signs c) Access d) Expropriation	10 %		733,660
			8,070,260
6. Supervision	7 %		564,918
			8,635,178
		or :	8,635,000
7. Bridge over the Ogooué 250 m (length)		1,500,000	375,000,000
Total (taxes incl.)			383,635,000
Total (taxes excl.)			306,908,000

Internal rate of return

Calculation of benefits and costs over the life of the forest production susceptible to be transported via Alembé leads to a 15 % internal rate of return, as illustrated in Table 9. and summarized as follows :

	DISCOUNT RATE	
	12 %	18 %
Economic Benefits	388.18	305.04
Economic Costs	- 346.91	- 346.91
Net Present Worth	41.27	- 41.87

$$\text{Internal Rate of Return} = 12 + 6 \left(\frac{41.27}{83.14} \right) = 15.0\ \%$$

TABLE 9 : ECONOMIC ANALYSIS - ALEMBE (million FCFA)

YEAR	BENEFITS			COSTS				GROSS COSTS	CASH FLOW	12 %	18 %
	Transport savings	Maintenance savings	Gross benefits	Construction Bridge	Construction Station	Station Op. Costs	Maint. Costs				
1977				306.91	40.00			346.91	-346.91	-346.91	-346.91
1978	71.55	3.00	74.55			7.50		7.50	67.05	59.88	56.79
1979	91.10	2.40	93.50			7.50		7.50	86.00	68.54	61.75
1980	91.10	1.50	92.60			7.50		7.50	85.10	60.59	51.83
1981	75.34	1.50	76.84			7.50		7.50	69.34	44.10	35.78
1982	75.34	1.50	76.84			7.50		7.50	69.34	39.32	30.30
1983	39.34	0.60	39.94			7.50		7.50	32.44	16.45	12.00
1984	39.34	0.60	39.94			7.50		7.50	32.44	14.66	10.19
1985	39.34	1.50	40.84			7.50		7.50	33.34	13.47	8.87
1986	39.34	0.90	40.24			7.50		7.50	32.74	11.82	7.37
1987	39.34	0.90	40.24			7.50	3.58	11.08	29.16	9.39	5.57
1988	39.34	0.90	40.24			7.50		7.50	32.74	9.40	5.30
1989	39.34	0.90	40.24			7.50		7.50	32.74	8.41	4.49
1990	39.34	1.50	40.84			7.50		7.50	33.34	7.63	3.87
1991	39.34	0.60	39.94			7.50		7.50	32.44	6.65	3.21
1992	39.34	0.60	39.94			7.50		7.50	32.44	5.94	2.72
1993	39.34	0.60	39.94			7.50		7.50	32.44	5.29	2.30
1994	39.34	2.10	39.94			7.50		7.50	33.94	4.96	2.04
1995	19.55	0.90	41.44			7.50		7.50	33.94	4.96	2.04

Lopé Spur Road

Benefits

As with the Alembé Bridge the principal economic benefits derived from the project are transport savings and reduced road maintenance cost.

Without the project road, log traffic would be obliged to utilize 45 km of good laterite road from Kandjamabika II to Ayem Station. The savings to be derived from construction of the road have been set at 499 FCFA/ton for Okoumé and 596 FCFA/ton for other species.

Maintenance savings are computed over the 45 km section of laterite road for the diversion of all log traffic onto the project road (100-500 e.u./day).

Costs

Costs involved in the evaluation of the Lopé road are represented by new road maintenance costs and road construction costs, estimated on the following page. This analysis includes the cost of paving which it now appears the GOG may postpone or eliminate. This would reduce the cost of road construction by about 15 per cent or 32 million FCFA. Since this would be partially offset by somewhat higher maintenance costs, the net effect would not be significant on the already high internal rate of return for this road (almost 50 per cent).

Cost estimate : Lopé spur road

(Jan. 1975 prices in FCFA)

Item	Quantity	Unit Price	Total
1. Clearing and grubbing	264,000 m2	128	33,792,000
2. Stripping	110,000 m2	92	10,120,000
3. Earthworks			
a) Cut	88,000 m3	372	32,736,000
b) Fill	66,000 m3	458	30,228,000
c) Rock excavation	2,200 m3	3,888	8,553,600
d) Unsuitable material	8,800 m3	1,263	11,114,400
4. Pavement			
a) Sub-base	13,200 m3	1,678	22,149,600
b) Base	35,200 m2	885	31,152,000
c) Prime coat	35,200 m2	183	6,441,600
d) Surfacing	30,800 m2	940	28,952,000
5. Drainage			
a) Pipes Ø 0.80	220 m	45,140	9,930,800
b) Pipes Ø 1.00	220 m	54,900	12,078,000
			237,248,000
6. Other			
a) Ditches b) Signs c) Access d) Expropriation	10 %		23,724,800
			260,972,800
7. Supervision	7 %		18,268,096
		Total (taxes incl.)	279,240,096
		or :	279,240,000
		Total (taxes excl.)	223,392,000

Internal Rate of Return

Discounted cash flow calculations of the Lopé spur road, presented in Table 9, indicate a 49 % internal rate of return, summarized as follows :

	DISCOUNT RATE		
	12 %	45 %	50 %
Economic Benefits	1 317.63	252.62	219.75
Economic Costs	- 223.39	-223.39	-223.39
Net Present Worth	1 094.24	29.23	- 3.64

$$\text{Internal Rate of Return} = 45 + 5 \left(\frac{29.23}{32.87} \right) = 49.4\ \%$$

TABLE 9 : ECONOMIC ANALYSIS - LOPE (Million FCFA)

Year	BENEFITS			COSTS		GROSS COSTS	CASH FLOW	12 %	45 %	50 %
	Transport savings	Maintenance savings	Gross benefits	Construction	Maintenance					
1978				223.39		223.39	- 223.39	- 223.39	- 223.39	- 223.39
1979	103.78	2.25	106.03		0.77	0.77	105.26	94.00	72.63	70.21
1980	84.45	2.25	86.70		0.77	0.77	85.93	68.49	40.90	38.15
1981	57.77	2.25	60.02		0.66	0.66	59.36	42.26	19.47	17.56
1982	57.77	2.25	60.02		0.66	0.66	59.36	37.75	13.42	11.75
1983	127.39	5.40	132.79		0.79	0.79	132.00	74.84	20.59	17.42
1984	197.10	8.55	205.65		0.88	0.88	204.77	103.82	22.12	18.02
1985	268.21	12.15	280.36		28.31	28.31	252.05	113.47	18.58	14.81
1986	268.21	12.15	280.36		1.01	1.01	279.35	112.86	14.25	10.89
1987	268.21	12.15	280.36		1.01	1.01	279.35	100.85	9.78	7.26
1988	268.21	12.15	280.36		1.01	1.01	279.35	89.95	6.70	4.75
1989	268.21	14.40	282.61		1.01	1.01	281.60	80.82	4.79	3.38
1990	268.21	14.40	282.61		1.01	1.01	281.60	72.37	3.38	2.25
1991	268.21	14.40	282.61		1.01	1.01	281.60	64.49	2.25	1.41
1992	210.45	8.55	219.00		28.31	28.31	190.69	38.91	1.14	0.57
1993	210.45	6.30	216.75		0.88	0.88	215.87	39.50	0.86	0.43
1994	210.45	9.90	220.35		0.88	0.88	219.47	35.97	0.66	0.44
1995	210.45	9.90	220.35		0.88	0.88	219.47	32.04	0.44	0.23
1996	210.45	9.90	220.35		0.88	0.88	219.47	28.53	0.22	0.22
1997	210.45	9.90	220.35		0.88	0.88	219.47	25.46	0.22	-
1998	210.45	9.90	220.35		0.88	0.88	219.47	22.82	0.22	-
1999	210.45	9.90	220.35		0.88	0.88	219.47	20.41	-	-
2000	210.45	9.90	220.35		0.88	0.88	219.47	18.22	-	-

Koumameyong-Booué Road

Benefits

As in the two preceding cases, benefits derived from the project road construction are calculated to be transport and road maintenance savings.

Transport savings are appreciable since the only alternative routing for lumber production would necessarily pass over 70 km of good laterite road to Lalara and then over 132 km of 2-lane paved road to the Ndjolé train station (or Alembé Station, if built). Savings for Okoumé were calculated at 1,476 FCFA/ton and at 1,836 FCFA/ton for other species.

Maintenance cost considerations take into account a total log truck traffic of 100-150 e.u./day,

Costs

This category is represented in a straight forward fashion by new maintenance costs and new construction costs, estimated herein:

Revised Cost Estimate : Koumaméyong-Booué (48 km)

(Jan. 1975 prices in FCFA)

Item	Quantity	Unit Price	Total
1. Cleaning and grubbing	1,955,000 m2	128	250,240,000
2. Stripping	1,200,000 m2	92	110,400,000
3. Earthworks			
a) Cut	960,000 m3	372	357,120,000
b) Fill	720,000 m3	458	329,760,000
c) Rock excavation	24,000 m3	3,888	93,312,000
d) Unsuitable material	96,000 m3	1,263	121,248,000
4. Pavement			
a) Base and sub-base	144,000 m3	1,770	254,880,000
5. Drainage			
a) Pipes Ø 0.80	2,400 m	45,140	108,336,000
b) Pipes Ø 1.00	2,400 m	54,900	131,760,000
			1,757,056,000
6. Other			
a) Ditches b) Signs c) Access d) Expropriation	10 %		175,706,000
			1,932,762,000
7. Supervision	7 %		135,293,000
			2,068,055,000
8. Bridges over the N'Ke (1 bridge and several small crossings)			135,000,000
	Total (taxes incl.)		2,203,055,000
	Total (taxes excl.)		1,762,444,000

TABLE 10: REVISED ECONOMIC ANALYSIS KOUMAMEYONG-BOOUE (million FCFA)

Year	BENEFITS			COSTS			CASH FLOW	12 %
	Transport Savings	Maintenance Savings	Gross Benefits	Construction	Maintenance	Gross Costs		
1977				1,174.96		1,174.96	- 1,174.96	- 1,174.96
1978				587.48		587.48	- 587.48	- 524.62
1979	74.83	5.71	80.54		10.8	10.8	69.74	55.58
1980	171.23	7.81	179.04		10.8	10.8	168.24	119.79
1981	211.20	12.71	223.91		10.8	10.8	213.11	135.54
1982	211.20	12.71	223.91		10.8	10.8	213.11	120.83
1983	211.20	12.71	223.91		10.8	10.8	213.11	108.05
1984	211.20	12.71	223.91		10.8	10.8	213 11	96.33
1985	211.20	12.71	223.91		10.8	10.8	213.11	86.10
1986	211.20	12.71	223.91		10.8	10.8	213.11	76.93
1987	211.20	12.71	223.91		10.8	10.8	213.11	68.62
1988	211.20	12.71	223.91		10.8	10.8	213.11	61.16
1989	211.20	12.71	223.91		10.8	10.8	213.11	54.77
1990	211.20	12.71	223.91		10.8	10.8	213.11	48.80
1991	211.20	12.71	223.91		10.8	10.8	213.11	43.69
1992	191.62	12.71	204.33		10.8	10.8	193.53	35.42
1993	191.62	12.71	204.33		10.8	10.8	193.53	31.55
1994	191.62	12.71	204.33		10.8	10.8	193.53	28.26
1995	191.62	12.71	204.33		10.8	10.8	193.53	25.16
1996	191.62	12.71	204.33		10.8	10.8	193.53	22.45

This road segment shows a fairly low internal rate of return (7.7%) and its return would be still lower if it were paved. Berger recommends against paving. Berger recommends against paving. We feel that its low return is offset by the very high returns on the other three road segments primarily because the GOG is looking at the four roads as one project and is most interested in the weighted average internal rate of return of all four roads, which exceeds 23%.

	DISCOUNT RATE		
	3%	8%	12%
Economic Benefits	2 609.49	1 663.83	1 218.03
Economic Costs	-1 745.40	-1 718.97	-1 699.58
Net Present Worth	864.09	- 55.14	- 408.55

International Rate of Return: $3 + 5 \left(\frac{864.09}{919.23}\right) = 7.7\%$

M'Badi-Dilo River Road

Benefits

Two types of economic benefits have been identified in conjunction with the M'Badi-Dilo River road :

- Tax receipts generated by forestry operations
- Private sector profit.

Tax receipts would be generated by the lumber tonnage which will be yielded by forestry operations using the M'Badi-Dilo River road. In brief, these taxes are:

TAX	Lot assessment (FCFA / ton)					
	9 E	1 0	1 1	1 2	1 3	1 4
1. In-forest production taxes	488	488	612	886	612	886
2. Transport taxes	158.5			204.91		
3. Forest taxes	See ANNEX B					
4. Port taxes	See ANNEX B					

Total taxes generated by the forestry operation on the M'Badi Dilo River road represent an estimated 33% of the total value of the log output at f.o.b. prices.

A second major benefit to the economy resulting from construction of the project road is the profit to the private sector, here represented by the private lumbering firm. Deducting all costs and taxes from the total f.o.b. value of log production gives an overall profit rate of 18 % for the M'Badi River area.

Costs

The economic costs represented by the new road are new road maintenance costs and road construction costs, estimated as follows :

Cost Estimate : M'Badi-Dilo River

(Jan. 1975 prices in FCFA)

Item	Quantity	Unit Price	Total
1. Clearing and grubbing	4,020,000 m2	128	514,560,000
2. Stripping	1,675,000 m2	92	154,100,000
3. Earthworks			
a) Cut	837,500 m3	372	311,550,000
b) Fill	670,000 m3	458	306,860,000
c) Rock excavation	20,100 m3	3,888	78,148,800
d) Unsuitable material	100,500 m3	1,263	126,931,500
4. Pavement			
a) Sub-base	201,000 m3	1,678	337,278,000
b) Base	536,000 m2	885	474,360,000
5. Drainage			
a) Pipes Ø 0.80	2,010 m	45,140	90,731,400
b) Prices Ø 1.00	2,010 m	54,900	110,349,000
			2,504,868,700
6. Other			
a) Ditches b) Signs c) Access d) Expropriation	10 %		250,486,870
			2,755,355,570
7. Supervision	7 %		192,874,890
			2,948,230,460
8. Bridges			
a) Matzinani (30 m) b) Ivindo (180 m) c) Dilo (60 m)	270 m	1,300,000	351,000,000
Total (taxes incl.)			3,299,230,460
Total (taxes excl.)			2,639,200,000

Internal Rate of Return

Calculation of the benefits and costs over the estimated life of the forest production susceptible to be transported over the project road leads to an internal rate of return of 37 %, as shown in Table 12, and summarized below.

	DISCOUNT RATE		
	12 %	35 %	40 %
Economic Benefits	11,090.82	2,956.44	2,401.77
Economic Costs	- 3,119.02	- 2,803.97	- 2,752.33
Net Present Worth	7,971.80	152.47	- 350.56

$$\text{Internal Rate of Return} = 35 + 5 \left(\frac{152.47}{503.03} \right) = 36.5 \ \%$$

TABLE 11 : ECONOMIC ANALYSIS M'BADI-DILO RIVER (million FCFA)

	BENEFITS							COSTS						
	RECEIPTS/STATE				TOTAL	PROFIT PRIVATE =	GROSS				CASH			
Year	Production Taxes	Transport Taxes	Forest Taxes	Port taxes	TAXES	+ SECTOR	BENEFITS	Construction	Maintenance	Gross Costs	FLOW	12 %	35 %	40 %
1977				-				1 759.55		1 759.55	-1 759.55	-1 759.55	-1 759.55	-1 759.55
1978								879.65		- 879.65	- 879.65	- 789.53	- 651.82	- 628.07
1979	38.09	10.31	484.38	306.96	639.74	-1544.97	-705.23		9.88	- 9.88	- 715.11	- 569.94	- 392 60	- 364.71
1980	103.89	28.08	93.30	844.70	1069.97	533.75	1603.72		14.06	14.06	1589.66	1 131.84	645.40	578.64
1981	131.07	35.44	93.30	1063.07	1322.88	700.87	2023.75		15.90	15.90	2007.85	1 276.99	604 36	522.04
1982	131.07	35.44	93.30	1063.07	1322.88	700.87	2023.75		15.90	15.90	2007.85	1 138.45	447.75	373.46
1983	131.07	35.44	93.30	1063.07	1322.88	700.87	2023.75		15.90	15.90	2007.85	1 017.98	331.30	267.04
1984	131.07	35.44	93.30	1063.07	1322.88	700.87	2023.75		15.90	15.90	2007.85	907.55	[illegible]	[illegible]
1985	131.07	35.44	93.30	1063.07	1322.88	700.87	2023.75		15.90	15.90	2007.85	811.17	182.71	136.53
1986	131.07	35.44	93.30	1063.07	1322.88	700.87	2023.75		15.90	15.90	2007.85	724.83	134.53	96.38
1987	131.07	35.44	93.30	1063.07	1322.88	700.87	2023.75		15.90	15.90	2007.85	646.53	100.39	70.27
1988	131.07	35.44	93.30	1063.07	1322.88	700.87	2023.75		16.90	16.90	2007.85	576.25	74.29	50.20
1989	131.07	35.44	93.30	1063.07	1322.88	700.87	2023.75		15.90	15.90	2007.85	516.02	54.21	36.14
1990	131.07	35.44	93.30	1063.07	1322.88	700.87	2023.75		15.90	15.90	2007.85	449.80	40.16	26.10
1991	131.07	35.44	93.30	1063.07	1322.88	700.87	2023.75		15.90	15.90	2007.85	411.61	30.12	18.07
1992	131.07	35.44	93.30	1063.07	1322.88	700.87	2023.75		15.90	15.90	2007.85	367.44	22.09	12.05
1993	131.07	35.44	93.30	1063.07	1322.88	700.87	2023.75		15.90	15.90	2007.85	327.28	16.06	10.04
1994	131.07	35.44	93.30	1063.07	1322.88	700.87	2023.75		15.90	15.90	2007.85	293.15	12.05	6.02
1995	131.07	35.44	93.30	1063.07	1322.88	700.87	2023.75		15.90	15.90	2007.85	261.02	10.04	4.02
1996	131.07	35.44	93.30	1063.07	1322.88	700.87	2023.75		15.90	15.90	2007.85	232.91	8.02	4.02

CONCLUSIONS OF ANALYSIS

Using the best available estimates of the various economic and technical parameters applicable to the analysis of the proposed forestry feeder road system, the Consultant has reflected a generally favorable impression of the combined projects.

In the concluding remarks an attempt is made to put the theoretical analysis into more concrete terms and to provide some closing recommendations. This theme is amplified over four successive discussions:

- Sensitivity analyses
- Cost summary
- Individual project remarks
- Diverse concluding comments

Sensitivity analyses

Given the degree of uncertainty which is inherent in a world of spiraling construction costs and fluctuating world market prices the Consultant has carried out a series of sensitivity analyses to test with greater probability the accuracy with which one may utilize the estimated rates of return for the project roads. For all projects, an internal rate of return analysis was carried out under the following conditions :

Condition No. 1 : Reduction of benefits by 10 %

Condition No. 2 : Increase in costs by 10 %

Condition No. 3 : Reduction of benefits by 10 % and increase in costs by 10 %

The results of these analyses are contained in Table 13, as follows :

SENSITIVITY ANALYSES

(January 1975 prices in million FCFA)

1. Alembé Bridge

a) Reduction of benefits by 10 %	12 %	18 %
Economic benefits	349.36	274.54
Economic costs	- 346.91	- 346.91
Net Present Worth	2.45	- 72.37

Internal rate of return : 12.2 %

b) Increase in Costs by 10 %		
Economic benefits	388.18	305.04
Economic costs	- 381.60	- 381.60
Net Present Worth	6.58	- 76.56

Internal rate of return : 12.5 %

c) Reduction of benefits by 10 % and increase in costs by 10 %		
Economic benefits	349.36	274.54
Economic costs	- 381.60	- 381.60
Net Present worth	- 32.24	- 107.06

Internal rate of return : 10.1 %

2. Lopé spur road

a) Reduction of benefits by 10 %	45 %	50 %
Economic benefits	227.36	197.78
Economic costs	- 223.39	- 223.39
Net Present Worth	3.97	25.61

Internal rate of return : 45.7 %

b) Increase in costs by 10 %		
Economic benefits	252.62	219.75
Economic costs	- 245.73	- 245.73
Net Present Worth	6.89	- 25.98

Internal rate of return : 46.0 %

c) Reduction of benefits by 10 % and increase in costs by 10 %		
Economic benefits	227.36	197.78
Economic costs	- 245.73	- 245.73
Net Present Worth	- 18.37	- 47.95

Internal rate of return : 44.0 %

3. Koumameyong-Booue road

a) Reduction of benefits by 10%	3%	12%
Economic benefits	2,348.54	1,096.23
Economic costs	-1,745.40	-1,699.58
Net Present Worth	603.14	- 603.35
Internal Rate of Return: 6.0%		
b) Increase in costs by 10%		
Economic benefits	2,609.49	1,218.03
Economic costs	-1,919.94	-1,869.54
Net Present Worth	689.55	- 651.51
Internal Rate of return: 6.5%		
c) Reduction of benefits by 10% and increase in costs by 10%		
Economic benefits	2,348.54	1,096.23
Economic costs	-1,919.94	-1,869.54
Net Present Worth	428.60	- 773.31
Internal Rate of Return: 3.5%		

4. M'Badi-Dilo River road

a) Reduction of benefits by 10 %

	35 %	40 %
Economic benefits	2 660.80	2 161.59
Economic costs	- 2 803.97	- 2 752.33
Net Present Worth	- 143.17	- 590.74

Internal rate of return : 33.9 %

b) Increase in costs by 10 %

Economic benefits	2 660.80	2 161.59
Economic costs	- 3 084.37	- 3 027.56
Net Present Worth	- 423.57	- 865.97

Internal rate of return : 32.9 %

c) Reduction of benefits by 10 % and increase in costs by 10 %

Economic benefits	2 660.80	2 161.59
Economic costs	- 3 084.37	- 3 027.56
Net Present Worth	- 423.57	- 865.97

Internal rate of return : 31.6 %

Following the sensitivity analyses it may be concluded that even in the case of the most pessimistic conjecture of events the Lope spur road and the M'Badi-Dilo River road evaluation remain highly favorable with internal rates of return of 44.0% and 31.6% respectively.

The Koumameyong-Booue road, which was already evaluated at the low rate of return of 7.7%, loses only two points.

Of perhaps the greatest interest is the Alembe bridge which falls from a reasonable 15% rate of return to 10.1% under the most unfavorable conditions. It is important to note that although it is reasonable to consider that construction will increase by upwards of 10% it is more difficult to conceive of benefits decreasing by 10% at the same time. Indeed, for this project the major source of economic benefits is a reduction in transport costs and any increase in general prices would tend to yield an even greater benefit in the form of transport savings - especially given that train transport costs tend to increase at a proportionately slower rate than those of road transport. It may be considered, for example, that the possibility of a construction cost increase of 10% would be of the order of 80% probability (p. 80) and the probability of a decrease by 10% of benefits may be estimated at 20% (p. 20), indicating a probability of 16% (p. 80 x p. 20 = p. 16) the most pessimistic conjecture of circumstances. We would maintain, therefore, the economic feasibility of the Alembe Bridge.

TECHNICAL ANALYSIS

The technology to be applied to the development of the project area is not foreign to the Gabonese context. New forestry operations will employ techniques and machines (mostly of U.S. manufacture) which have been already utilized in Gabon and will be entirely the preoccupation of the experienced private sector which has logged in the Gabonese coastal forests for years. Likewise the actual construction of the project roads and bridges will incorporate techniques which are entirely compatible with the level of expertise currently available in the country.

For the estimation of construction costs of the various bridges to be built on the project roads, the Consultant's approach has been to compare the proposed bridges with those having similar characteristics and which are currently being built elsewhere in Africa. Using this comparison as a starting point, after discussions with Gauff, S.E.G.A. and the Public Works in Libreville, and given the profile of geological formations in the area, a construction cost of 1.5 million FCFA/linear meter was adopted for the Alembé bridge - an estimate which is slightly higher than that calculated by the Department of Public Works for 1975 (1.3 million FCFA). The GOG is now giving consideration to a steel span for the Alembe bridge.

For the bridges over the N'Ke, the Manzanino, the Ivindo and the Dilo it is considered that the foundation work will not be as difficult as that of the Alembé bridge. Thus, a figure of 1.3 million FCFA/linear meter was utilized for these bridges.

Nature of the construction to be carried out.

1) Clearing and grubbing. Clearing and grubbing operations consist in the removal of all trees, hedges and bushes on the surface of the existing ground within the right-of-way of the proposed road (60 m).

2) Stripping. This operation will include the removal and storage of topsoil material within the limits of the subgrade over a minimal depth of 15 cms. This operation shall be carried out in cut and in fill conditions.

3) Earthwork. The earthwork will conform with geometric standards accepted to keep the pavement structure above flood level and provide a good drainage. The typical cross section will be 10 m wide and the cross slope will be established in final design.

Unsuitable material. The unsuitable material will be excavated at locations and to depths as indicated in final design.

4) Roadway pavement. The final dimensions of the pavement will be established after result of soil and material studies. For the purpose of this report, we have assumed a sub-base of 30 cms and a base course of 15 cms.

Sub-base. The sub-base will have a width of 10 m and a thickness of 30 cms, made of selected lateritic gravel of good mechanical characteristics.

Base course. The base course will have a thickness of 15 cm, composed of laterite. The shoulders will be made of similar material.

Prime coat. The prime coat will be made over the width of 7 meters. The material used will be a liquid cut-back 0/1 at the rate of 1 kg per square meter.

Surfacing. The paved width will be 7m, representing two lanes of 3m50 each. The pavement consists of double bituminous surface treatments made with rock chips. The binding agent shall be a cut-back 400-600.

5) Drainage. The drainage will be made through pipes, boxculverts and ditches. The pipes will be corrugated metal or concrete.

6) Signs. Horizontal and vertical signs shall be provided for the paved roads and only vertical signs will be provided for the laterite road.

For this study utilization was made of the tentative alignments established by the consulting firm Gauff on the three projects for which they are responsible. An analysis of the preliminary plans and profiles used by the Gauff indicated that they were concomitant with the proposed geometric characteristics for the roads (100 km/h) and were consequently used to develop the construction cost estimates. It must be noted, however, that minor modifications to the road alignment could be proposed in the final technical study. For this reason it should be considered that the approximate values arrived at in the study could vary by 10-20% in one direction or the other. A definitive cost study can only be carried out following a more precise technical study, including :

- the final alignment
- the final profile
- the geotechnical study for the dimensioning of the elements of the pavement and the borings at the abutment emplacements.
- the hydraulic study for the dimensioning of drainage pipes and culverts and the effect of bridge abutments on river flows.

As far as the M'Badi-Dilo River road is concerned, a visual reconnaissance was excluded due to the impenetrability of the rain forest in the region. The present report has therefore been based on the latest information provided by the consulting firm S.E.G.A. (who will be submitting a preliminary alignment plan later this year) in order to gain an appreciation of the local topography and to estimate the volume of cut and fill necessary for each kilometer of road.

A working hypothesis was utilized, based on the more exact information utilized in the neighboring Koumameyong-Booué road study. Indeed, the general construction characteristics of the two roads are very nearly alike : both roads are in the same zone and both have similar foundation characteristics for the pavement. This hypothesis permitted a comparative calculation of the clearing, grubbing and stripping elements of the cost estimate.

Brief technical descriptions of each road are offered below, followed by remarks by the Consultant (Louis Berger Inc.) about the adeqqacy of the design and recommendations for possible improvements or cost-saving modification. The cost breakdown for each project and internal rate of return analysis are contained below in the Financial Analysis portion of this section of the Project Paper.

ALEMBE BRIDGE AND APPROACH ROADS

The first element of the proposed Phase I feeder road program consists of a 250 meter steel-span one-lane bridge over the Ogooué River and the accompanying 2-lane paved approaches which link the bridge to the Ndjolé-Alembé road on the north bank and the Alembé railroad station on the south bank (see map 3 in Annex*)(representing 150 meters of approach road). The approaches will be constructed to the same standards as other 2-lane paved roads in the area, that is to say, 10 meter base and 7 meter payement.

Construction time should last approximately one year and has been tentatively programmed from January 1977 to December 1977.

The Consultant maintains that the one-lane proposed bridge over the Ogooué River and its complementary approach roads represent an economically viable project. This viability would only be further enhanced if agricultural production were to increase significantly in the Woleu-Ntem area to the North of Alembé. Indeed, following-up on the impetus

* maps of each road are contained in Annex B.

provided by the Oyem area cocoa expansion it would not be impossible that local cultivators update and expand local coffee and food crop production as well, most of which would be eventually transported to Libreville through the Alembe station.

The technical specifications appear to be satisfactorily adapted to the level and type of traffic which will utilize this access.

LOPE SPUR ROAD

The proposed Lope spur road will serve as a 2-lane link between the Lope train station on the Ogooue River and the Ayem-Lastoursville road, near the village of Kandjamabika II (see map 4 in Annex). The road will cross areas of wooded savannah and highly irregular terrain. Given the topography of the terrain the earthworks element in the overall construction is important: an estimated volume of cut of 20,000 m3 per kilometer was adopted as well as a 15,000 m3 per kilometer volume of fill. The water crossings are also rather frequent, necessitating an estimated 7 pipes per kilometer. (All crossings on this road will be made over corrugated or concrete piping).

Construction was planned for a 7 meter pavement and a 10 meter base. Work on the road is estimated to last six months and has been tentatively programmed for the period from June - December 1978.

Paving may be postponed or eliminated by GOG based on REDSO/Berger recommendations that the paving of this road should be postponed until the paving of the complementary Lope Turnoff-Mikongo road (scheduled for Phase II). This would lower construction costs and would make the rate of return even higher than the current 49 per cent.

The recommendation against paving was based on an examination of revised log flows over the project road which will not be sufficiently high to justify its paving until after the Phase II opening of the Lots 27-33 which will follow the construction of the Offoue River road (see map 2). The Consultant has estimated the following log flows over the project road:

1979	197,000 tons	
1980	168,000 tons	
1981	110,000 tons	
1982	110,000 tons	
1983	242,000 tons	(opening of Offoue River road)
1984	374,000 tons	
1985	509,000 tons	(until 1992)
1992	399,000 tons	(until year 2000)

Secondly, from a financial and an organizational standpoint the mobilization of the labor and material necessary for paving operations could be rendered more efficient by the paving of the total 49.4 km in 1978 and return in 1983 to complete the remaining 45 kms.

KOUMAMEYONG - BOOUE ROAD

The relatively low economic rate of return for the Koumameyong-Booue road, 7.7 per cent, is mainly a reflection of the difficult conditions of construction, including the highly irregular terrain and thick forest. It is, however, an improvement over the 2.0 per cent return based on the original design. Changes recommended by REDSO and its consultant, Berger, and accepted by the GOG included: 1) reducing road construction specifications to an 8 meter wide 30 cm base unpaved road; 2) relocating the Booue train station nearer the town of Booue to eliminate an 8 km spur road; and 3) revising the construction timetable so that both the Koumameyong-Booue road and the M'Badi-Dilo road can be built simultaneously.

M'BADI - DILO RIVER ROAD

The proposed M'Badi-Dilo River road will require the crossing of an extremely dense tropical rain forest, considered as impenetrable for most practical purposes. The construction cost estimate has therefore been based on an aerial reconnaissance carried out by the local consulting firm S.E.G.A. in 1973 and updated by their current activities in the area. The road will run from an embranchement of the Koumameyong-Booué road at the village of M'Badi (see map 6 in Annex) and will cross 67 kilometers of forest as well as two major rivers, the Ivindo and the Dilo. The road will be designed with a 10 meter wide laterite surface and a reference speed of 100 km/h. Of the 67 km of road approximately 52 km will follow a terrain of relatively flat topography and 15 km will encounter a relatively irregular topography. The degree of earthwork necessary for this road is not major : an estimated 12,500 m3 per kilometer of cut and 10,000 m3 per kilometer of fill. Similarly, the number of water crossings are fewer than in other project roads and consequently the drainage works represent a smaller element in overall costs.

Construction time is estimated at eighteen months and is tentatively scheduled for the time period from January 1977 to December 1978.

Given the high economic rate of return attributed to this project road and its adequate technical specifications, the viability of the M'Badi-Dilo road is evident without modifications.

SOCIAL ANALYSIS

Because of the nature of the project, it is not realistic to assume a high degree of direct social impact in the area affected. Certainly the project can be justified, but its justification takes the form of economic and financial considerations benefitting Gabon as a nation, and since the GOG is firmly committed to building the roads, political considerations should not be overlooked. This is not to say, however, that no positive social effects can be expected, but given the extremely small population found in the project area (less than 1 person per square kilometer over most of the region) any social impact of the project roads will necessarily be only general and possibly indirect in nature. It is evident, for example, that the improved accessibility which accompanies a road construction program tends to induce changes of a social nature such as education, postal and medical services, newspaper circulation and integration of a formerly isolated area into the national administrative structure. With the coming of the railroad, its various stations and the links provided by the access roads, general development and population growth will begin to occur in the region.

The opening up of the region to new economic and social activities by the access roads leads to new employment possibilities and a subsequent increase in population for the currently underpopulated project area. These effects would gradually be felt by the whole of the regional population. Because of Gabon's labor shortage, a large number of workers of all kinds will be brought in from several countries in West Africa, as is the case with the building of the railroad. For the most part, due to GOG policy, this labor influx will not lead to permanent immigration. Thus the employment generation and income distribution effects will be spread over several countries, Senegal, Upper Volta, Togo, Cameroon, etc.

ROLE OF WOMEN

With respect to the impact of the project on women, it is not unreasonable to assume that in time the roads will produce a tangible effect on their lives. Gabonese women, . . as in much of Africa, are often doubly subjugated to the constraints of primitive traditional techniques. First as the primary cultivator of subsistence crops for the family they are called upon to work long hours with rudimentary tools and with little knowledge of scientific farming methods, and, secondly, as mothers of large families they are obliged to nourish and to attend to their children without modern nutritional or medical care information. It has been often graphically illustrated in Africa, that the opening of new transport systems is accompanied by an important revision of the role of women in the traditional society and an improvement in the feminine condition.

As a complement to the Transgabonese Railroad (which has been the GOG's number one development project for years) it would be unthinkable for the GOG not to consider another essential link in the overall system, the feeder road network to be also a high priority project. Indeed, government policy toward the project area has consistently favored its rapid development, especially exemplified by the tax structure which is applied to the Second Forest Zone. Private logging firms in the region, for example, benefit from a 2/3 tax exemption on the purchase of all equipment for their logging operations.

Of the complex and highly variable taxes which are payable after logs reach the port, one can easily discern a difference in the average amount assessed according to the species of wood:

Table 13

	Okoumé*	(F.CFA/t.) Other Varieties
1. Local taxes (road maintenance, trade, organization, port organization, etc...)	300	50
2. Felling tax	920	640
3. Reforestation tax	644	448
4. Export duty	4,048	-
5. Gross income tax for timber	480	-
6. Direct boarding tax	80	80
7. National solidarity tax	650	-
8. Customs stamp	352	57
Total :	7,474	1,275

* Okoumé (Gaboon wood) exports represent over 85% of total value of wood exports in Gabon, to the detriment of other, less highly valued species. The noticeable tax break illustrated above reflects a conscious effort on the part of the Government to encourage the export of wood species other than Okoumé.

ADMINISTRATIVE ANALYSIS

Current indications are that the GOG possesses an adequate administrative mechanism for the planning and construction phases of this project. As early as 1972 the World Bank, in its review of the proposed feeder road system, indicated the need for a better coordination of road and railway plans and for a better collaboration between the OCTRA and the Department of Public Works (DPW). An initial confusion over responsibility sharing has now yielded to a common accord that the DPW will definitely supervise the construction.

It should be noted, however, that road maintenance by the Gabonese Department of Public Works in the Second Forest Zone has been the target of some criticism, notably by the World Bank. Adequate maintenance over the proposed roads will be contingent on an increase in the budget of the regional Department of Public Works as present expenditures are stretched to their limit. Further, lack of control points along the existing roads has led to frequent loading of log trucks in excess of the legal 13-ton axle load limit and resulted in an exaggerated road surface wear. The GOG appears to be conscious of these criticisms, however, and plans to take steps to rectify the situation in the near future.

SECTION 3. PROJECT IMPLEMENTATION

A. Implementing Plan

(1) Proposed Project Schedule

Since this project was presented in the FY 75 Congressional Presentation, a concerted effort was made to complete the consultant's feasibility study and the Project Paper in time to permit authorization in FY 75. Problems of coordination of the prospective A.I.D. loan with those of other donors to access road network, and the road program's dependency on the construction schedule of the railroad and its stations have complicated the planning of this project and the timing of its execution. Based on AID/W project review schedule, the GOG's current operational plans, and the Consultant's best estimates for optimal timing, the following schedule emerges:

Date	Action
June, 1975	Authorization of loan.
June, 1975	Implementation Network will be developed by PCI for use in Mgt. Info System (MIS).
October, 1975	AID loan execution. FRG loan execution.
December, 1975	Final design to be completed on all Phase I segments by Gauff and SEGA.
February, 1976	GOG call for tenders for construction contracts.
July, 1976	GOG expects to sign construction contract.
July, 1976	Contracts awarded for AID-financed materials.
July, 1976	GOG and REDSO approve items to be financed from Code 941 countries. L/COM issued to finance contractor procured Code 941 commodities.
January 1977 - January 1978	Construction period for Alembe Bridge.

Date	Action
January 1977 - June 1978	Construction period for Koumameyong-Booue Road.
January 1977 - December 1978	Construction period for M'Badi-Dilo Road.
June 1978 - December 1978	Construction period for Lope station road.

These construction periods are the consultant's calculation of optimal timing for the roads, based on consideration of the railway and station construction schedules, taking into account the fact that logging companies need up to a year's lead time to set up camp before logging operations begin. In each case the road is scheduled to be completed just before the connecting station becomes operational. In the consultant's view, with which REDSO concurs, the above dates are realistic and should be met in the absence of unforeseen difficulties. If a single contractor is used, he could most efficiently begin work on three roads at about the same time. The fourth road (Lope) could be started later, as it has a short construction time (six months), so that its completion date would be about the same time as the others. See figure 2 on the timetable of road construction and forest production, in Annex B.

AID plans to sign the AID loan agreement in October, 1975 when the FRG loan is also scheduled for signature. The GOG will then have firm financing available enabling it to instruct the consulting engineer to develop the road construction bid documents, to be issued in February, 1976, with the necessary arrangements for AID financing of the specific commodities. The design of this project within a multi-donor context will delay satisfaction of conditions precedent until probably July/August, 1976 because the road construction contracts, an element of the conditions precedent, can not be signed before that date. This time frame exceeds normal PD-57 requirements but is essential to the successful implementation of the project.

(2) GOG Responsibilities

Responsibility within the GOG for construction of the railroad is the OCTRA, the State Railroad Authority. OCTRA is an agency of the Ministry of Public Works, Transport and Civil Aviation. GOG's Minister of State is the country's overall economic coordinator and also bears the title of Transgabon Coordinator, to whom OCTRA reports. Originally it was assumed that OCTRA would also administer the construction of the access road network, but now the Department of Public Works (in the same Ministry) has been assigned that role. This appears to be a logical choice, since DPW will also be responsible for road maintenance and after construction.

(3) Disbursement and Procurement Procedures

The four road and bridge segments treated in this Project Paper will be financed by the GOG, the FRG and AID. The GOG will be responsible for all foreign exchange costs not covered by the DM 29.5 million FRG loan and the $5 million AID loan. The GOG will also be responsible for all local costs of the four segments except for a maximum of $500,000 from the AID loan which can be utilized for this purpose if the full amount of the AID loan is not needed to meet foreign exchange costs.

Construction contracts will be executed by the GOG with qualified firms, most likely using European construction practices. AID will not finance contracts for construction or engineering services. The AID loan will purchase for the GOG, which in turn will provide to the contractors, the following items needed for the construction of all four segments: steel culverting, metal bridge spans, and other necessary equipment, materials and spare parts whose source and origin are in Code 941 countries which can be procured on a competitive basis from those countries. AID will also explore with the GOG the contractor purchasing of Code 941 commodities to be financed under the AID loan, rather than direct GOG supply of the commodities to the contractor.

To the extent that the entire AID loan of $5,000,000 is not used as noted above, a maximum of $500,000 can be used to finance the local costs of commodities and commodity related services, for example, spare parts for the Code 941 equipment, inland transport, storage and in-country insurance charges. In no event will the total AID loan exceed $5,000,000.

During the negotiations, the GOG asked if the AID loan could also be used to purchase similar equipment and materials for the two additional roads recently added to Phase I (see page 3 of this paper) and to purchase maintenance equipment which could be used for the entire Phase I network (the four original and two new roads). The response by REDSO was that we preferred to confine our financing to the original four roads since the two new ones had not been included in the Berger feasibility study and were farther away from implementation than the first four, thus potentially delaying the full disbursement of the AID loan. With respect to maintenance equipment which would not be needed for an extended period, this too would tend to delay disbursement of the loan. Although we doubt that it will be necessary, we would consider financing these items if the loan is not fully disbursed for construction of the four original segments.

The GOG has decided to enter into separate contracts for the Alembe Bridge and the Lope Spur road from those of the other two roads. However, since all four contracts will be bid at the same time, it is possible, even probable, that all four segments will be contracted to the same construction firm.

The GOG has approved the above procedures. The FRG which had earlier insisted on separate funding of individual segments in order to avoid coming into direct contact with what it regarded as the problem of tied US aid, agreed to the above procedure at the May 14-15 donors' meeting in Libreville as the most practical in the present circumstances. The apparent reversal of the German position is based on acceptance of what the GOG wants and what now appears to be the most efficient and cost-effective way to proceed. In agreeing to this approach the FRG points out that it is not really the joint-financing concept which they had initially opposed, but rather a cooperative effort to complement the GOG's own funding resources.

(4) Monitoring and Reporting Arrangements

Monitoring will be performed in accordance with the Management Information System (MIS) to be developed in June by the PCI team.

B. Evaluation Plan

The tentative evaluation plan for this project is summarized as follows. It is subject to modification and elaboration by the MIS to be developed.

(1) Baseline data - The Berger pre-feasibility study contains a full assessment of the existing situation and constitutes an unusually complete source of baseline data for use in a future evaluation.

(2) Monitoring during construction phase - As mentioned in the preceding section, project monitoring will be based on an MIS to be developed by PCI.

(3) Evaluation upon project completion.

(a) Through periodic inspections and the final inspection of the project after completion, A.I.D. will satisfy itself that work has been performed according to specifications and standards and that the project outputs have been achieved.

(b) Verification of the achievement of the project purposes and sector goal will be a function of the actual use of the roads and the volume of timber evacuated to the railroad for delivery to the port of Owendo. Definitive data on traffic will be available from OCTRA records on the volume of timber transported on the railroad and from GOG trade statistics on timber exports.

(c) It is planned that the secondary effects of the roads and the degree to which actual economic development, agricultural production and social progress in the area can be attributed to the railroad and the access road network will be assessed 5-10 years after completion by means of a special socio-economic study.

SECTION 4. CONDITIONS AND COVENANTS

In addition to standard conditions precedent, the following special conditions precedent are being added to Section 3.01 of the Loan Agreement, since proceeds of the AID loan may be used to finance certain specified foreign exchange costs from Code 941 countries for the two German-assisted roads.

- signed or certified copies of the FRG loan agreement relating to that portion of the project to be financed by FRG

- evidence that all of the conditions to the effectiveness of the FRG loan agreement have been fulfilled

- executed copies of the construction contracts

No special covenants and warranties will be introduced into the Loan Agreement, except for the standard covenants and warranties.

SECTION 5. ISSUES.

A. Feasibility of the Railroad.

Since this is a project for the construction of several short feeder roads, design and planning requirements are relatively straightforward and clear-cut. This Project Paper and the Berger feasibility study have limited their economic analysis to the roads themselves, based on the assumption that the railroad was being built and financed separately by the GOG, not using A.I.D. funds. Since the access road project is dependent on the existence of the railroad, it was not feasible to move forward with the project proposal until decision to build the railroad at least as far as Booué had been irrevocably taken and funding for construction had been assured.

The building of the Transgabon railroad has long been a top priority of the GOG, and President Bongo persisted in his determination to build it even after a 1972 World Bank study raised questions as to its economic feasibility. Even now the question of the railroad economic justification is not without controversy. Attached as Annex H is the official OCTRA computation of the railroad's internal rate of return : 4.94 per cent. Since the IRR of a project such as this is generally expected to be at least as great as the opportunity cost of capital, the railroad's potential earning capacity may be regarded as disappointing compared to its cost. However, important political and social considerations not reflected in the calculations of the economic return were considered by the GOG as offsetting this disadvantage. Simply stated, the GOG believed that the railroad was essential if the interior of Gabon, thickly forested and under-populated, was ever to be developed. Of equal importance was that the GOG with its rapidly rising revenues from oil and other mineral exports, was in a position to underwrite most of the cost of the railroad. The GOG has been, and remains, committed to the construction of the Transgabon railroad, irrespective of narrow financial cost-benefit considerations.

In order to exploit the large timber reserves from the second forest zone and transport them to the port of Owendo for export, the existence of the railroad alone is not enough. The access roads provide an essential link between the forest and the railroad. As such,

the access road network constitutes a viable project justifiable on its own merit, since without it the timber resources of the interior could not be tapped. The fact that the economic feasibility of the access roads and their internal rates of return (with the possible exception of the Koumameyong-Booue road) are greater than that of the railroad itself, serves to confirm the soundness of A.I.D.'s 1972 decision to switch the basis of its loan from the railroad to the access roads.

B. Funding Methodology

By far the most important issue faced during the planning stage of this project and the subject of much negotiating with the GOG and FRG is the question of methodology of financing. Rather than the funding of individual road segments by each donor as originally proposed by the GOG, the US proposed a more flexible joint financing arrangement which would permit AID to finance equipment and material from Code 941 countries. The FRG resisted the joint financing approach for several months because of the procurement restrictions of the AID loan and said they would agree to joint financing only if untied (i.e., Code 935) procurement were available from AID. The Germans argued that procurement restrictions would add unnecessarily to the cost of the project by forcing noncompetitive procurement in code 941 countries and that for the sake of standardization of equipment, this procurement pattern might extend beyond the US loan and influence the other sources of financing in an uneconomic fashion. REDSO pointed out that several possibilities existed for code 941 (specifically U.S.) procurement on a competitive basis which were probably sufficient to fully utilize the AID loan if applied to the overall four-road program including the two German-assisted roads. If confined only to the foreign exchange costs of the short road and bridge segments originally proposed for US funding, it is doubtful that the AID loan could be fully used in code 941 countries on a competitive basis. The result of this alternative would have been either underutilization or uneconomic use of the AID loan.

The funding issue was discussed and informally resolved at a meeting in Libreville on May 14-15 between the REDSO/WA Director, the GOG and FRG representatives. At that time it was agreed that the FRG would finance up to DM 29.5 million in foreign exchange costs for two roads (Koumameyong-Booue and M'Badi-Dilo), AID would finance through the GOG up to $5 million in steel culverts, metal bridge spans and other equipment for the four original Phase I segments (Alembe Bridge, Dilo Spur and the two German-assisted roads). All other costs of this four road program will be financed directly by the GOG. This constitutes a very satisfactory resolution to the problem of financing methodology for all parties concerned.

GLOSSARY OF ABBREVIATIONS

AFDB	-	African Development Bank
CP	-	Condition Precedent
DM	-	Deutschmark
DPW	-	Department of Public Works
FCFA	-	Franc Communauté Financière Africaine
FRG	-	Federal Republic of Germany
GOG	-	Government of Gabon
IRR	-	Internal Rate of Return
KFW	-	Kreditanstalt für Wiederaufbau
MIS	-	Management Information System
OCTRA	-	Office du Chemin de Fer Transgabonais
PCI	-	Practical Concepts, Inc.
PD	-	AID Policy Determination (No. 57)
SEGA	-	Société d'Etudes Gabonaise
e.u.	-	Equivalent Unit

In estimating traffic counts, the number of vehicles per day has been transposed into equivalent units (e.u.) on the following basis :

1	Light vehicle	:	1 e.u.
1	Medium truck (10-15 tons)	:	3 e.u.
1	Heavy long truck (23-35 tons)	:	5 e.u.

While only an approximative measure, the utilization of equivalent units, rather than simple vehicle counts gives a more accurate representation of the real situation in terms of destructive capacity of each vehicle type.

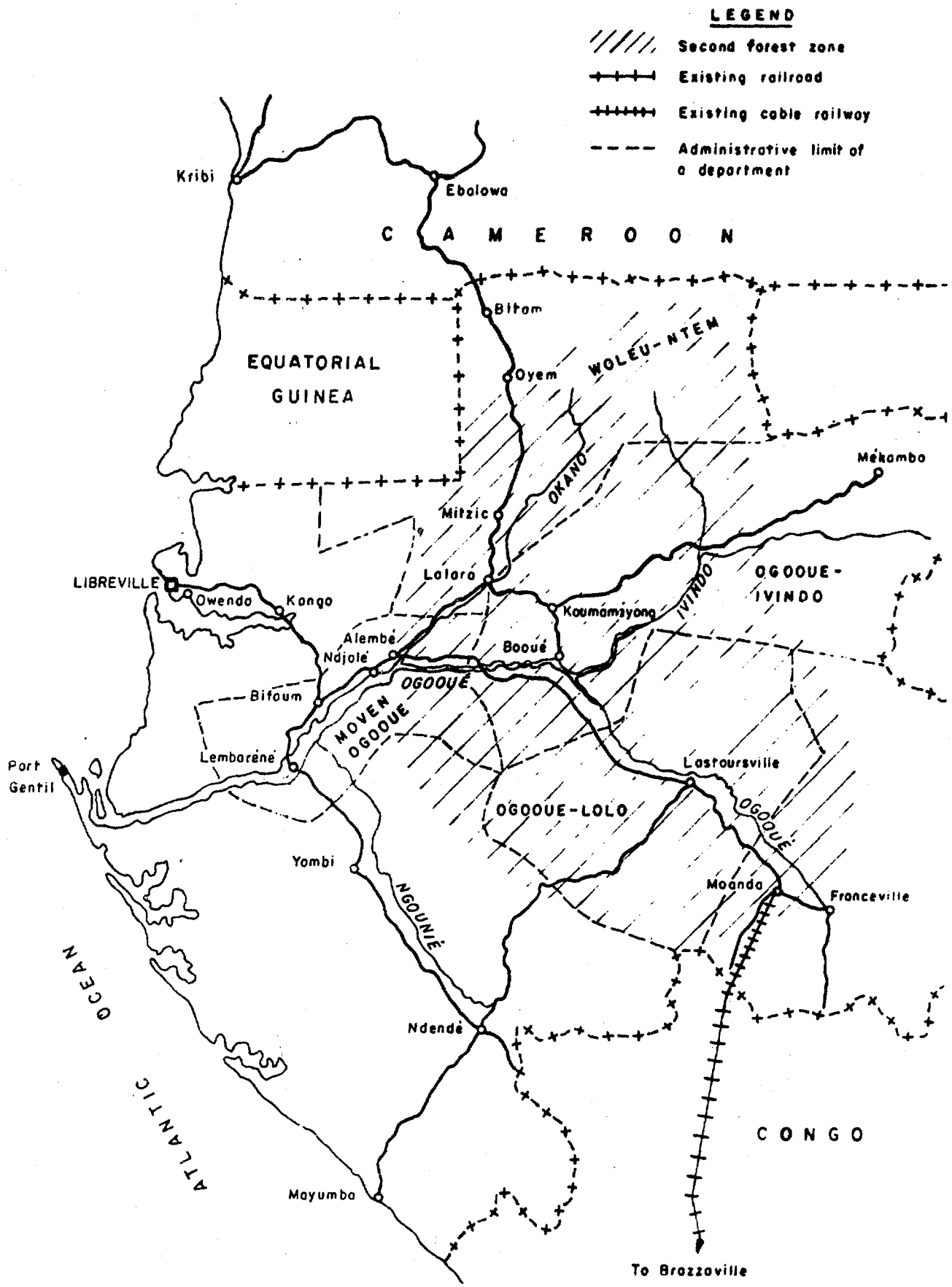
ANNEX A

Maps

1. Gabon
2. Second Forest Zone
3. Alembe Station Bridge
4. Lope Station Road
5. Koumameyong-Booue Station Road
6. M'Badi-Dilo Station Road

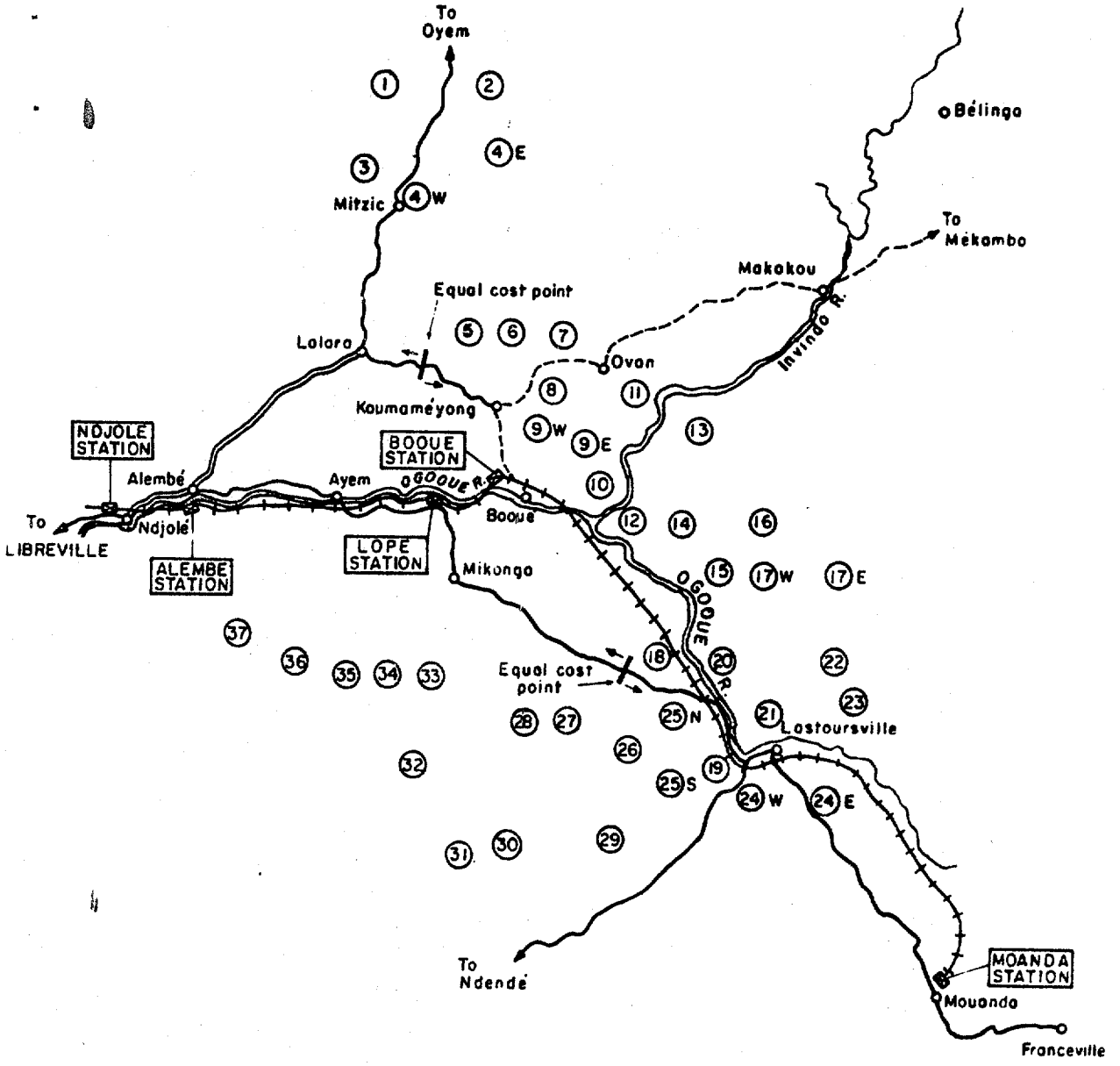
Tables

Road Maintenance Costs
Recapitulation of Construction Costs
Timetable of Road Construction and Forests Production
Timetable for Completion of Railroad Stations
Forest Taxes
Forest Production



MAP I : GABON

Scale: 1/4.000.000



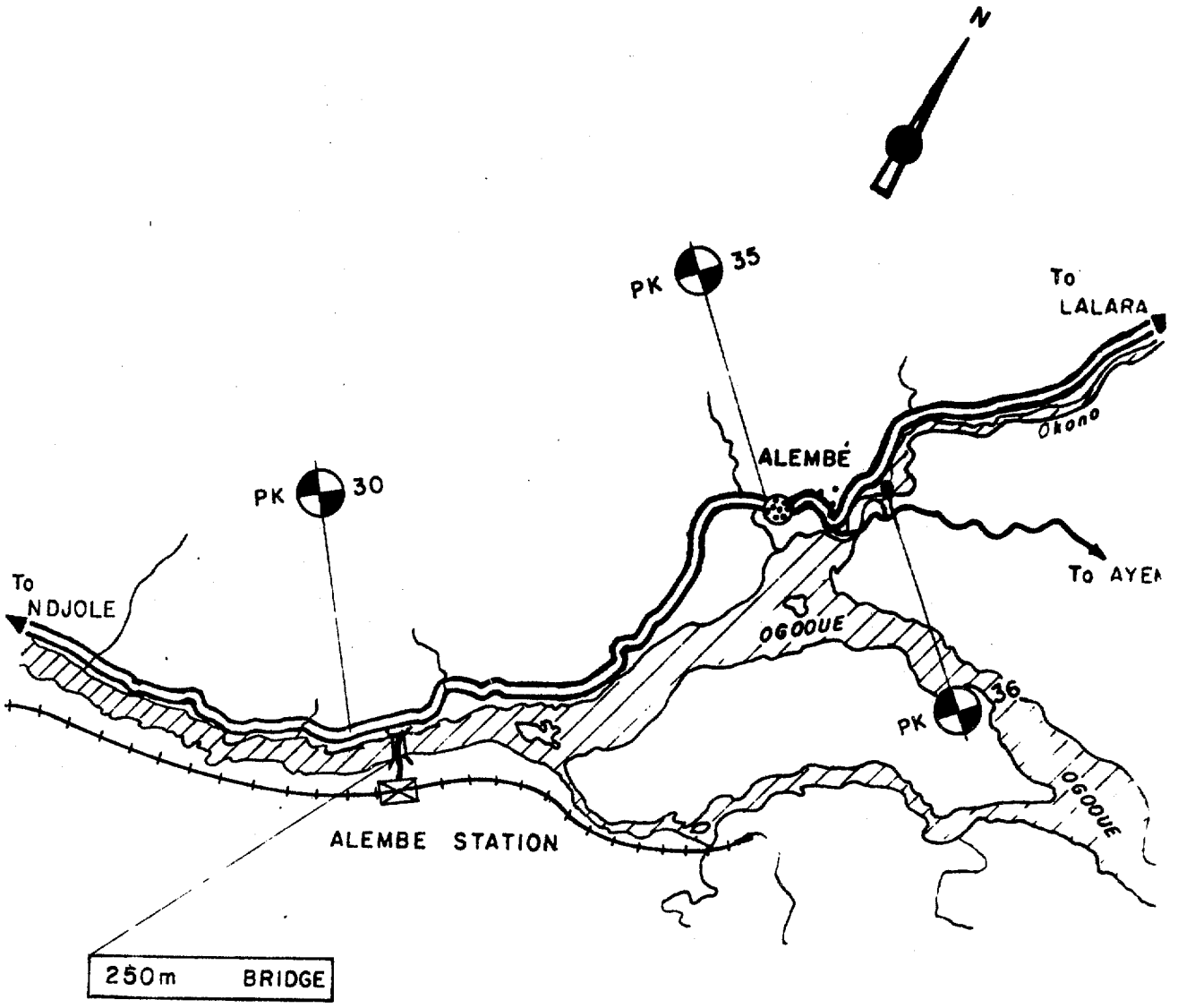
MAP 2 : SECOND FOREST ZONE (January, 1975)

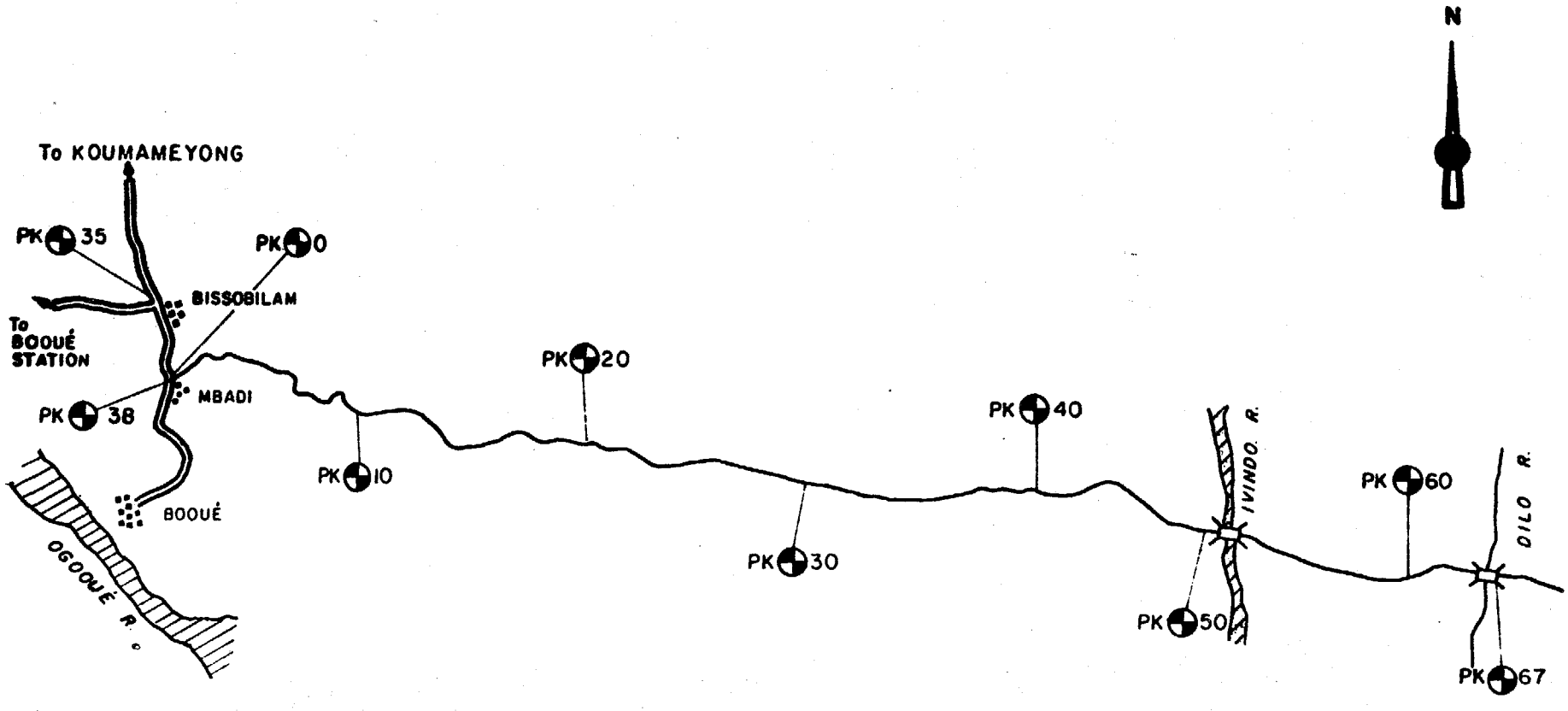
LEGEND

═══	Paved Road (2 - Lane)
———	Good Latérite Road
- - - -	Poor Laterite Road
+++	Proposed Railroad
⊠	Railroad Station
(12)	Logging Permit Lot No.

Map 3: Proposed ALEMBE Station Bridge

Scale 1 / 50.000

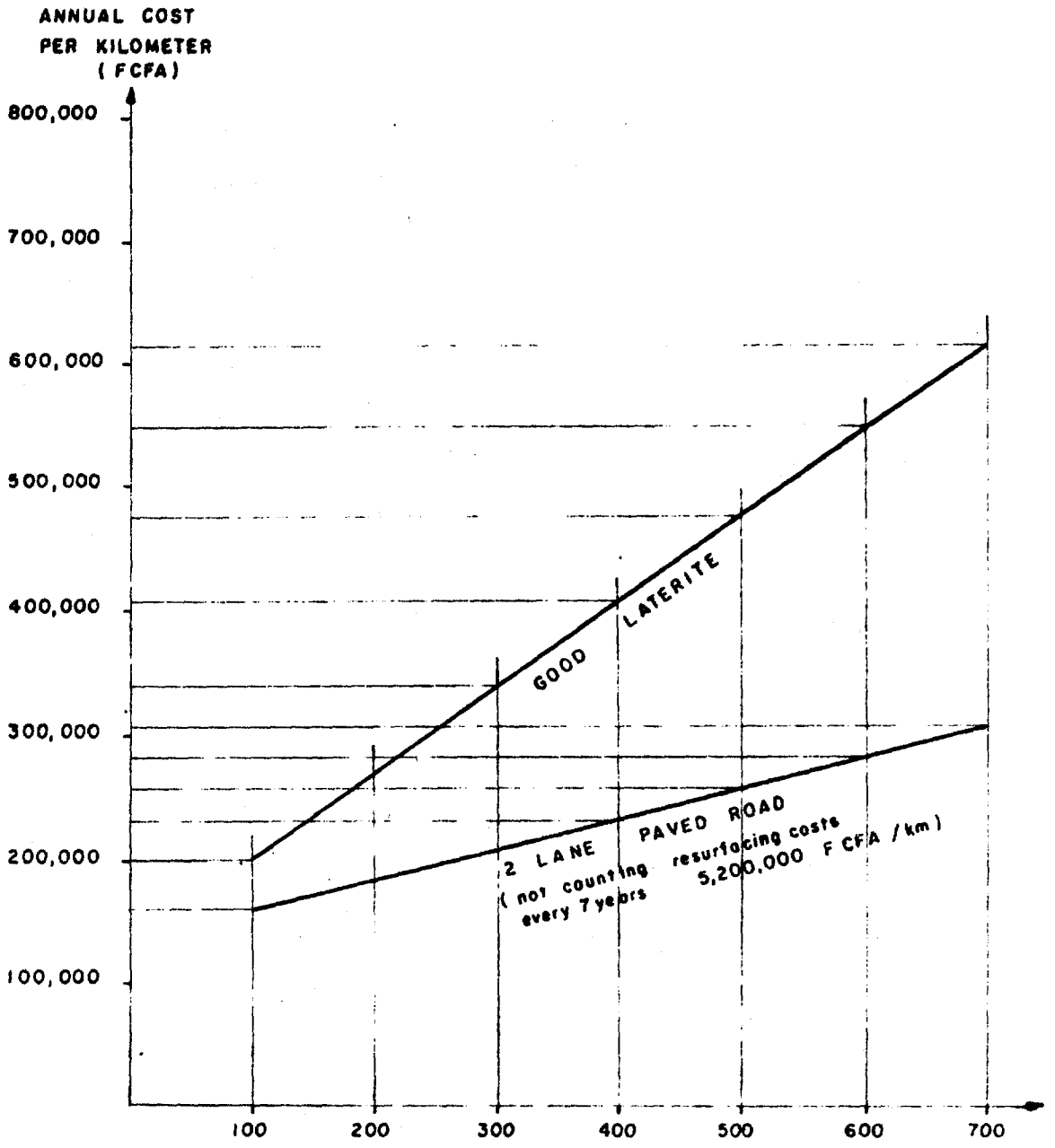




Map 6: PROPOSED M'BADI - DILO RIVER ROAD

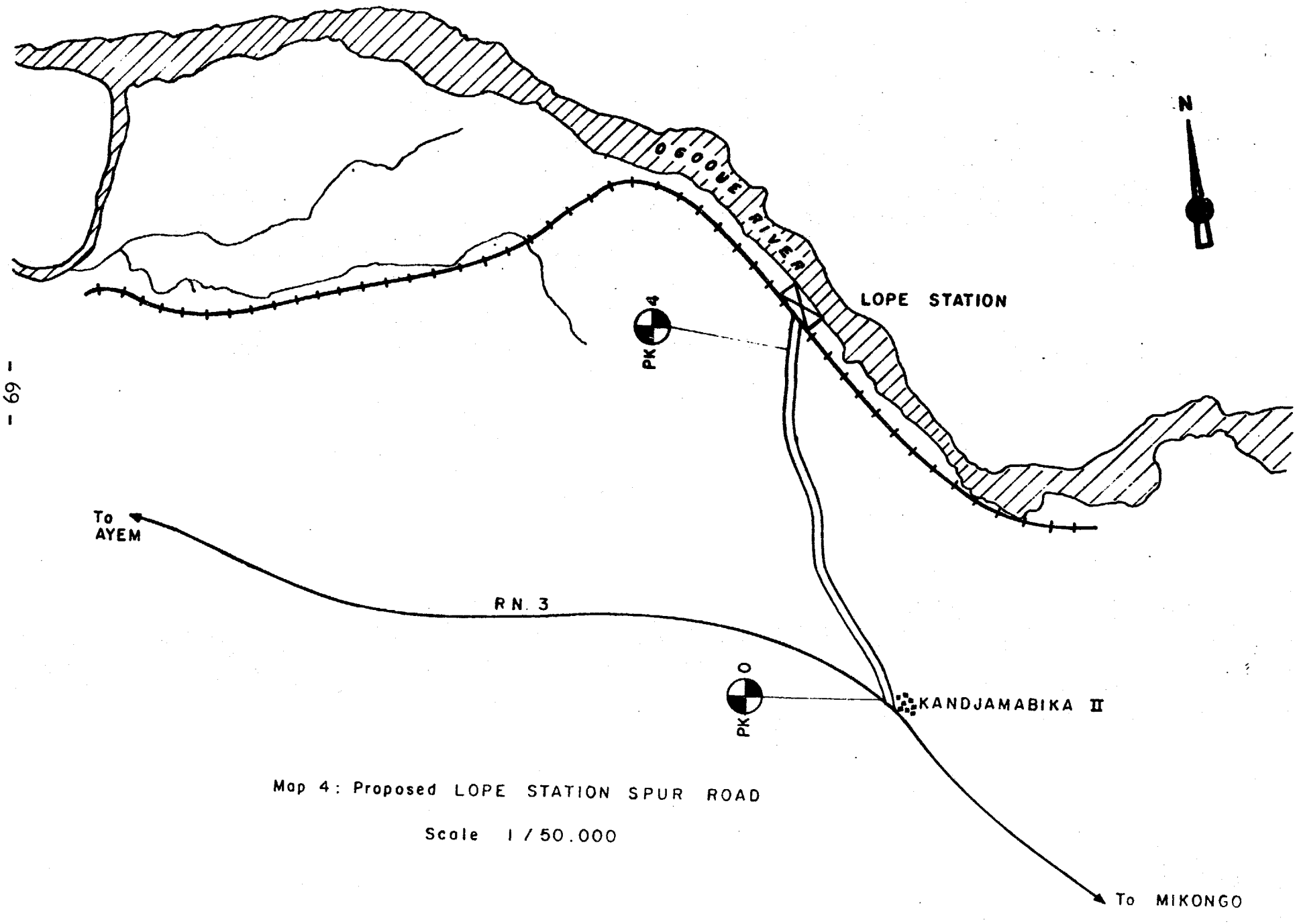
Scale : 1/250.000

ROAD MAINTENANCE COSTS (Taxes excluded)
- GABON, 1975 -



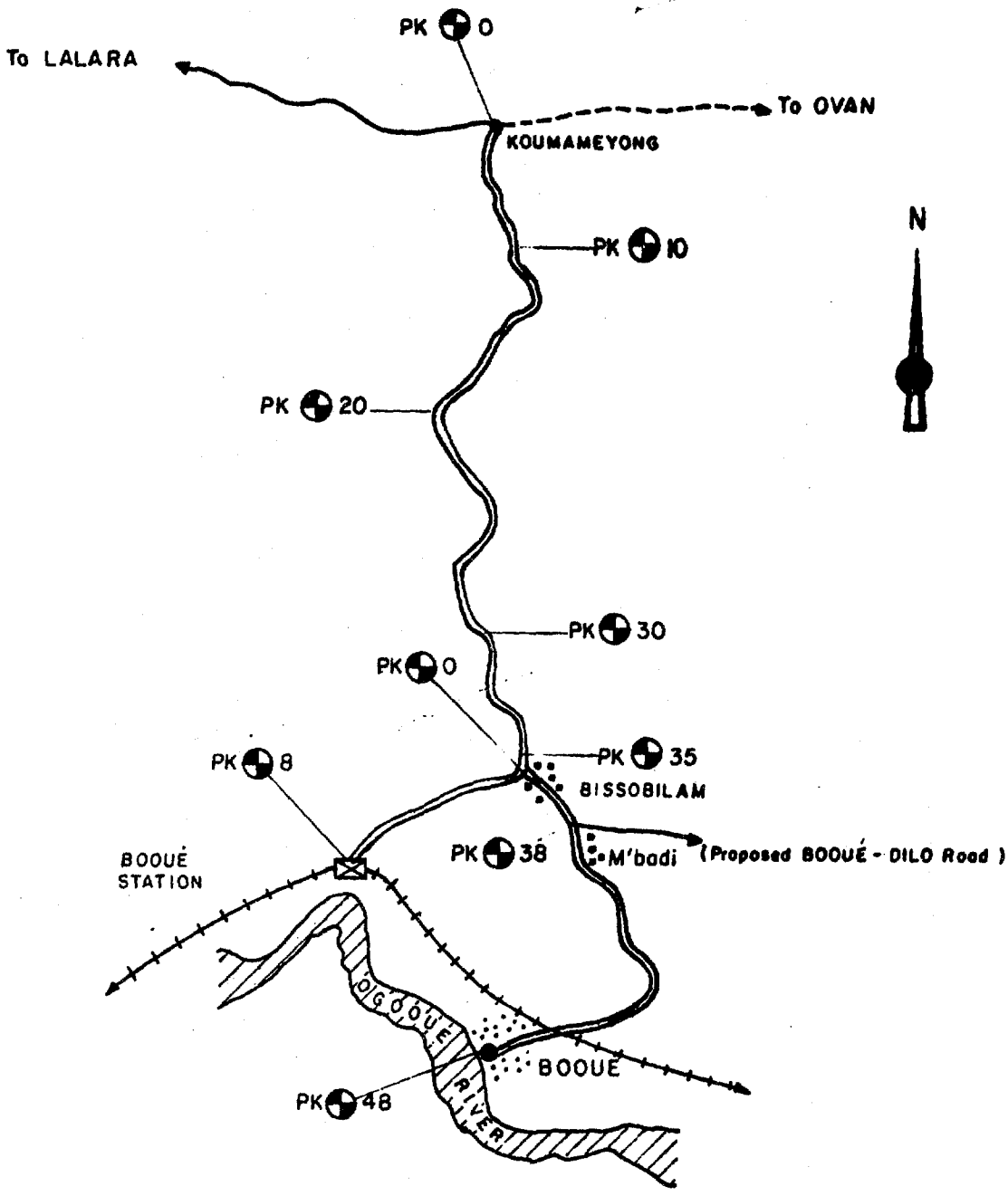
Source: 1 S.E.G.A., ANNEX C, 1972.

2 WORLD BANK, 1972.



Map 4 : Proposed LOPE STATION SPUR ROAD

Scale 1 / 50.000

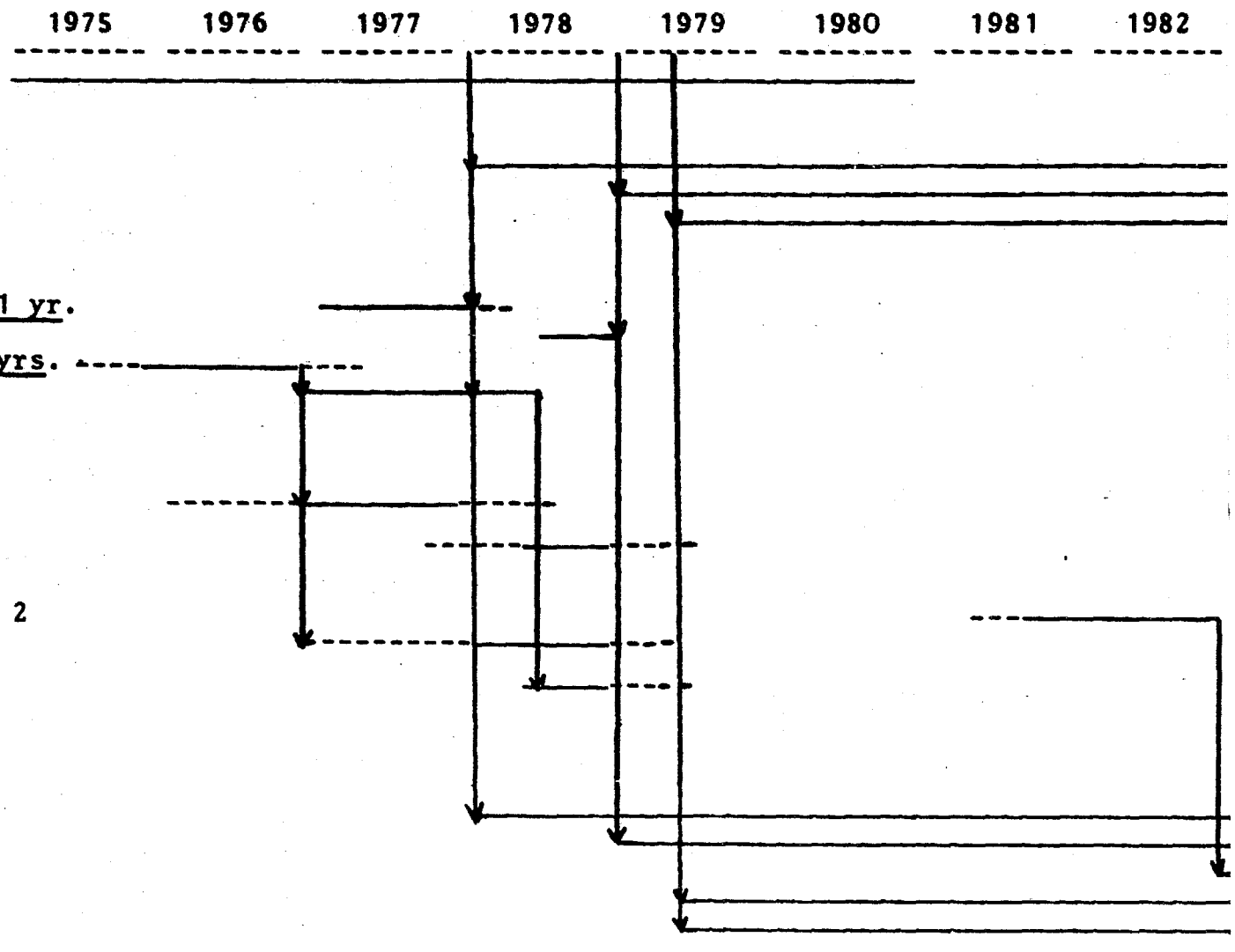

PK 0
To LALARA
To OVAN
KOUMAMEYONG
N
PK 10
PK 20
PK 30
PK 0
PK 8
PK 35
BISSOBILAM
BOOUÉ STATION
PK 38
M'badi
(Proposed BOOUÉ - DILO Road)
OGOOUE RIVER
BOOUE
PK 48

RECAPITULATION OF CONSTRUCTION COSTS (million FCFA)

Project	Economic Rate of Return	Financial Costs Jan.75	Estimated Real Costs at time of construct.	Percentage Increase	Real Current Costs in million $ US at $1.00 = 210 FCFA	Real Current Costs FCFA/Km.
ALEMBE	15.0%	383.64	645.36	68%	3.07	-
LOPE	49.4%	279.24	565.08	102%	2.69	128.43
KOUILOU-YONG-BOOUE	2.0%	3,775.51	5,660.12	50%	26.95	101.07
M'BADI-DILO RIVER	36.5%	3,299.00	5,761.51	63%	27.44	75.81
TOTAL		7,737.39	12,632.07		60.15	

The above table summarizes the costs and internal rates of return for each project segment. The IRRs were calculated on the basis of financial costs calculated in January 1975 prices. Estimates are also made of the actual cost of each segment of the time of construction, and the percentage of estimated increases is shown. Percentages of increase vary with scheduled construction time with the later roads reflecting a higher inflationary impact.

TIMETABLE OF ROAD CONSTRUCTION AND FOREST PRODUCTION



Rail Road Construction

Rail road in operation

- Alembé (Jan., 1978)
- Lopé (Feb., 1979)
- Booué (Apr., 1979)

Road construction

- Alembé (bridge+station): 1 yr.
- Lopé spur road : 6 mos.
- Booué-Koumaméyong: 1 1/2 yrs.
- Booué-Dilo: 1 1/2 yrs.

Forestry camps opening dates

Areas

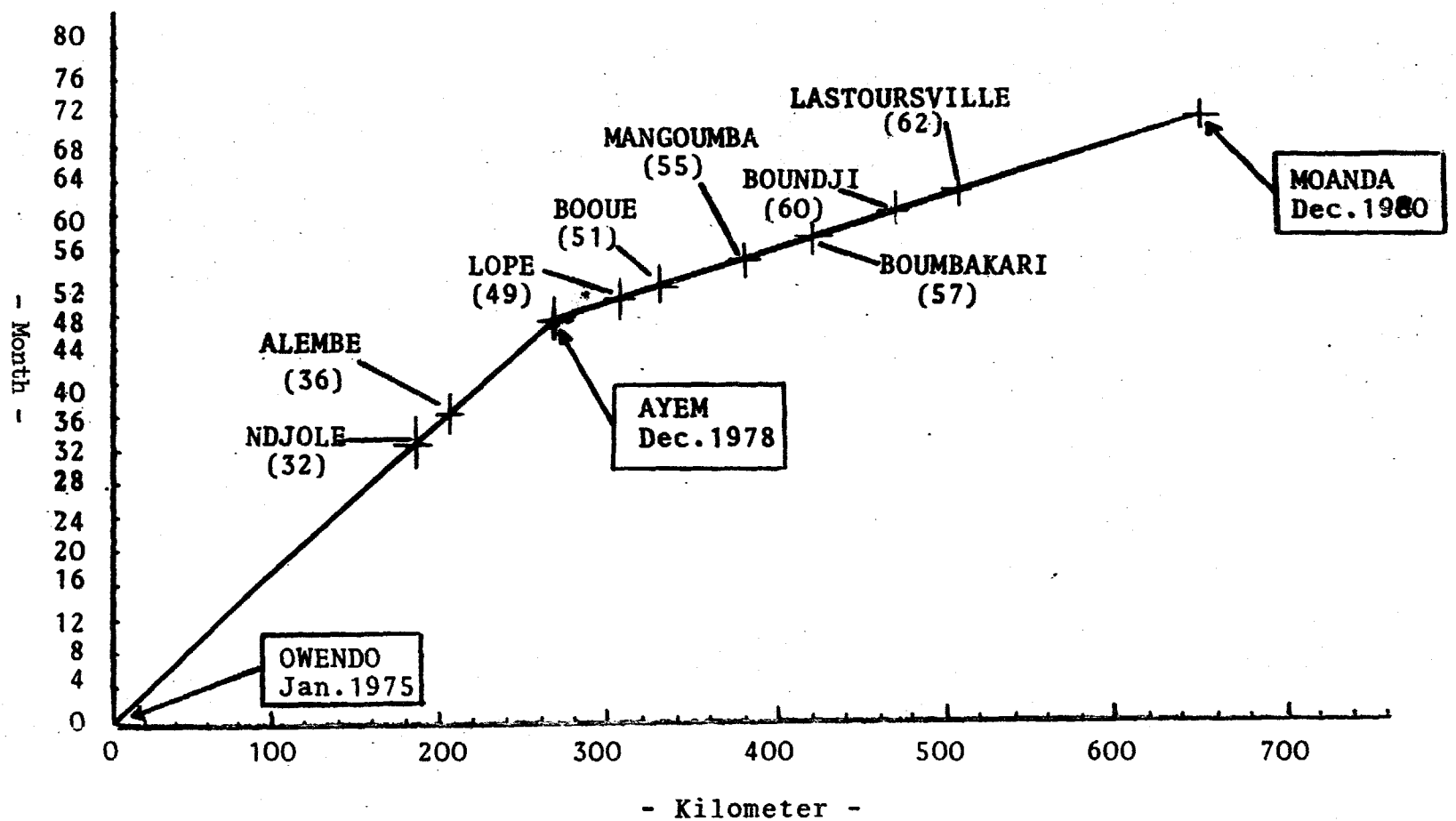
A- Lots nos 1,2,3,40,4E
B- Lots nos 18,19,21,23, 24,24bis,25,26,27,33
C- Lots nos 28,29,30,31,32 (route de l'Offoué) Phase 2
D- Lots nos 5,6,7,8,9
E- Lots nos, 12,13,14,15, 16,17E,17O,9bis,10,11

Forest production

Areas

A-(Alembé)
B-(Lopé)
C-(Lopé, route de l'Offoué)
D-(Booué-Koumaméyong)
E-(Booué-Ivindo-Dilo)

COMPLETION TIMETABLE OF RAILROAD STATIONS



Source : Office du Chemin de Fer Transgabonais

FOREST TAXES

The forest taxes include :

1°) The claim taxes

The claim taxes can be as high as 1 500 FCFA/ha, of which 500 FCFA is to be paid between the contract signature and January 1, 1976. The difference, 1 000 FCFA should be paid when the railroad begins operations. It is nevertheless understood that the Administration will accord some reduction in the claim tax according to the real potential of the distributed lots as estimated by the forest survey. The amount of the tax can be estimated at 120 FCFA/ton of timber reserve to be paid when starting forest production.

2°) The special location tax

This tax is payable in 17 annual installments beginning with initial forest production. The total levy depends upon the location of the lot relative to the railroad. it can be as low as 800 FCFA/ha for the farthest lot from the railroad, and as high as 11,560 FCFA/ha for the closest. The average for all the lots to be considered is estimated at 5 000 FCFA/ha, which gives an annual levy of about 300 FCFA/ha for the 17 years of production.

The forest tax assessments for the lots under study are presented in Table E-1.

FOREST TAXES (in 1000 FCFA)

Railhead	Lots Nos	Reserves Area/ 1000ha Timber (100 t)	1978	1979	1980	1981	1982	1983	1984
ALEMBE	1, 2, 3, 4E, 4W	468 (2545)	140,400 305,400	140,400	until 1995				
		Total :	445,800	140,400	until 1995				
LOPE A	18, 19, 24W, 25N, 25S, 26	342 (2966)		102,600 20,936					
B	27, 28, 29, 30 31, 32, 33	688 (6749)						206,400 809,880	206,400 until 2000
		Total		123,536				1,016,280	206,400 until 2000
BOOUE A	5, 6, 7, 8, 9W	243 (2514)		72,900 301,680	72,900	until 1996			
B	9E, 10, 11, 12 13, 14	311 (3259)		93,300 391,080	93,300	until 1996			
		Total		858,960	166,200	until 1996			

DIRECT TAXES ON TIMBER PRODUCTION PAYABLE AT PORT

OKOUME

1. - Local taxes (road maintenance, trade organization, port organization etc...) : 280 - 300 FCFA/t.

2. - Felling tax : 5 % of taxable value (80 % of f.o.b value)

3. - Reforestation tax : 3.5 % of taxable value

4. - Customs tax : 1st choice to saw mill quality : 22% of taxable value
other choice : 12% of taxable value

5. - Gross income tax for timber export : 2% of (taxable value+custom tax + felling tax + reforestation tax).

6. - National solidarity tax : 650 FCFA/t.

7. - Customs stamp : 5 % of (Customs Tax + Felling Tax + Reforestation Tax + Gross Income Tax + National Solidarity Tax + Local Tax).

8. - Derogation tax (1) : 950 FCFA/t.

9. - Forest credit of the BDG (1) (2) : 2% of the value before tax.

10. - Direct boarding tax : 80 FCFA/t.

OTHER TIMBER PRODUCTION

1. - Local taxes (road maintenance, trade organization, port organization) : 40 à 50 FCFA/t.

2. - Felling tax : 5 % of market price-list value

3. - Reforestation tax : 3.5 % of market price list value

4. - Customs stamp : 5 % of the total taxes specified in 1,2 and 3.

5. - Direct boarding tax : 80 FCFA/t.

(1) Taxes paid by companies who trade the Okoumé directly, without going through the O.N.B.G. (Office National du Bois du Gabon)

(2) BGD : Banque Gabonaise de Développement

ESTIMATE OF AVERAGE

DIRECT TAXES ON TIMBER PRODUCTION

(F.CFA / ton)

	OKOUME	OTHER SPECIES
Timber price (fob price) (hypothesis) per ton	23 000	16 000
Market list price or taxable value	18 400	12 800
1. Local taxes	300	50
2. Felling taxes	920	640
3. Reforestation tax	644	448
4. Export duty	4 048	-
5. Direct boarding tax	80	80
6. Gross income tax for timber	480	-
7. National solidarity tax	650	-
8. Customs stamp	352	57
Total taxes :	7 474	1 275

LOT No.	AREA (000 ha)	AVG. YIELD PER HA. OKOUME	OTHER	TOTAL	LOG RESERVES (000 TONS) OKOUME	OTHER	TOTAL	ANNUAL PRODUCTION (000 TONS) (1) OKOUME	OTHER	TOTAL	LOGGING CONDITIONS
1	118	3.0	1.0	4.0	354	118	472	21	7	28	Average
2	102	0.6	0.2	0.8	61	20	81	4	1	5	Average
3	129	4.2	1.8	6.0	512	220	732	30	13	43	Easy
4 W	88	7.0	3.0	10.0	616	264	880	36	16	52	Easy
4 E	38	7.0	3.0	10.0	266	114	380	16	7	23	Average
5	70	7.0	3.0	10.0	490	210	700	29	12	41	Easy
6	56	7.0	3.0	10.0	392	168	560	23	10	33	Easy
7	50	8.0	3.0	11.0	400	150	550	24	9	33	Easy
8	48	8.0	3.0	11.0	384	144	528	23	8	31	Easy
9 W	16	8.0	3.0	11.0	128	48	176	8	3	11	Easy
9 E	18	8.0	3.0	11.0	144	54	198	8	3	11	Easy
10	32	8.0	3.0	11.0	256	96	352	15	6	21	Easy
11	80	7.0	4.0	11.0	560	320	880	33	19	52	Average
12	46	8.0	3.0	11.0	368	138	506	22	8	30	Difficult
13	77	6.7	2.9	9.6	516	223	739	30	14	44	Average
14	58	7.0	3.0	10.0	406	174	580	24	10	34	Difficult
15	52	6.0	3.0	9.0	312	156	468	18	9	27	Average
16	87	5.0	3.0	8.0	435	261	696	26	15	41	Average
17 W	61	5.0	3.0	8.0	305	183	488	18	11	29	Average
17 E	52	5.0	3.0	8.0	260	156	416	15	9	24	Average
18	48	7.0	3.0	10.0	336	144	480	20	8	28	Easy
19	40	4.8	2.4	7.2	192	96	288	11	6	17	Average
20	50	7.0	3.0	10.0	350	150	500	20	9	29	Easy
21	60	8.0	3.0	11.0	480	180	660	28	11	39	Average
22	104	6.0	2.0	8.0	624	208	832	37	12	49	Average
23	110	6.0	3.0	9.0	660	330	990	39	19	58	Easy
24 E	70	8.0	3.0	11.0	560	210	770	33	12	45	Average
24 W	94	6.0	3.0	9.0	564	282	846	33	17	50	Average
25 N	36	7.0	3.0	10.0	252	108	360	15	6	21	Average
25 S	44	5.0	3.0	8.0	220	132	352	13	8	21	Easy
26	80	6.0	2.0	8.0	480	160	640	28	9	37	Easy
27	75	7.0	3.0	10.0	525	225	750	31	13	44	Average
28	105	9.0	3.0	12.0	945	315	1260	56	19	75	Difficult
29	133	4.5	2.7	7.2	598	359	958	35	21	56	Difficult
30	105	6.7	2.9	9.6	704	305	1008	41	18	59	Difficult
31	94	6.7	2.9	9.6	630	273	902	37	16	53	Difficult
32	88	6.7	2.9	9.6	590	255	845	34	15	49	Difficult
33	73	9.0	3.0	12.0	657	219	876	39	13	52	Difficult
34	68	8.1	2.7	10.8	551	184	734	32	11	43	Difficult
35	65	7.7	2.6	10.3	501	169	670	29	10	39	Difficult
36	89	7.7	2.6	10.3	685	231	917	40	13	53	Difficult
37	50	7.7	2.6	10.3	385	130	515	22	8	30	Difficult

(1) "Annual Production" is calculated as total potential production spread equally over 17 years production time.

The following formula should hold true of all lot numbers : AREA x AVG.YIELD PER HA. = LOG RESERVES

LOG RESERVES ÷ 17 = ANNUAL PRODUCTION

Sources : 1. Mactier, 1972

2. Developpement forestier Gabon, Plan de transport, 1975

3. Developpement forestier Gabon, Coûts en exploitation forestière, 1974

FOREST PRODUCTION BY SELECTED RAILHEAD AND BY YEAR ('000 tons)

PROJECTS	FOREST PRODUCTION, LOTS	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
ALEMBE 1/1/78	Existing logging production and lots nos 1,2,3,4E, EW																							
	OKOUME	197	250	250	210	210	107	107	107	107	107	107	107	107	107	107	107	107	53					
	OTHER	78	100	100	80	80	44	44	44	44	44	44	44	44	44	44	44	44	22					
L O P E (2/1/79)	Existing logging production																							
	OKOUME		80	80	80	80	80	80	80	80	80	80	80	80	80									
	OTHER		30	30	30	30	30	30	30	30	30	30	30	30	30									
	Lots Nos 18,19, 24W,25N,25S,26 (until opening of Boundji and Lastoursville stations)																							
	OKOUME		60	40																				
	OTHER		27	18																				
	Lots Nos 28,29,30,31,32 (Offoué road) and 27, 33																							
	OKOUME						93	185	281	281	281	281	281	281	281	281	281	281	281	281	281	281	281	281
	OTHER						39	79	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118
BOOUE (5/1/79)	Lots Nos 5,6,7,8,9W Koumameyong road																							
	OKOUME		31	85	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107				
	OTHER		12	33	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42				
	Former logging production Koumameyong road																							
	OKOUME		10	10	10	10	10	10	10	10	10	10	10	10	10									
	OTHER		5	5	5	5	5	5	5	5	5	5	5	5	5									
	Lots 9E,10,11,12,13,14 (Booué,dilo with bridge on the Dilo river)																							
	OKOUME		38	105	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132				
	OTHER		17	48	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60				

Source : (1) S.E.G.A., Rapport de Synthèse : Annexe A, 1972

(2) F.A.O. , Plan de Transport, 1973

CHECKLIST OF STATUTORY CRITERIA

In the right-hand margin, for each item, write answer or, as appropriate, a summary of required discussion. As necessary, reference the section of the Capital Assistance Paper, or other clearly identified and available document, in which the matter is further discussed.

The following abbreviations are used in the checklist:

FAA - Foreign Assistance Act of 1961, as amended

FAA, 1973 - Foreign Assistance Act of 1973

App. - Foreign Assistance and Related Program Appropriation Act, 1974

MMA - Merchant Marine Act of 1936, as amended.

I. FULFILLMENT OF STATUTORY OBJECTIVES

A. Needs Which the Loan is Addressing

1. FAA Section 103. Discuss the extent to which the loan will alleviate starvation, hunger and malnutrition, and will provide basic services to poor people enhancing their capacity for self-help.

103. No effect.

2. FAA Section 104. Discuss the extent to which the loan will increase the opportunities and motivation for family planning; will reduce the rate of population growth; will prevent and combat disease; and will help provide health services for the great majority of the population.

104. No effect.

3. FAA Section 105. Discuss the extent to which the loan will reduce illiteracy, extend basic education, and increase manpower training in skills related to development.

105. No effect.

4. FAA Section 106. Discuss the extent to which the loan will help solve economic and social development problems in fields such as transportation, power, industry, urban development, and export development.

106. Loan will finance access roads providing links to stations of the Trans-gabonese railroad, enabling timber to be transported by rail to port of Owendo for export, thus increasing Gabon's export earnings.

5. FAA Section 107. Discuss the extent to which the loan will support the general economy of the recipient country; or will support development programs conducted by private or international organizations.

107. Loan will directly result in increased foreign exchange earnings through timber export.

B. Use of Loan Funds

1. FAA Section 110. What assurances have been or will be made that the recipient country will provide at least 25% of the costs of the entire program, project or activity with respect to which such assistance is to be furnished under Sections 103-107 of the FAA?

110. GOG is firmly committed to project and will finance 50-60 per cent of all construction costs. "In addition, Loan Agreement requires that GOG contribute not less than 25% of total project costs".

2. FAA Section 111. Discuss the extent to which the loan will strengthen the participation of the urban and rural poor in their country's development, and will assist in the development of cooperatives which will enable and encourage greater numbers of poor people to help themselves toward a better life.

111. Effect will be direct through increased accessibility to markets and improved transportation, and indirect through general development of the areas affected by the roads.

3. FAA Section 112. Will any part of the loan be used to conduct any police training or related program (other than assistance rendered under Section 515(c) of the Omnibus Crime Control and Safe Streets Act of 1968 or with respect to any authority of the Drug Enforcement Administration of the FBI) in a foreign country?

112. No.

4. FAA Section 113. Describe the extent to which the programs, projects or activities to be financed under the loan give particular attention to the integration of women into the national economy of the recipient country.

113. No effect.

5. FAA Section 114. Will any part of the loan be used to pay for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions?

114. No.

II. COUNTRY PERFORMANCE

A. Progress Towards Country Goals

1. FAA §§201(b)(5), 201(b)(7), 201(b)(8), 208. Discuss the extent to which the country is:

201(b)(5), 201(b)(7), 201(b)(8), 208.

(a) Making appropriate efforts to increase food production and improve means for food storage and distribution.

Current agriculture accounts for only 5% ofGPD and much food especially in urban areas is imported. Due to dense forests, relatively little land is available for crop production. However, agricultural production is growing, especially cocoa, and railroad and access roads will facilitate distribution.

(b) Creating a favorable climate for foreign and domestic private enterprise and investment;

Current and projected investment climate in Gabon is excellent.

(c) Increasing the people's role in the developmental process:	**Given Gabon's small indigenous population (less than one million), many large enterprises are operated by the Government or foreigners. However GOG is making serious efforts to broaden the base of participation in industrial and developmental institutions.**
(d) Allocating expenditures to development rather than to unnecessary military purposes or intervention in other free countries' affairs:	**Primary motivation of civilian government is economic development.**
(e) Willing to contribute funds to the project or program:	**GOG will fund at least half of project costs.**
(f) Making economic, social and political reforms such as tax collection improvements and changes in land tenure arrangement; and making progress toward respect for the rule of law, freedom of expression and of the press, and recognizing the importance of individual freedom, initiative, and private enterprise;	**Gabon has a relatively well developed tax system; private enterprise is flourishing. The rule of law and freedom of personal expression are satisfacty and superior to many neighboring countries in West and Central Africa.**

(g) Responding to the vital economic, political and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.

Government leadership is dynamic and action-oriented. Great progress in development has been made in recent years.

B. Relations with the United States

1. FAA Sec. 620(c). If assistance is to a government, is the government indebted to any U.S. citizen for goods or services furnished or ordered where: (a) such citizen has exhausted available legal remedies, including arbitration, or (b) the debt is not denied or contested by the government, or (c) the indebtedness arises under such government's or a predecessor's unconditional guarantee?

620(c). **No.**

2. FAA Sec. 620(d). If the loan is intended for construction or operation of any productive enterprise that will compete with U.S. enterprise, has the country agreed that it will establish appropriate procedures to prevent export to the U.S. of more than 20% of its enterprises annual production during the life of the loan?

620(d). **Not Applicable.**

3. FAA Sec. 620(e)(1). If assistance is to a government, has the country's government, or any agency or subdivision thereof, (a) nationalized or expropriated property owned by U.S. citizens or by any business entity not less than 50% beneficially owned by U.S. citizens, (b) taken steps to repudiate, or nullify existing contracts or agreements with such citizens or entity, or (c) imposed or enforced discriminatory taxes or other exactions, or restrictive maintenance or operation conditions? If so, and more than six months has elapsed since such occurrance, identify the document indicating that the government, or appropriate agency or subdivision thereof, has taken appropriate steps to discharge its obligations under international law toward such citizen or entity? If less than six months has elapsed, what steps, if any, has it taken to discharge its obligations?

620(e)(1). **No.**

4. FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction by mob action of U.S. property, and failed to take appropriate measures to prevent a recurrence and to provide adequate compensation for such damage or destruction? — 620(j). No.

5. FAA Sec. 620(l). Has the government instituted an investment guaranty program under FAA Sec. 221(b)(1) 234(a)(1) for the specific risks of inconvertibility and expropriation or confiscation?

6. FAA §620(o). Fisherman's Protective Act of 1954, as amended, Section 5. Has the country seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters? If, as a result of a seizure, the U.S.G. has made reimbursement under the provisions of the Fisherman's Protective Act and such amount has not been paid in full by the seizing country, identify the documentation which describes how the withholding of assistance under the FAA has been or will be accomplished. — 620(o). No.

7. FAA Sec. 620(q). Has the country been in default, during a period in excess of six months, in payment to the U.S. on any FAA loan? — 620(q). No.

8. FAA Sec. 620(t). Have diplomatic relations between the country and the U.S. been severed? If so, have they been renewed? — 620(t). No.

C. Relations with Other Nations and the U.N.

1. FAA Sec. 620(i). Has the country been officially represented at any international conference when that representation included planning activities involving insurrection or subversion directed against the U.S. or countries receiving U.S. assistance?	620(i). No.
2. FAA Secs. 620(a), 620(n). Has the country sold, furnished, or permitted ships or aircraft under its registry to carry to Cuba or North Vietnam, items of economic, military or other assistance?	620 (a) & (n). No.
3. FAA Sec. 620(u); App. Sec. 107. What is the status of the country's U.N. dues, assessments or other obligations? Does the loan agreement bar any use of funds to pay U.N. assessments, dues or arrearages?	620 (u). As of 3/31/75 Gabon owed $82,281 to the UN in dues, including $56,030 for the current year and $26,251 in arrears.

D. Military Situation

1. FAA Sec. 620(i). Has the country engaged in or prepared for aggressive military efforts directed against the U.S. or countries receiving U.S. assistance	620(i). No.
2. FAA Sec. 620(s). What is (a) the percentage of the country's budget devoted to military purposes, and (b) the amount of the country's foreign exchange resources used to acquire military equipment, and (c) has the country spent money for sophisticated weapons systems purchased since the statutory limitation became effective?	620 (s). As of the latest assessment of Section 620 (s) (FY 1974). Gabon was not found to be ineligible because of the provisions of this Section.

2. (2) Is the country diverting U.S. development assistance or PL 480 sales to military expenditures? **No.**

2. (3) Is the country diverting its own resources to unnecessary military expenditures? (Findings on these questions are to be made for each country at least once each fiscal year and, in addition, as often as may be required by a material change in relevant information.) **No.**

III. CONDITION OF THE LOAN

A. General Soundness

Interest and Repayment

1. FAA §§201(d), 201(b)(2). Is the rate of interest excessive or unreasonable for the borrower? Are there reasonable prospects for repayment? What is the grace period interest rate; the following period interest rate? Is the rate of interest higher than the country's applicable legal rate of interest.

201(d), 201(b)(2). GOG is readily able to service loan at standard AID terms of 40 years and 3% interest, including 10 year grace period when interest is 2%.

Financing

1. FAA §201(b)(1). To what extent can financing on reasonable terms be obtained from other free-world sources, including private sources within the U.S.?

201(b)(1). US Ex-Im Bank has $20 million line of credit to finance equipment and services for the railroad. FRG plans loan of 30 million and AFDB $6 million for access road network.

Economic and Technical Soundness

1. FAA §§201(b)(2), 201(e). The activity's economic and technical soundness to undertake loan; does the loan application, together with information and assurances, indicate that funds will be used in an economically and technically sound manner?

201(b)(2), 201(e). AID consultant, Louis Berger, Inc. has determined project to be technically sound.

87

2. FAA §611(a)(1). Have engineering, financial, and other plans necessary to carry out assistance, and a reasonable firm estimate of the cost of assistance to the U.S., been completed?

611 (a)(1). Yes. Berger, the consultant has made detailed cost estimates based on existing engineering data. AID loan is maximum of $5 million.

3. FAA §611(b); App. §101. If the loan or grant is for a water or related land-resources construction project or program, do plans include a cost-benefit computation? Does the project or program meet the relevant U.S. construction standards and criteria used in determining feasibility?

611(b). App. 101. In the opinion of AID-financed consultant, Louis Berger, Inc cost-benefit of project is favorable and construction standards will meet U.S. criteria.

4. FAA §611(e). If this is a Capital Assistance Project with U.S. financing in excess of $1 million, has the principal A.I.D. officer in the country certified as to the country's capability effectively to maintain and utilize the project?

611(e). RDO/Yaounde has made a Section 611(e) certification regarding Gabon's capability to utilize and maintain the project.

B. Relation to Achievement of Country and Regional Goals

Country Goals

1. FAA §§207, 281(a). What is this loan's relation to:

(a) Institutions needed for a democratic society and to assure maximum participation on the part of the people in the task of economic development?

207, 281(a). Project itself along with largely self-financed construction of railroad, illustrates intense development-minded motivation of Gov't and people.

(b) Enabling the country to meet its food needs both from its own resources and through development, with U.S. help, of infrastructure to support increased agricultural productivity?

Project is not aimed at agricultural sector except that increase cocoa production is likely to move by road and train to Libreville for export.

(c) Meeting increasing need for trained manpower?

No training program but construction itself will provide experience for local labor.

(d) Developing programs to meet public health needs?

No direct relationship exists.

(c) Assisting other important economic, political, and social development activities, including industrial development, growth of free labor unions; cooperatives and voluntary agencies; improvement of transportation and communication systems; capabilities for planning and public administration; urban development; and modernization of existing laws?

Project is aimed directly at improving Gabon's transportation system.

2. FAA §201(b)(4). Describe the activity's consistency with and relationship to other development activities, and its contribution to relizable long-range objectives.

201(b)(4). Project is an integral part of the Transgabon railroad, Gabon's No. 1 development project.

3. FAA §201(b)(9). How will the activity to be financed contribute to the achievement of self-sustaining growth?

201(b)(9). Project will result in increased export earnings for up to a 25 year period.

4. FAA §201(f). If this is a project loan, describe how such project will promote the country's economic development, taking into account the country's human and material resource requirements and the relationship between ultimate objectives of the project and overall economic development.

201(f). Project provides an essential link in Gabon's transport infrastructure. Development will benefit through growth of export sector as direct result of project.

5. FAA §201(b)(3). In what ways does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities?

201(b)(3). In very direct way project will permit utilizati of country's inland timber resources with resulting increases in foreign exchang earnings.

6. FAA §281(b). How does the program under which assistance is provided recognize the particular needs, desires, and capacities of the country's people; utilize the country's intellectual resources to encourage institutional development; and support civic education and training in skills required for effective participation in political processes.

281(b). As a simple road-building project, institution building as such is not a project objective.

7. FAA §601(a). How will this loan encourage the country's efforts to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture, and commerce; and (f) strengthen free labor unions?

601(a).

a. through increased timber exports using projects access roads.
b. by use of private timber companies.
c. no direct involvement.
d. by contracts with several private companies.
e. possible use of local construction contractor and sub-contractors.
f. due to labor shortage in Gabon, much labor will be imported from other African countries on non-union basis.

8. FAA §202(a). Indicate the amount of money under the loan which is: going directly to private enterprise; going to intermediate credit institutions or other borrowers for use by private enterprise; being used to finance imports from private sources; or otherwise being used to finance procurements from private sources.

202(a). It is estimated that 90% of loan will directly finance US good and services from private sources.

9. FAA §611(a)(2). What legislative action is required within the recipient country? What is the basis for a reasonable anticipation that such action will be completed in time to permit orderly accomplishment of purposes of loan?

611(a)(2). No legislative action in recipient country is required by this loan.

Regional Goals

1. FAA §619. If this loan is assisting a newly independent country, to what extent do the circumstances permit such assistance to be furnished through multilateral organizations or plans?

619. Gabon has been fully independent since 1960.

2. FAA §209. If this loan is directed at a problem or an opportunity that is regional in nature, how does assistance under this loan encourage a regional development program? What multilateral assistance is presently being furnished to the country?

209. This is not a regional project.

C. Relation to U.S. Economy

Employment, Balance of Payments, Private Enterprise.

1. FAA §§201(b)(6); 102. What are the possible effects of this loan on U.S. economy, with special reference to areas of substantial labor surplus? Describe the extent to which assistance is constituted of U.S. commodities and services, furnished in a manner consistent with improving the U.S. balance of payments position.

201(b)(6); 102. 90% of loan will finance US goods and services (and 10% local costs) Loan will probably finance corragated metal culverts, reinforcing steel and earth-moving equipment.

2. FAA §§612(b); 636(h). What steps have been taken to assure that, to the maximum extent possible, foreign currencies owned by the U.S. and local currencies contributed by the country are utilized to meet the cost of contractual and other services, and that U.S. foreign owned currencies are utilized in lieu of dollars?

612(b); 636(h). Gabon's currency is the CFA Franc which is not owned in surplus by U.S. There will be substantial local currency costs paid by GOG.

3. FAA §601(d); App. §108. If this loan is for a capital project, to what extent has the Agency encouraged utilization of engineering and professional services of U.S. firms and their affiliates? If the loan is to be used to finance direct costs for construction, will any of the contractors be persons other than qualified nationals of the country or qualified citizens of the U.S.? If so, has the required waiver been obtained?

601(d).; App. 108. U.S. hopes to interest other donors in joint funding proposal. In this case US as a minority lender would finance equipment, and construction contractor would probably be European. No waiver needed.

4. FAA §608(a). Provide information measures to be taken to utilize U.S. Government excess personal property in lieu of the procurement of new items.

608 (a). Loan agreement provides for information to be given to the borrower regarding availability of U.S. excess property.

5. FAA §602. What efforts have been made to assist U.S. small business to participate equitably in the furnishing of commodities and services financed by this loan?

602. Procurement will be advertized in the Commerce Business Daily.

6. FAA §621. If the loan provides technical assistance, how is private enterprise on a contract basis utilized? If the facilities of other Federal agencies will be utilized, in what ways are they particularly suitable; are they competitive with private enterprise (if so, explain); and how can they be made available without undue interference with domestic programs?

621. Loan does not provide technical assistance.

7. FAA §611(c). If this loan involves a contract for construction that obligates in excess of $100,000, will it be on a competitive basis? If not, are there factors which make it impracticable?

611(c). Yes.

8. FAA §601(b). Describe the efforts made in connection with this loan to encourage and facilitate participation of private enterprise in achieving the purposes of the Act.

601(b). Firms competing for the construction contract(s) will probably all be from the private sector.

Procurement

1. FAA §604(a). Will commodity procurement be restricted to U.S. except as otherwise determined by the President?

604(a). U.S. and Code 941.

2. FAA §604(b). Will any part of this loan be used for bulk commodity procurement at adjusted prices higher than the market price prevailing in the U.S. at time of purchase?

604(b). No.

3. FAA §604(e). Will any part of this loan be used for procurement of any agricultural commodity or product thereof outside the U.S. when the domestic price of such commodity is less than parity?

3 604(e). No.

4. FAA §604(f). Will the agency receive the necessary pre-payment certification from suppliers under a commodity import program agreement as to description and condition of commodoties, and on the basis of such, determine eligibility and suitability for financing?

4 604(f). Not Applicable.

D. Other Requirements

1. FAA §201(b). Is the country among the 20 countries in which development loan funds may be used to make loans in this fiscal year?

201 (b). Yes.

2. App. §105. Does the loan agreement provide, with respect to capital projects, for U.S. approval of contract terms and firms?

105. Yes.

3. FAA §620(k). If the loan is for construction of a production enterprise, with respect to which the aggregate value of assistance to be furnished will exceed $100 million, what preparation has been made to obtain the express approval of the congress?

620(k). Not Applicable

4. FAA §620(b), 620(f); Has the President determined that the country is not dominated or controlled by the international Communist movement? If the country is a Communist country (includin but not limited to, the countries listed in FAA §620(f)) and the loan is intended for economic assistance, have the findings required by FAA §620(f) and App. §109(b) been made and reported to the Congress?

620(b), 620(f).

Under a Presidential delegation of authority, the Secretary of State determined on October 11, 1961 that Gabon is not dominated or controlled by the international communist movement. Gabon's status has not changed since that time.

94

5. FAA Section 620(h). What steps have been taken to insure that the loan will not be used in a manner which, contrary to the best interest of the United States, promotes or assists the foreign aid projects of the Communist-bloc countries?

620(h). As far as is known, there are no communist bloc aid projects in Gabon in this area which might benefit from project.

6 FAA Section 636(i). Will any part of this loan be used in financing non-U.S. manufactured automobiles? If so, has the required waiver been obtained?

636(i). No.

7. FAA Section 620(g). Will any part of this loan be used to compensate owners for expropriated or nationalized property? If any assistance has been used for such purpose in the past, has appropriate reimbursement been made to the U.S. for sums diverted?

620(g).

No.

Not Applicable.

8. FAA Section 201(f). If this is a project loan, what provisions have been made for appropriate participation by the recipient country's private enterprise?

201(f). Local private enterprises are expected to participate in sub-contracting.

9. App. Section 103. Will any funds under the loan be used to pay pensions, etc., for persons who are serving or who have served in the recipient country's armed forces?

103. No.

10. MMA Section 901.b. Does the loan agreement provide for compliance with U.S. shipping requirements that at least 50% of the gross tonnage of all commodities financed with funds made available under this loan (computed separately by geographic area for dry bulk carriers, dry cargo liners, and tankers) be transported on privately-owned U.S. flag commercial vessles to the extent such vessels are available at fair and reasonable rates for U.S. flag vessels and that at least 50% of the gross freight revenue generated by all shipments financed with funds made available under this loan and transported on dry cargo liners be paid to or for the benefit of privately-owned U.S. flag commercial vessels?

901.b. Yes.

95

18. App. Section 113. Will any of the loan funds be used to acquire currency of recipient country from non-U.S. Treasury sources when excess currency of that country is on deposit in U.S. Treasury?

App. Sec. 113. No.

19. App. Section 114. Have the House and Senate Committees on Appropriations been notified five days in advance of the availability for obligation of funds for the purposes of this project?

App. Sec. 114. Project was included in FY 75 CP. However, a new notification to Congress will be made not less than 15 days prior to authorization to reflect a change in appropriation categories from Section 103. Food and Nutrition to Section 106 Selected Development Problems.

PRP APPROVAL CABLE

E X T R A C T

VV TAA809ESA784
PP RUTAIJ
DE RUEHC #1624 0662225
ZNR UUUUU ZZH
P R 072157Z MAR 75
FM SECSTATE WASHDC
TO RUTADE/AMEMBASSY YAOUNDE PRIORITY 3888
RUTAIJ/AMEMBASSY ABIDJAN 2630
INFO RUFJCX/AMEMBASSY LIBREVILLE 3959
RUFJAR/AMEMBASSY BANGUI 3907
BT
UNCLAS STATE 051624

ACTION
REDSO

INFO
CHARGE
CHRON

AIDAC

E.O. 11652:N/A

TAGS:

SUBJECT:PROJECT DESIGN - NORTH CMAEROON SEED: GABON FEEDER ROADS; CAR SEED; SHELTER SECTOR TECH ASSISTANCE
REFS: (A) ABIDJAN 1718; (B) YAOUNDE 699; (C) STATE 48244; (D) NDJAMENA 495; (E) YAOUNDE 717

[illegible] RETURN AID/W.

2. GABON FEEDER ROADS - REQUEST REDSO PROCEED WITH DESIGN AND PP FOR FEEDER ROAD LOAN FOR CONSIDERATION FY 1975 FUNDING. DESIGN TO FOLLOW PATH SUGGESTED BY REDSO IN PRP AS REFINED DURING RECENT DISCUSSIONS BETWEEN WEDEMAN AND AID/W AND BY SUGGESTIONS CONTAINED SEPTEL REPORTING RESULTS PRP REVIEW. REGRET DELAYS IN TRANSMISSION SEPTEL, WHICH SHOULD ARRIVE PRIOR/SIMULTANEOUSLY THIS CABLE. BAHL COULD HAND CARRY PP FROM REDSO TO AID/W O/A APRIL 11, 1975 DURING HIS RETURN FROM YAOUNDE. IF THIS AGREEABLE REDSO THEN APRIL 11 DATE SHOULD BE CONSIDERED PP DEADLINE. PLEASE ADVISE.

PCI 72-6

LOGICAL FRAMEWORK FOR SUMMARIZING PROJECT DESIGN

Est. Project Completion Date 1978
Date of this Summary 4/30/75
Total US Funding: $5 million

Project Title: Gabon Access Roads

DEVELOPMENT HYPOTHESES

MANAGEABLE INTEREST

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
If Purpose, Then Goal Program Goal: The broader objective to which this project contributes: (A-1) Sector Goal: To create a basic transportation infrastructure in Gabon.	Measures of Goal Achievement: (A-2) Construction of 337 km of rail and 122 km of access roads and four bridges by 1979.	(A-3) National economic and transportation statistics.	Concerning long term value of program/project: (A-4) GOG will continue to place top priority on transportation infrastructure development.
If Outputs, Then Purpose Project Purpose: (B-1) Project Purpose: To provide a means to undertake effective exploitation of Gabon's timber reserves through access road links to the future railroad.	Conditions that will indicate purpose has been achieved: End of project status. (B-2) 1. Capacity to evacuate 1.5 mil tons of timber per year on roads to rail and then to port for export. 3 million hectare forest to be exploited. 2. Road construction is pegged to schedule for building railroad and stations.	(B-3) GOC trade and agricultural production statistics.	Affecting purpose-to-goal link: (B-4) 1. Construction of railroad and stations will proceed according to schedule. 2. FOB price of wood which has fallen recently will rise again and will stabilize at a somewhat higher price.
If Inputs, Then Outputs Outputs: (C-1) Outputs: 1. Construction of three segments of feeder roads. 2. Construction of four bridges. 3. Links made with three rail stations.	Magnitude of Outputs necessary and sufficient to achieve purpose. (C-2) 1. Completion of 250 meter Alembé bridge & 150 meter approach by Jan. 1978. 2. Completion of road link to Lopé station (6 km by Dec. 1978). 3. Completion of M'Badi-Ivindo-Dilo road (67 km) and three bridges by December 1978. 4. Completion of Koumameyong-Booué road (48 km) by December 1978.	(C-3) 1. Design and engineering specifications. 2. Progress reports by firm supervising construction.	Affecting output-to-purpose link: (C-4) 1. Output indicators in (C-2) cover all four planned roads assume joint funding by GOG and foreign donors. 2. GOG will be able to cover full amount of cost escalation from its own resources. 3. Final design and bid documents will be completed by GOG consultants Gauff & SDGA as scheduled(e of CY 1975).
Inputs: Activities and Types of Resources (D-1) Inputs: (by AID) 1. Code 941 equipment and materials mostly road-building equipment, corrugated metal culverts and reinforcing steel. 2. AID project manager. 3. Economic feasibility study by US consultant.	Level of Effort/Expenditure for each activity. (D-2) 1. $5.0 mil AID loan in FY 1975. 2. U.S. equipment and supplies contracted for and delivered in 1976-78. 3. Contracts signed in 1976 for construction and supervision of constr. 4. Econ. feas. study completed in April 75 by L. Berger, In'l.	(D-3) 1. Records and reports of contractor and suppliers. 2. Quarterly progress reports of firm supervising construction.	Affecting input-to-output link: (D-4) 1. Eligible Code 941 equipment and materials can be identified. 2. Other donor will extend loan as planned (FRG $12-13 million) 3. GOG (DPW) will develop and implement a satisfactory road maintenance program.

GABON ACCESS ROADS
CERTIFICATION PURSUANT TO SECTION 611 (E)
OF THE FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED

I, John W. Koehring, the Principal Officer of the Agency for International Development in Gabon, having taken into account, inter alia:

A. The Government of Gabon Department of Public Works has been charged with responsibility to ensure necessary institutional cooperation among Gabonese Government entities required to achieve effective operation and maintenance of the proposed roads;

B. The inclusion in this capital assistance project of equipment and commodities to assist the Government of Gabon in discharging its responsibility for maintenance and operation of the roads;

C. The inclusion in this capital assistance project of provisions for a plan for project implementation;

D. The inclusion in this capital assistance project of provisions for engineering services which may be financed from the A.I.D. Loan, to supervise construction of the project in all phases and secure completion in accordance with the project objectives;

Do hereby certify that in my judgment the Government of Gabon will have the financial capability and the human resources capability to implement, maintain and utilize effectively subject capital assistance project. This judgment is based on the following factors:

1. The Government of Gabon has for several years considered as its top development priority the construction of the TransGabon Railroad and ancillary projects including the access road network which forms the basis of this project.

2. The Government of Gabon's present and projected budgetary and financial position is very strong, based in part on earnings from the exportation of minerals and timber which this project is designed to promote further.

3. The Government of Gabon is taking or has promised to take the necessary measures to ensure interdepartmental cooperation and institutional changes necessary for effective operation and maintenance of the project.

John W. Koehring
Regional Development Officer
Yaounde, Cameroon

DRAFT LOAN AUTHORIZATION

A.I.D. Loan No.:
Provided Under: FAA Sec 106
Selected Development Problems
For Gabon Access Roads

Pursuant to the authority vested in the Administrator of the Agency for International Development ("A.I.D.") by the Foreign Assistance Act of 1961, as amended, and the delegations of authority issued thereunder, I hereby authorize the establishment of a loan pursuant to Section 106 of said Act to the Government of Gabon (Borrower) of not to exceed Five Million United States Dollars ($5,000,000) to assist in financing the United States Dollar and local currency costs (such local currency costs not to exceed the equivalent of Five Hundred Thousand United States Dollars ($500,000) of road construction commodities and commodity-related services for the Gabon Access Roads Project and subject to the following terms and conditions:

1. Terms and Repayment and Interest

   (a) Borrower shall repay the loan to A.I.D. in United States dollars within forty (40) years from the date of the first disbursement under the loan, including a grace period of not to exceed an (10) years.

   (b) Borrower shall pay to A.I.D. in United States dollars interest at the rate of two percent (2%) per annum during the grace period and three percent (3%) per annum thereafter on the

outstanding disbursed balance of the loan and any due and unpaid interest accrued thereon.

2. Other Terms and Conditions

(a) Except for ocean shipping, goods and services financed under the Loan shall have their source and origin in Gabon or countries included in A.I.D. Geographic Code 941, provided, however, that marine insurance may be financed under the Loan only if it is obtained on a competitive basis and any claims thereunder are payable in freely convertible currencies. Ocean shipping financed under the Loan shall be procured in any country included in A.I.D. Geographic Code 941, not including Gabon.

(b) The Loan shall be subject to such other terms and conditions as A.I.D. may deem advisable.

_____
Assistant Administrator
Bureau for Africa

_____
Date

Enviromental Annex

(based on the AID Environmental Assessment Guideline Manual of September 1974)

An examination of environmental factors reveals that construction of access roads under this project and the subsequent logging operations will not have a significant impact on the ecology of the region. As a minor donor in a large project, the U.S. does not have direct control over ecological considerations but is assured by the GOG that due attention will be paid to the environmental factor.

Resource Linkage - Two of the four planned segments are reconstruction, extension and modernization of existing roads; one is an entirely new road through a dense forest and the fourth is a bridge over a river to provide the only northern access to the Alembe rail station. The region is heavily forested with virtually no rangeland, little wildlife. The population of the region is very small and limited to hamlets and villages. There are no known sites of cultural, religious or historic importance in the area affected by the project. It is estimated that the logging operations will be limited to one commercially usable tree per hectare. While it is true that the cutting of other smaller trees may be necessary to provide an access to the marketable timber, experience indicates that such trails would be completely overgrown by underbrush in the rain forest within two years.

Physical Aspects - With a very small population in the region, no squatter development is expected.

The road design will take care to avoid interrupting natural water flows and drainage.

Air pollution will be minimal except during the actual period of construction and no adverse effect is expected on the small local population.

The GOG is making increasing use of reforestation. A tax of 500-600 FCFA per ton is currently applied to cut logs to finance the reforestation effort.

Socio-cultural Aspects - Negative effects will be virtually nil because of the very small current population in the region, especially with respect to human dislocation caused by the right of way, aesthethic considerations, increased noise level and traffic congestion. As discussed in the social analysis section in the paper (page 51), a limited

amount of positive social effect can be expected after the roads have been completed, providing a link with three train stations in the central region of Gabon.

Public health Aspects - Also due to the region's small population, no project-connected health problems are anticipated. With respect to pedestrian and traffic safety, the GOG will implement standard provisions for safety markings.

ANNEX II

COMMENTS ON THE TRANSGABON RAILROAD

Rates and IRR Analysis

Due to the highly export-oriented character of its economy, the Government of Gabon has predictably linked the projected Transgabonese railroad to the export of tropical wood, manganese and iron. For years the railroad has been the Government's number one priority project, and, much to the GOG's satisfaction, actual construction began in January of this year.

Immediate plans for the railroad include the construction of an important seaport at Owendo (near Libreville) and the extension of track over nearly 700 kms, penetrating deep into the interior of the country. An initial section running roughly through the towns of Booué and Lastourville is to transport primarily the log production of an estimated 30,000,000 ton potential forest. Beyond the forest area, the remaining track will extend to the manganese-rich area of Moanda/Franceville. Eventually, it is expected that a final branch will be built from Booué to the iron ore deposits in the Mekambo-Belinga region, representing an additional 250 km of track. Completion of the railroad through Moanda/Franceville is currently estimated for the end of 1980.

The Gabonese Railroad Authority (OCTRA) has established a system of transport rates which will be applied equally over the entire length of the railway. As of January 1975 those rates were fixed at the following levels :

MERCHANDISE	FCFA/Ton-Kilometer
Logs	4.00
Manganese	3.00
Petroleum Products	9.00
Misc.	14.00

Using these price levels and based on what would appear to be a reasonable timetable, OCTRA has estimated that overall railroad operations, including port facilities, obtain a 4.94% financial rate of return. The computer print-out of this study is attached.