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The World Bank

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Report No. 5653

GUINEA
SECOND HIGHWAY PROJECT
CREDIT 953-GUI

PROJECT COMPLETION REPORT

May 15, 1985

West Africa Region
Transportation Division I

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ABBREVIATIONS AND ACRONYMS

adt	average daily traffic
BADEA	Arab Bank for Economic Development in Africa
CGR	Provincial level administration with ministerial rank
DGPC	General Directorate of Roads and Bridges
EEC	European Economic Community
HDM	Highway Design and Maintenance Model
ICB	International Competitive Bidding
MIGAT	Ministry of Infrastructure and Major Works
MTP	Ministry of Public Works
ONAH	National Fuels Office
OPR	Road Project Office
voc	vehicle operating cost

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Preface

This Project Completion Report (PCR) has been prepared for the Second Highway Project in Guinea for which Credit 953-GUI, in the amount of US\$13.0 million, and an ECC Special Action Fund, in various currencies amounting to US\$ 4.0 million equivalent were signed on November 2, 1979. Credit 953-GUI was fully committed by December 1983. Processing of payment requests was delayed by political events following the President's death, so that a total of US\$743,660 remained on the books as undisbursed by July 10, 1984. However, payment requests in the amount of US\$412,020 were received in early July and the balance of US\$331,640 should be disbursed by September 1984, 15 months later than estimated at appraisal. The EEC Special Action Fund allocation was fully disbursed on February 2, 1984, seven months later than estimated at appraisal. Parallel financing in the amount of US\$6.0 million was provided by BADFA.

The PCR was prepared by WAPT1 and is based on Appraisal Report No. 2363-GUI dated August 20, 1979, supervision reports, legal documents, project correspondence files and consultant progress and draft completion reports.

In accordance with the revised project performance auditing procedures this PCR was read in the Operations Evaluation Department but the project was not audited by OED staff. The draft PCR was sent to the Borrower for comments; however, none were received.

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Key Project Data

<u>Item</u>	<u>Appraisal Expectation</u>	<u>Actual or Current Estimate</u>
Total Project Cost (US\$ million)	28.7	29.5
Underrun or Overrun (%)		3.0
Credit Amount (US\$ million) ^{1/}		
- IDA	13.0	13.0
- EEC Special Action Fund	4.0	4.0
Disbursed		16.45
Cancelled		0
Repaid as of April 1984		0
Outstanding as of April 1984		16.45
Date Physical Components Completion	Dec.1982	Dec.1983
Proportion Completed by Above Date (%)		35
Proportion of Time Underrun or Overrun (%)		33
Economic Rate of Return (%)	49.0	25.0
Institutional Performance	Good	Poor

Accumulated Disbursements
(US\$ million)

Financial Year	<u>1980</u>		<u>1981</u>		<u>1982</u>		<u>1983</u>		<u>1984</u>	
	<u>IDA</u>	<u>EEC</u>								
Appraisal Estimate	3.0	3.0	6.8	4.0	11.0	4.0	13.0	4.0	13.0	4.0
Actual	0.5	0	4.8	2.9	7.2	3.5	12.0	3.9	13.0	4.0
Actual as Percent of Estimate (%)	17	0	71	73	65	88	92	97	100	100

^{1/} BADEA cofinanced the project in the amount of US\$6 million equivalent (parallel financing).

Other Project Data

<u>Item</u>	<u>Original Plan</u>	<u>Revisions</u>	<u>Actual or Est. Actual</u>
First Mention in Project Files			2/77
Government Application			-
Negotiations	12/78	4/79	7/30/79
Board Approval	2/79	7/79, 8/79	9/18/79
Credit Documents Signed	4/79	9/79	11/2/79
Effectiveness Date	1/31/80		1/29/80
Closing Date	12/31/83		12/31/84
Borrower	Republic of Guinea		
Executing Agency	Ministry of Public Works		
Fiscal Year			Jan 1-Dec 31
Follow on Project			Third Hwy Pjct
Credit Number			1457-GUI
Amount of Credit			US\$28.0

MISSION DATA

<u>Item</u>	<u>Month/Year</u>	<u>No. of Weeks</u>	<u>No. of Persons</u>	<u>Staffweeks</u>	<u>Date of Report</u>
Identification	3/78	1.5	2	3.0	4/78
Preparation	-	-	-	-	-
Preappraisal	7/78	1.0	2	2.0	7/78
Appraisal	10/78	2.5	2	5.0	08/79
Total		5.0		10.0	
Supervision I	9/79	1.0	1	1.0	11/79
Supervision II	2/80	1.0	1	1.0	4/80
Supervision III	5/80	1.0	2	2.0	7/80
Supervision IV	2/81	1.0	2	2.0	3/81
Supervision V	6/81	1.0	1	1.0	7/81
Supervision VI	12/81	1.5	3	4.5	1/82
Supervision VII	2/82	2.5	4	10.0	3/82
Supervision VIII	7/82	1.0	1	1.0	8/82
Supervision IX	10/82	1.0	2	2.0	11/82
Supervision X	12/82	1.0	2	2.0	1/82
Supervision XI	3/83	1.0	2	2.0	7/83
Supervision XII	8/83	1.0	1	1.0	9/83

Current Exchange Rate

Name of Currency:	Guinean Syli (GSy)
Year:	
Appraisal Year Average: 1979	GSy 20 = US\$1.0
Intervening Years Average: 1980-1983	GSy 22 = US\$1.0
Current Year Average: Jan. - March 1984	GSy 23 = US\$1.0

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Highlights

1. The purpose of the project was to continue the road rehabilitation and maintenance program begun under the First Highway Project. The project provided for the purchase of equipment, spare parts, supplies and materials, workshop construction, and technical assistance required for implementation of the rehabilitation and maintenance program; extension of the Ministry of Public Work's (MTP) soils laboratory; and feasibility study and detailed engineering for the Conakry-Mamou road (paras. 2.08 and 2.09).

2. Since the First Highway Project had been completed successfully, no serious implementation problems were foreseen with the Second Project (para. 6.01). However, with a change of Minister and of project organization at the beginning of the project, the performance of the project began to deteriorate (para. 4.08). Outputs declined because equipment and other materials funded by the project were used for non-project activities, including construction of airfields, maintenance of city streets and improvement of non-project roads of lower economic priority (paras. 3.03 to 3.05). The Association did not realize the full extent of equipment diversion until mid-1981. Action was taken by the Guinean Government to rectify the situation in February 1982. Gradually project performance improved, with the rehabilitation brigades meeting their targets from April 1982 to December 1983 (a reduced program of works is being carried out in the interim period up to effectiveness of the Third Highway Project expected in August 1984) (para. 3.06).

3. About 975 km of earth roads were rehabilitated by the end of the project in December 1983, compared to an appraisal target of 1548 km (63%). In addition, spot regravelling and other maintenance had been carried out on 1680 km of unpaved roads and an additional 740 km had been graded once. This compares to an original project target for maintenance of 3459 km of unpaved roads on which very little cantonnage took place. There was no resurfacing of paved roads, although 300 km had been included at appraisal. In addition, 1141 km of paved roads were to be maintained under the project, but the only maintenance carried out was 180 km of patching (para. 5.01).

4. The following points are of particular interest:

- (a) the reversal from successful project implementation under the First Highway Project to very poor under the Second Highway Project implementation with a change in project organization and leadership (paras. 3.04, 4.08);

- (b) the consultant's role in keeping the Association unaware of serious problems with the project (para. 4.04);
- (c) the impact of the Association on reversing the trend of the project and greatly improving productivity (para. 6.02);
- (d) the measures that can be taken to avoid a repetition of the problems encountered under the project (paras. 4.10, 6.04);
- (e) continuing problems with the establishment of a resurfacing unit and poor quality of patching, as had occurred under the First Highway Project (paras. 3.06-3.07, 6.03); and
- (f) Government's difficulties with meeting local and foreign exchange contributions to project costs (paras. 3.23-24).

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I. INTRODUCTION

1.01 In 1975, the Bank Group financed the first road rehabilitation and maintenance project in Guinea, following years of neglect of maintenance of the classified highway network. It took five years for the Government to be convinced that road maintenance was the highest priority in the highway sub-sector, for throughout the 1960s efforts had been directed to development of the mining sector and related transport infrastructure. The project was the first Bank Group transport operation in Guinea which was not related to mining. In view of this background, the project was remarkably successful - 930 km of gravel roads were rehabilitated, 300 km were graded, and 900 km of paved roads were patched. Not all of the project targets were met, the most serious being the failure to resurface any of the 405 km of paved roads originally included in the project. The Second Highway Project was meant to continue rehabilitation work carried out under the First Project and further develop road maintenance capability throughout the country.

1.02 During the First Highway Project a maintenance unit was established within the Ministry of Public works (MTP) and a consultant technical assistance team developed local technical and managerial skills. Output of the rehabilitation and maintenance brigades was excellent until the last year of the project, although the quality of works carried out varied considerably. Problems which subsequently became major obstacles to project implementation during the Second Highway Project were the lack of economic or physical planning, failure to keep accounting records, and the primacy of non-project considerations. In addition, the diversion of equipment to non-project uses during the last year of the First Project became a major problem during the Second Project, although this could not be foreseen, since the Second Project was appraised before the Association became aware of this issue.

II. PROJECT PREPARATION AND APPRAISAL

Preparation

2.01 As soon as the First Highway Project was under way the Association consulted with the Government concerning the preparation of a second phase of the maintenance program. The initial project brief in 1977 identified a large

rehabilitation and maintenance program, as well as the reconstruction of the Mamou-Labe road, for a total cost of US\$52 million. By 1978, the project scope had been limited to extension of the maintenance program and preinvestment studies for the reconstruction of the Conakry-Mamou road. The latter was seen as a means of studying the rail/road intermodal issue in the Conakry-Mamou corridor, rather than initiating a full-scale transport planning exercise for the entire country.

2.02 By early 1978, Government had proposed the rehabilitation of 2500 km of roads, but was subsequently convinced by the Association that not all of the roads were economically justified. Economic analysis of a rehabilitation and maintenance program was carried out by the consultants engaged under the First Highway Project: by mid-1978 they had identified 1626 km of high priority gravel/earth roads for rehabilitation and 4622 km of paved and unpaved roads for routine maintenance. The project was also to include the rehabilitation of MTP's soils laboratory to support the road rehabilitation program and feasibility studies financed under the project.

Appraisal and Negotiations

2.03 The project was appraised in September 1978. The total length of roads to be rehabilitated was slightly reduced from 1626 km to 1548 km and roads to be maintained from 4622 km to 4581 km. The total cost of the project was estimated at US\$26.8 million, with a foreign cost of US\$21.5 million, of which the Association intended to fund US\$11.0 million and the EEC Special Action Fund US\$4.0 million. At Appraisal there was still a US\$6.5 million financing gap, although the Saudi and Kuwait Funds and BADEA had expressed interest in the project. Finally, in March 1979, BADEA agreed to participate in the project with a loan of US\$6.0 million. By negotiations in July 1979, project costs had increased to US\$28.7 million because of increases in the price of gasoline; however, total foreign costs remained at US\$21.6 million (75% of total costs) due to an original over-estimation of the foreign exchange component of the cost of gasoline. As a result of this revision to the cost estimates, there was no financing gap for the foreign exchange costs. During negotiations, however, the Government requested 80% external financing, which would be more in line with the 85% average cost sharing arrangements for other projects. The Association agreed to increase the Credit amount from US\$11.0 to US\$13.0 in view of the country's low per capita GNP and heavy debt service requirements, bringing the level of external financing to 80% of total project costs.

2.04 To encourage the allocation of foreign exchange for recurrent road maintenance costs, the Association insisted that the Government finance US\$0.5 million of the US\$1.5 million incremental foreign exchange costs of the project. The remaining US\$1.0 million (and US\$1.7 million local costs) were financed by the Association on a declining basis. The Association was also anxious that Government should gradually assume responsibility for the renewal of maintenance equipment and for spare parts. Therefore, the Government agreed to allocate about US\$1.5 million annually in foreign exchange, beginning in the third year of the project. The length of time required to

obtain import licences and the country's scarcity of foreign exchange necessitated the creation of a special foreign exchange account with simplified procedures for access to funds, as had been done under two other IDA projects in Guinea. The establishment of such an account was made a condition of disbursement for the second tranche of equipment to be procured in 1981 to replace equipment financed under the First Highway Project.

2.05 The appraisal mission considered that since local currency requirements under the First Project had been adequately funded, no local currency revolving fund was required for the Second Project. However, the newly appointed Minister of Public Works expressed concern during a prenegotiation mission over the problems with timely provision of budgeted funds. Therefore, the Green Cover SAR included an additional requirement for the establishment of a local currency revolving fund of GSy 20 million to pay local currency expenditures; this was ultimately made a condition of effectiveness.

2.06 The use of labor-intensive methods was considered at appraisal, but equipment-intensive methods were selected because:

- rural areas were sparsely populated with concentration of population in larger settlements;
- the legally prescribed civil service wage levels were low and not competitive with alternative income-earning opportunities;
- equipment utilisation and output with equipment-intensive methods were satisfactory under the First Project.

Labor-intensive methods were, however, to be employed for routine maintenance activities (cantonnage). Assistance to the domestic construction industry was also considered, but was not included in the project because of lack of Government interest and of any organized private construction sector.

2.07 Negotiations were scheduled for the end of April 1979, but the Guinean delegation was unable to attend because of a tense political situation in the country. Negotiations finally took place during the last week of July 1979. The Government requested that the amount of technical assistance be reduced from 243 to 215 man-months, since it felt that there were enough Guineans trained under the First Highway Project to make up for the reduction. The Association agreed to the reduction with the proviso that the remaining funds be kept for possible short-term consultancies. The project was approved by the Board on September 19, 1979.

Project Objectives and Description

2.08 The objective of the project was to continue and virtually complete the rehabilitation of high priority primary and secondary roads,

extend and reinforce road maintenance of this network, and improve the sectoral planning and execution capacity of MTP.

2.09 The project consisted of a three year program of road maintenance and rehabilitation - 1548 km of rehabilitation (listed in Table 3.2) and 4622 km of maintenance and rehabilitation. The latter included all the paved road network, 300 km of which were to be resurfaced with extensive repairs to the base course. The project included the following components:

- (a) provision of (i) highway equipment and spare parts, (ii) construction of workshops and offices, (iii) operating costs for road rehabilitation and maintenance, and (iv) technical assistance to implement the road rehabilitation and maintenance program and train mechanics and equipment operators;
- (b) renovation of the soils laboratory, plus provision of laboratory equipment, technical assistance for training of laboratory technicians and fellowships;
- (c) feasibility study and detailed engineering for the reconstruction of some sections of the Conakry-Mamou road (250 km) which would include training of Guinean engineers and economists to strengthen preinvestment studies capability within MTP.

III. PROJECT IMPLEMENTATION AND COST

Credit Effectiveness

3.01 There were two conditions of effectiveness - (i) cross-effectiveness with the BADEA loan, and (ii) establishment of a syli revolving fund and initial payment of GSy 20.0 million into it by the Government. The date of effectiveness was set for January 31, 1980, by which time all conditions were met.

Project Start-up

3.02 Late in 1979, the Association agreed to change the project composition from five regravelling brigades to four heavy brigades, following the success under the First Project with the two heavy brigades. This involved some modifications to the list of equipment to be procured. The project began in April 1980 (three months later than scheduled), when funds under the First Project were finally exhausted. Since there were insufficient funds to complete the road maintenance program under the First Project, the standard was lowered to spot regravelling and other maintenance activities which were carried out on about 150 km of the highest priority roads at the beginning of the Second Project, for a total cost of about US\$1.0 million.

Although work on these roads was completed in June 1980, the full start of the Second Project still did not occur until January 1981, because of delays in delivery of equipment. Four brigades started to carry out rehabilitation work at the beginning of the dry season in September 1980 with existing equipment, but the quality of work by three of the brigades was so poor that it had to be redone in January 1981. This was not only because the brigades did not have sufficient equipment, but also because of inadequate staffing and lack of discipline. The quality of patching works was also poor, as had been the case under the First Project. Very little cantonnage had begun by the beginning of 1981 and resurfacing of paved roads had not started because the gravel plant and resurfacing equipment had been used on non-project city streets and airfields in Faranah, Conakry and Labe.

Rehabilitation and Maintenance Program

3.03 During 1981, Association missions were led to believe that project start-up problems and a lack of discipline in following the agreed work program were the only reasons why project output was low. In June 1981, following field visits by a supervision mission and the release by Government of - extensively edited - consultants' progress reports for 1980 and the first half of 1981, the Association realized that the situation was far worse than previously thought. Thorough investigations of the project were carried out by a November 1981 supervision mission, then by a mission sent out to appraise the Third Highway Project in February 1982. As a result of the mission's findings, the appraisal was postponed. The February 1982 mission established that:

- the four heavy brigades had only rehabilitated 178 km of unpaved roads out of a target of 1032 km (later estimates reduced this figure to 163 km);
- the three light maintenance brigades and one grading unit had only maintained about 990 km of unpaved roads compared with a target of nearly 3000 km;
- very little and very poor quality patching had been carried out by four units; and
- there had been no paved road resurfacing and cantonnage.

Meanwhile, with less than 15% of the work program carried out, over 60% of the project budget had been spent. The main reason for this poor performance was diversion of equipment and crews to non-project uses, aggravated by shortages of fuel and spare parts, and lack of local funds.

3.04 The March 1982 supervision report sums up the project situation at the end of 1981: "The project appears double faced: the official one for the Bank, with equipment assigned to the brigades, written official instructions prepared by the consultants and signed by the Minister; and the unofficial one, with verbal instructions or handwritten notes given by the

Minister or his staff during field trips, handwritten reports by the brigades heads, all deliberately kept as secret as possible from the Bank's missions and, to a lesser extent, the consultants". The mission confirmed that fuel and equipment had been diverted from routine maintenance brigades for emergency pothole filling of a politically important road, regravelling brigades had been diverted to work on airfields or non-programmed roads, that many pieces of equipment cited as 'under repair' were in fact assigned to non-project related works (particularly repair of city streets), and that equipment had been moved around to an excessive extent before and after supervision missions, resulting in many breakdowns.

3.05 At the end of the mission, Association staff met with the President and other ministers and explained that appraisal of the Third Highway Project could not proceed in view of the poor performance of the Second Project. The mission insisted that regular detailed reports be submitted to the Association and tied in receipt of such reports with project disbursements (para. 3.22). The mission also recommended that within the new Ministry of Infrastructure and Major Works (MIGAT) that was to replace MTP, a strong central unit should be established and put in charge of all mechanized rehabilitation and maintenance brigades. The professional staff, including the consultants, should be made responsible and accountable for the brigades' activities. In addition, management and administrative controls should be put into practice, given the current situation of very few financial controls and either poor or no record-keeping of project activities.

3.06 Shortly after the mission left, the Minister of Public Works and other professional staff were replaced. Under the new Minister, equipment diversion on a lesser scale first continued, but as information started to flow more easily and quickly, telexes sent by the Association to the Prime Minister and other ministers resulted in pressure on the new Minister to give more support to the project. Many of the mission's recommendations were adopted, particularly the centralization of control of the mechanized brigades in the hands of the consultants and their counterparts. Project performance gradually improved throughout 1982 and 1983. By late 1983, most of the diverted equipment had been returned to the units, with the exception of some US\$0.4 million of equipment mostly intended for the resurfacing unit. Fuel continued to be diverted from the rehabilitation units, although in diminishing amounts: MIGAT used some of this fuel for street maintenance in Conakry. There was probably also small pilferage by brigade staff, but this was difficult to control in a country where fuel has been very scarce and where the blackmarket price of two litres of fuel has been equal to a day's wages for most of those working on the project: in practice pilferage of fuel has worked as a non cash incentive for field staff. Also, part-payment of project staff in foodstuffs (grain, vegetable oils, etc.) provided through the World Food Program was an important element in motivating personnel to come close to projected outputs in difficult conditions.

3.07 By linking appraisal of the Third Highway Project with accomplishment of output targets for the Second Project, the Association was able to put pressure on the Government to greatly improve output until the end

of the project. December 1983 is taken as the end of the project, although US\$0.4 remained in the BADEA loan for financing of equipment (para. 3.17). The targeted output of 813 km from April 1982 to December 1983 has been met - this compares to the 163 km rehabilitated from April 1980 to March 1982. Output was particularly good during the latter part of 1983. By end-1983, a total of 975 km of roads has been rehabilitated, compared to the original project target of 1548 km (63%). About 1680 km of unpaved roads had received routine maintenance by the light mechanized brigades, and an additional 740 km had been graded once^{1/}. Therefore, 2420 km of unpaved roads had received some maintenance compared with the project target of 3459 km (70%). On the 1141 km of paved roads, there was no resurfacing and only 180 km were patched, but much of the patching failed because of poor quality work and the poor condition of the roads. In addition, very little cantonnage was carried out.

3.08 Besides diversion of equipment there were several other obstacles to project implementation. One was the shortage of fuel throughout 1981. This was the result of a scarcity of fuel in the country as a whole, partly because ONAH, the Government-owned agency which had the monopoly for importing petroleum products, was continually late in its payment to suppliers. Consequently, the Association suggested that the project procure fuel directly. A bid was awarded to a company that was also meant to supply ONAH with a much larger quantity of fuel, but the company eventually lost the ONAH contract to a lower bidder. In the end, a project contract was signed with ONAH and the Government agreed to exempt the fuel from tax, so that the Association financed 100% of the foreign cost and the General Directorate of Planning the 5% of local overhead costs. This overcame the problem of insufficient local funds being made available in the revolving fund for the purchase of fuel.

3.09 A shortage of spare parts was another problem encountered during the project. Government delayed ordering spare parts at the beginning of the project; also the procurement of small but essential spares under the Credit was found to be a time-consuming process. Therefore, the Credit Agreement was amended in February 1981 to allow direct procurement of spare parts and materials up to a total amount of US\$150,000. Throughout 1980-81 and at various times during 1982-83, spares were in short supply because of slow and inefficient procurement procedures and use for non-project equipment. The arrival of a consultant mechanical engineer in May 1981 somewhat improved the situation, as he was able to draw up the list of needed spares and prepare bidding documents. To improve poor maintenance of equipment, an additional expatriate senior mechanic was hired to assist with equipment maintenance in the Ministry's workshops.

3.10 When the Association reviewed project accounts in late-1981 and early-1982, it found that there was no effective accounting system and that no records were kept for many items purchased. Therefore, a firm of accounting consultants was hired under the project to review past expenditures and design

1/ Total grading amounted to 1600 km at end-1983, but some roads which had been maintained by the light brigades were also graded by the grader units.

a new accounting system. The major findings of the consultants' study were that (i) there was no provision in the control system for systematic verification of receipt of goods and services, (ii) proper auditing was impossible because of inadequate documentation, and (iii) local accounting staff were unaware of the purpose of control procedures. Accounting improved greatly when a project accountant joined the consultant team in 1982, and throughout 1983 effective accounting systems have been gradually instituted.

3.11 Provision was made in the project for construction of a new building for the Department of Roads and Bridges (DGPC), but this was not required since more offices became available in the existing MTP building due to the departure of another Ministry. The Association agreed to finance the renovation of the building, but because of lack of local funds, only DGPC's workshop in Conakry was renovated in the end. Another workshop was to be built in Labe, but instead one was set up in an existing building. No new workshop construction, therefore, was required. Workshop equipment was installed by both contractor and force account.

3.12 Overall, road maintenance has improved significantly since mid-1982, although not without continued pressure from the Association. At no time has output been as high as in the best year of the First Highway Project (185 km per heavy brigade). Brigade performance has not been consistent: in 1983, the brigade with the lowest output was producing one half of the output of the best brigade (Table 3.3). There have been considerable staffing problems, with high absenteeism in some brigades and no sanctions for indiscipline. Management of the brigades has been found to be a serious problem; therefore, under the proposed Third Highway Project additional consulting services are included to strengthen the management of brigades. By the end of the project, four heavy and three light brigades were operational, plus two patching and two grading brigades. This compares with an appraisal target of five regravelling brigades (changed to four heavy brigades, three patching brigades plus one resurfacing and one surface treatment brigade).

Soils Laboratory

3.13 Bids received in September 1980 for extension of the soils laboratory were far higher than those estimated at appraisal. Therefore, the Government rejected all of the bids and negotiated with a Spanish contractor already working in Guinea to carry out the work at a lower cost of GSy 5.8 million (still nearly 50% higher than estimated). The contractor was continually behind schedule and eventually defaulted. After a prolonged time, another contractor (a joint-venture (Guinea-France) construction company) was awarded the contract in mid-1983 after limited international tendering procedures. The laboratory was finally completed at the end of 1983. Some laboratory equipment was delivered in 1980, allowing it to be used in the Conakry-Mamou feasibility study: less equipment than planned was purchased because of delays in completing the building. A joint venture between the project consultants and a French laboratory was awarded the contract for training of technicians for the soils laboratory in August 1980: short fellowships were also given to some laboratory technicians. Soil tests for

the Conakry-Mamou feasibility study were carried out and all the paved roads and material resources were surveyed as part of preparation of the Third Highway Project.

Conakry-Mamou Road Feasibility Study

3.14 At the beginning of the project, the Government sought to include in the feasibility study the segment of the road from the Presidential Palace in Conakry to the previously designated origin on the outskirts of Conakry. However, the Association did not agree and the study remained as planned. The consulting contract was awarded to a French company in 1980 and the first phase of the study was completed by mid-1981. A number of the economic assumptions in the study over-estimated future economic growth and thus related traffic growth, but these projections were subsequently lowered following the Association's recommendations. The Association's projections of lower economic growth have so far been supported by the country's disappointing economic performance. The consultants examined several alternative levels of rehabilitation, and finally recommended 58 km of minor realignments and 88 km of major realignments. Detailed engineering and draft bidding documents were completed by March 1982. Because of financial limitations, the proposed Third Highway Project includes the least cost alternative of selective strengthening over 245 km of roads and spot geometric improvements on 10 km.

Training

3.15 The project continued the program for training of mechanics by the Public Works Training Center established under the First Highway Project: altogether, about 20 mechanics were trained. In addition, brigade chiefs and operators received on-the-job training. Twenty-three staff from DGPC and the soils laboratory received short training courses abroad, amounting to 62 man-months. Training of mechanics has had a very limited impact partly because of the low education level of trainees and poor quality of training. No training program was defined at the beginning of the project and no training specialists were included, apart from a mechanical engineer. The proposed Third Highway Project, however, includes more detailed training programs and provision of 30 man-months of technical assistance.

Procurement

3.16 IDA and EEC-financed project components. During the first year of the project several small procurement problems were resolved. The Credit Agreement was also amended to allow the direct procurement of spares (para. 3.09) and change in disbursements for direct procurement of fuel (para. 3.08). After analysis of project accounts in November 1981, the Association found that direct procurement of spare parts had exceeded the ceiling stipulated in the Credit Agreement by 90%. The Association had also disbursed at the official exchange rate (about six times higher than the black market rate) when many of the spares had been purchased in the black market. In addition, an estimated US\$135,000 of project funds were used for direct

procurements not approved by the Association and/or for items not included in the project. In light of Guinea's chronic shortage of foreign exchange and the Government's efforts to improve the project, the Association decided in mid-1982 not to seek reimbursement on possible past over-payments (para. 3.22), but reduced the disbursement percentage on GSy expenditures from 95% to 15% then to 1% in April 1983.

3.17 BADEA-financed project components. There were several procurement problems with the BADEA loan, especially concerning the qualification of companies to bid for BADEA-financed project components. The first concerned the purchase of cement, which was originally meant to have been purchased through the Government-owned agency, Batiport. However, the Government went out to tender because Batiport was unable to meet the project's needs. After letting the contract, BADEA found that the company selected was on their boycott list and refused to reimburse the Government for 600 tons of cement already delivered. It appears that this problem was subsequently resolved and Government was finally reimbursed. A similar problem occurred with the purchase of trucks in 1982, for the lowest evaluated bidder (France) was also blacklisted by BADEA. Consequently, the Government had to renegotiate a contract with the second lowest bidder (France) after the bid validity period had expired. This resulted in a 55% higher cost than the lowest evaluated bid, although this was partly because the type of trucks purchased was different. There were other minor procurement problems and many delays in approving contracts.

Reporting

3.18 Project progress reports for April 1980-June 1981 were not released by the Government until mid-1981. The reports were not very detailed and left many questions unanswered. Little information was given on the costs of each brigade or the consumption of fuel, spare parts, etc. It is not surprising that the reports were not more precise considering the poor state of the accounts during the first part of the project. Progress reports improved considerably after the Association requested full details of all project activities on a monthly basis, instead of quarterly as before.

Project Costs

3.19 As of the end of January 1984, project costs totalled US\$28.75 million. Total project costs are expected to be about US\$29.47 million, compared with US\$28.73 estimated at appraisal. However, total output was lower than projected and about US\$4.0 million would be needed to complete the rehabilitation program alone, based on 1983 output and costs. The cost of highway equipment and spare parts was underestimated by about US\$2.5 million because of increases in unit prices, changes in the amount of equipment purchased at the beginning of the project, higher than estimated amounts of equipment renewal, and higher than estimated spare parts requirements. Technical assistance costs were 69% higher than projected (US\$2.12 million), mainly because of the prolonged project period and additional staff required. By end-1983, there had been about 350 man-months of technical

assistance compared to the 243 projected. Higher unit costs also accounted for about one-third of the increased costs. The cost of expanding the soils laboratory was also higher than estimated (estimated to be 78% higher by the time of completion) because of the default of the first contractor and 50% increase in the price of the contract. All other project component costs were lower - there was less technical assistance and less equipment purchased for the soils laboratory, the cost of the feasibility study was lower than estimated, and the workshop at Labe and DGPC offices were not constructed. Operating costs were 25% lower than estimated because of less than projected output (para. 3.07). Rehabilitation costs per km varied from US\$9200 to US\$15100 in 1983 (including 60% of equipment and all technical assistance costs).

3.20 Devaluation of EEC currencies against the dollar resulted in a nominal loss of about US\$0.36 million from the EEC Credit which was denominated in EEC currencies. Project costs for the first part of the project are not as reliable as for the second part, because of the poor state of the accounting system from 1980 to mid-1982. Also, the extent to which expenditures were for non-project uses is not altogether clear during that period. Lastly, project expenditures in sylis overstate the cost of locally procured goods and services because of the overvalued exchange rate. This is especially the case, for example, for the spare parts purchased at syli prices which reflected the market exchange rate rather than the official rate (para. 3.16).

Disbursements

3.21 By the end of 1981, nearly two years after the project began, only 48% of the credit proceeds had been disbursed. This situation arose because full start-up of the project did not begin until January 1981, due to delays in the delivery of equipment. In addition, Government was slow in procuring spare parts. About 75% of the EEC Credit had been disbursed, compared to only 50% of the BADEA loan by end-1981. BADEA's slow procurement procedures and related problems (para. 3.17) were the main reasons for the delay. In September 1982, BADEA suspended disbursements without consulting the Association because Guinea was behind in its interest payments, but disbursements resumed by the end of the year after Government made the necessary payments. As of end-January 1984, 87% of the IDA Credit, all of the EEC Credit, and 83% of the BADEA Loan had been disbursed. Final disbursements are expected to be made by September 30, 1984.

3.22 After the full extent of project equipment diversion was revealed in early 1982, the Association seriously considered suspending disbursements. The Association decided, however, to make disbursements conditional on (i) issuance of progress reports (because Government had not released consultants' progress reports during the first half of the project), and (ii) improved output from the brigades and reconciliation of outputs with brigade expenditures. The Government had considerable difficulties prefinancing the externally financed portion of the project, given its continual budgetary and foreign exchange constraints. Therefore, the

Association has suggested that under the proposed Third Highway Project, the Association will make an initial deposit of US\$0.530 million into the Revolving Fund with replenishment upon receipt of certified statements of expenditure and Government replenishment of syli drawings.

Financing

3.23 Table 3.5 shows the external financing of the project. While the overall amounts remained the same, financing of individual project components changed considerably because of increases in equipment/spare parts expenditures and consultant services, and decrease in brigade operating costs. In addition, less equipment than envisaged was financed by EEC because some of the lowest bids came from Brazilian manufacturers which were not eligible for EEC financing. Cost overruns were financed by Government. At appraisal, the Government agreed to provide US\$1.5 million in foreign exchange for the renewal of maintenance equipment in 1983, but to date these funds have not been allocated by Government (para. 4.02).

3.24 At the end of 1982, there was still about US\$0.4 million of uncommitted BADEA funds. The Association suggested that this be reallocated to the purchase of badly needed spare parts and technical assistance, so as to enable the project to continue until the Third Highway Project could begin. The Association thought that these recommendations had been agreed by BADEA, but at the beginning of 1983, BADEA insisted that the funds be kept for equipment or cancelled and that the financing of its 33% share of technical assistance costs would cease by March 1983. As a result, the project had to be reduced to the bare minimum during the last few months, until a PPF could be approved to bridge the gap between the Second and Third Highway Projects. The remaining BADEA funds have now been committed for the purchase of additional trucks.

IV. INSTITUTIONAL PERFORMANCE AND DEVELOPMENT

Covenants and Borrower's Performance

4.01 Details of covenants contained in the IDA and EEC Credit Agreements and Government's compliance with them are given in Annex 1. The covenant requiring the establishment of the Syli Revolving Fund was met (Section 3.01 (b-d)), but Government was often slow to provide sufficient funds for the fund, which meant that payments to suppliers were often delayed. One of the main violations of the Credit Agreements was the use of project equipment and funds for non-project activities (Section 3.03 (b)), although this has now been substantially curbed (para. 3.06). In addition, during the first half of the project, adequate records were not kept of project activities and IDA was not given adequate information on project implementation (e.g. reports prepared by consultants were held back for long periods and passed on to the Bank in severely edited versions (Section 3.04 (b) and 4.01 (a))). The accounting system was such that audits of project

accounts (Section 4.02) were not possible until the second part of the project.

4.02 The covenant requiring an annual provision of US\$3.2 million (in 1979 prices) for recurrent road maintenance operating expenses in 1983 (Section 4.03 (b)) has not been met. However, the Government is now meeting all the local costs of the rehabilitation and maintenance program, although this does not amount to US\$3.2 million because of the reduced size of the program. A condition of disbursement for the second tranche of equipment procured in 1982-83 was the opening of a special foreign exchange account (Schedule 1, 4(b)) into which the Government was to put US\$1.5 million required for renewal of equipment (Section 4.03 (c)). The fund was set up but funding has not been provided by Government; hence, the provision of US\$1.0 million for equipment renewal and US\$0.5 million for spare parts and fuel during the transition period between the Second and Third Highway Project was a condition of Board presentation for the Third Highway Project.

Consultants Performance

4.03 USA/Belgian consultants employed under the First Highway Project were retained for the Second Project. Supervision missions had noted a deterioration in their performance at the end of the First Project and this continued into the Second Project. They had phased out of daily project execution and did not appear to be carrying out sufficient field inspections: the Association also found their work on accounting procedures to be unsatisfactory. The Government agreed to employ a short-term consultant to help reactivate the cost accounting system set up under the First Highway Project and set up internal controls.

4.04 When the full magnitude of equipment diversion became apparent at the beginning of 1982, supervision missions considered that the consultants' mission chief had, at best, played a passive role, and, by not contradicting information given to the missions, supported the practice of 'staging' for the missions. In view of the passive complicity of the consultants' mission chief, the Association requested that he be replaced and a replacement was found in mid-1982. Admittedly, the consultant is in a delicate situation when he is told by the Government not to inform the Association of certain details, because he is directly responsible to the Government and not to the Association. However, a consultant has to distinguish between his responsibility to a particular representative of the Government, i.e. the Minister of Public Works, and to the Government and people of Guinea as a whole. The consultant also has to consider what is the most appropriate action from a professional point of view.

4.05 During the suspended appraisal mission in February 1982, the Association recommended that instead of consultants taking only an advisory role, they should be made jointly responsible for project implementation. Consequently, DGPC, the consultants and the Association agreed on new terms of reference for each member of the consultant team. Thereafter, the consultants were given more responsibility along with their counterparts, although not

without some initial resistance from the new Minister. Their involvement has helped to improve the output of the brigades and improve the whole administration and accounting of the project. Undoubtedly, the consultants have had to work in a very difficult situation, both from the point of view of lack of clear definition of their role within MIGAT, lack of accountability of Guinean staff, and the difficult physical conditions in the field.

4.06 The original team of consultants included two highway engineers, two bridge engineers, one mechanical engineer and three mechanics. By the end of the project, additional services had been provided by one financial analyst, one accountant, a mechanical training specialist, and an additional mechanic. By the end of the project there had been 350 man-months of technical assistance compared to the 243 envisaged at appraisal. Significantly, most of the above consulting expertise will still be required in the proposed Third Highway Project for the road rehabilitation and maintenance component.

4.07 The consultant jointly with a French laboratory were selected for assistance to MTP's soils laboratory. As the building has still not been completed, some of the consultant services were curtailed. A French consultant was selected to carry out the feasibility study for the Conakry-Mamou road, which was completed by March 1982. Both consultants performed satisfactorily.

Institutional Performance

4.08 MTP has divisions in each of the seven provinces which in turn have 33 subdivisions whose responsibilities included the routine maintenance of roads: the divisions were directly responsible to the Minister of Public Works. DGPC had overall responsibility for the administration, engineering, construction and maintenance of the national road system. Under the First Highway Project, the road rehabilitation and maintenance program was set up as a separate unit with its own budget and staff within DGPC. An objective of the Second Highway Project was to integrate the unit into DGPC's Directorate of Road Maintenance and Equipment which would be responsible for all of road rehabilitation and maintenance operations: day-to-day maintenance was to be carried out by the subdivisions. The separate project unit, under the First Highway Project, had functioned well, largely because of the autonomy of the project unit and the Minister's commitment to the project. However, at the beginning of the Second Project a new Minister with less commitment was appointed and he used the centralized decision-making system to divert project equipment and materials, with project staffs' orders overruled by verbal orders from the Minister. The deterioration of the project during the first two years indicates the extent to which there were fundamental institutional problems - gross interference from above which could not be prevented by institutional means and a complete absence of control systems to monitor the use of resources. The problem was compounded by the attempt to integrate the project unit into the rest of the Ministry, resulting in a diffusion of control of the project and confusion over the role of different departments.

4.09 In response to the deteriorating situation and to pressures from the regional authorities, the President reorganized MTP into a new Ministry of Infrastructure, MIGAT, in 1982. About one half of MTP's personnel were assigned to MIGAT, while many of the other staff were transferred to the CGRs (now Provinces). The role of the provincial subdivisions in road maintenance was to be increased, but the Association convinced the Government that they did not have sufficient expertise to handle mechanized brigades. The responsibilities for routine maintenance have been allocated to the CGRs which will handle labor-based routine maintenance operations and only minor equipment-based operations, in line with the Association's recommendations. Meanwhile, the performance of the mechanized brigades has improved under MIGAT, although performance has not been consistent (para. 3.12). Problems encountered in the First Highway Project continued to plague the Second Project: (a) emphasis on quantity rather than quality, (b) delayed repair works in large part due to lack of spare parts which resulted from delays in procuring spares, and (c) administrative delays in purchasing fuel and materials, paying wages and bonuses, and processing disbursement requests to the Association and BADEA.

4.10 To overcome the problems of diversion of equipment and materials, low wages, and cumbersome civil service administrative procedures, Government has set up an autonomous Road Project Office (OPR) under the Third Highway Project. This will be supervised by a Road Project Management Council comprised of representatives of several ministries with the Secretary of State for MIGAT as Chairman. The present twelve force account brigades will be integrated into a Division of Works within the OPR and will be managed with technical assistance from an experienced international contracting company. OPR will operate independently from the Ministry's administration, with particular discretion to hire and fire personnel and set wage levels and to procure materials and spare parts.

V. ECONOMIC REEVALUATION

5.01 The rehabilitation and maintenance program was smaller than the program evaluated at appraisal, as shown in the table below:

	<u>Appraisal</u>	<u>Actual</u>
Resealing of paved roads	300	0
Rehabilitation of earth roads	1548	975
Maintenance of unpaved roads	3459	2421
Maintenance of paved roads	1141	179

Traffic levels in 1980/81 were different than projected at appraisal for six of the roads rehabilitated, but averaged out to the same level for the rehabilitation program as a whole. However, the appraisal projected a 5% annual traffic growth, but the economic reevaluation projects 3.5% in line with Third Highway Project appraisal assumptions, in view of the sluggish growth of the Guinean economy.

5.02 The economic reevaluation is complicated by: (a) an unknown amount of project goods and services being used on non-project related activities, especially during the first two years, (b) uncertain expenditures for the first half of the project because of poor cost accounting, and (c) lack of data on the costs of each brigade during the first half of the project. Therefore, actual costs could not be allocated between the rehabilitation program and various maintenance activities until 1983: these costs are probably not representative of the project because it is the only year in which the project was performing well. Consequently, estimates of rehabilitation costs made by the Consultants in 1980 for the Third Highway Project have been used in the economic reevaluation, with an allowance for the extra cost incurred because of the lower efficiency of the Second Project. These costs do not include the cost of non-project related works. The estimated cost of US\$13500 per km (in 1980 prices) is consistent with the US\$11000 per km cost during the Second Highway Project, updated to 1980 prices and with an allowance for the lower efficiency of the Second Project. Just over half of the estimated cost is comprised of the actual cost of equipment assigned to the rehabilitation brigades and technical assistance costs. A very low rehabilitation cost of US\$4500 per km was used at appraisal. All costs are in economic prices with a shadow exchange rate of GSy 40 to one dollar.

5.03 A separate evaluation has not been carried out for the maintenance program because the costs are unknown. However, when evaluating the total cost of the project, the benefits of the maintenance program are included. The total costs of the project will include those for all non-project related activities (exact amount not known), but no estimate of the benefits of these activities have been made.

5.04 Vehicle operating cost estimates are higher than those used at appraisal, as shown in Table 5.1. The new estimates are based on the findings of the HDM model which was used in 1980 as part of the preparation for the Third Highway Project. Overall, estimates are about twice as high as those at appraisal. At appraisal, the assumption was that the roads would be adequately maintained after rehabilitation and initial maintenance. However, since routine maintenance of the road network has not been successfully developed under the Second Highway Project, a lower standard of maintenance has been assumed (in line with Third Highway Project assumptions in the without project case). The rehabilitated roads are assumed to revert from good to fair condition three years after completion: roads receiving maintenance under the project are assumed to deteriorate to mid-way between good and fair condition after three years. Patching of paved roads is considered to have had minimal impact because of the initial poor condition of the roads and poor quality of patching work.

5.05 The reevaluated rates of return for the roads rehabilitated are given in Table 5.2. The overall rate of return for the rehabilitation program was 18%. One road had a negative rate of return because of a low traffic level of 15 vpd: other roads ranged from 5% to 32%. This compares with a

range of 7% to 25% estimated at appraisal. Agricultural benefits included in the economic evaluation at appraisal for one package of roads have not been included in the reevaluation. The overall rate of return for the project is 25%, compared to 49% estimated at appraisal, including the benefits of the maintenance program. However, this does not include the benefits of expenditures on non-project activities.

VI. THE ROLE OF THE ASSOCIATION

6.01 The Association had little reason to suspect that major problems would develop during the project, given the success of the previous one. In addition, appraisal of the Second Project was well under way before First Project performance began to deteriorate. What had been underestimated was (i) the degree to which the success of the First Project had been due to the commitment of one key individual - the former Minister of Public Works - since progress with developing a road maintenance capacity within DGPC began to falter with the succession of a new Minister, and (ii) the impact of the change from a separate project unit to integration of the project in Ministry operations and the withdrawal of the consultants from day-to-day supervision of the project. This was a case of over-ambitious institution building and the subsequent difficulties of monitoring and controlling equipment and materials during the first two years of the project helped to make diversion of such equipment that much easier.

6.02 The Association should have been more firm in insisting on the release of the progress reports for the project, rather than waiting for almost a year. In addition, it should have requested the consultant's head office for a review of the project, so as to get a more objective view of the situation. However, since the Association had no cause to be seriously alarmed about project progress, pressure was not applied. When the Association finally found out the extent of equipment diversion and other problems, firm action was taken. Acting upon the Association's recommendations, the Government put the consultants back in control of the project after the mission chief had been replaced, and detailed reports of project expenditures and output were submitted on a monthly basis. The difference in project implementation before and after mid-1982 is quite remarkable and indicates the considerable impact the Association can have on project implementation in Guinea.

6.03 The question arises of whether the Association was too lenient with the Government over the diversion of project equipment during the first two years of the project, for the situation was serious enough to warrant suspension of disbursements. However, the Association had to take into consideration what would happen to the roads already rehabilitated during the First and Second Highway Projects, and also the not inconsiderable expertise and momentum that had been built up within DGPC over the past five years. The need for the development of a periodic and routine maintenance capability was even more critical, if the benefits of the rehabilitation program were going

to be realized. Therefore, instead of suspending disbursements, the Association chose to use the Third Highway Project as a lever to implement essential measures and improve project performance. The one area where the Association could have put more pressure on the Government concerned the resurfacing of paved roads. The Association had financed two sets of resurfacing equipment under the First and Second Highway Project without one km of road having been resurfaced. Disbursements could have been made conditional on resurfacing targets and additional technical assistance could have been provided if necessary. Under the Third Highway Project, resurfacing will be put out to contract.

6.04 The Third Highway Project aims to develop a maintenance capacity outside of the civil service structure and has taken steps to reduce the possibility of project goods and services being diverted to other uses. Control of the newly established OPR (para. 4.10) will be shared by several representatives from different ministries and disbursements will be conditional on annual detailed external audit of cost accounting records. The extent to which the mis-use of project funds can be avoided altogether is difficult to assess, given the scarcity of just about all kinds of goods in Guinea and the increasing rehabilitation and maintenance demands of a deteriorating infrastructure. Nevertheless, the safeguards proposed in the Third Project should help to avoid the major problems that occurred during the first two years of the Second Project.

6.05 The Association also found itself in a difficult position over the Government not complying with the Credit Agreement's covenant requiring a contribution of US\$1.5 million for the foreign exchange cost of equipment renewal. The economy of Guinea had deteriorated considerably since appraisal of the project and the Government claimed that insufficient foreign exchange funds were available for the project. With most of the credit funds disbursed or committed by 1983, the only real leverage the Association had, once again, was the Third Highway Project. Therefore, provision of US\$1.5 million in foreign exchange was made a condition of Board presentation of that project.

VII. CONCLUSION

7.01 The Second Highway Project was a follow-up project of the First Highway Project which had been very successful. However, Government personnel changed and brought less commitment to the project, favoring other political projects to the detriment of the road rehabilitation and maintenance program. Although the Association only became aware of the problems of diversion of project equipment and funds after nearly two years, it proved to be not too late to pull the project together again. Most of the equipment was returned and stricter controls were put on project materials, such as fuel and spare parts. The last year of the project saw a marked improvement, although still not up to the best year's output of the First Project.

7.02 The attempt to integrate the successful project unit established under the First Project into MTP proved to be much too soon, for other departments within the Ministry were not sufficiently developed to be able to implement the project. In addition, experience has shown that the success of the First Project and problems of the Second were very much affected by the level of commitment to the project by key individuals, a very difficult impact to assess when preparing projects. To avoid the negative impact of one individual with complete control over the project, the Third Highway Project attempts to curb the impact of any one individual by sharing control of the project between several interested parties. Also, project activities are once again to be undertaken by a separate unit. Measures will also be taken under the Third Highway Project to ensure that many of the other problems of the Second Project do not reoccur, such as strict accounting and disbursement controls and contracting out of resurfacing works.

Borrowers Compliance with Main Covenants

Development Credit Agreement 953-GUI

<u>Section</u>	<u>Covenant</u>	<u>Compliance</u>
3.01 (b)	Open Syli Revolving Fund	Complied with
3.01 (b) (1)	Credit fund with GSy 20 million	Complied with
3.02	Employment of Consultants satisfactory to IDA	Complied with
3.03 (b)	Project goods and services only to be used for rehabilitation and maintenance of Borrower's road network	not complied with, particularly in first half of project
3.04 (b) 4.01 (a) (b)	Keep adequate records of project progress	Not complied with in first two years of project, but adequate records kept by project completion
4.03 (a)	Adequately maintain road network	Very little road maintenance outside of project
4.03 (b)	Allocate US\$3.2 million at 1979 prices to cover recurrent road maintenance costs	Not complied with, but Govt providing funds for reduced 1983 maintenance program
4.03 (c) (i)	Procurement plan for equipment and spares, plan for establishing foreign exchange account for equipment renewal	Complied with
4.03 (c) (ii)	Allocate foreign exchange equivalent of US\$1.5 million at 1979 prices for equipment renewal	Not complied with. Condition of Board presentation for Third Highway Project
Schedule 1, 4 (b)	No disbursements for equipment to be purchased in 1981 until IDA approved plan to establish fund referred to in Section 4.03 (c)	Complied with

Table 3.1

PROJECT COMPLETION REPORT

GUINEA SECOND HIGHWAY PROJECT (CREDIT 953-GUI)

Actual and Expected Project Implementation

Project Component	Contractor/ Consultant and Nationality	Date of Appraisal Estimate	Actual Date	Percent of the works completed by expected completion date
<u>A. Road Rehabilitation and Maintenance</u>				
(i) Highway equipment, spare parts, materials and supplies:				
- preparation bidding documents		7/79, 1/81	7/79, 11/81	
- award of contracts		10/79, 5/81	5/80, 12/82	
- supply equipment, spares	Various	12/80, 12/81	2/81, early 1984	20,0
- supply materials, supplies	Various	10/79, 12/82	3/80, 12/83	40,0
(ii) Construction offices and workshops	force account	9/79 - 12/80	9/80	component reduced
(iii) TA	LBT	1/80 - 12/82	12/79 - 12/83	
(iv) Road rehabilitation works	force account	1/80 - 12/82	2/80 - 12/83	44
<u>B. National Soils Laboratory Rehabilitation</u>				
(i) Building extension	TOCSA/SOGUICO	4/80	3/81 - 12/83	0
(ii) Equipment purchase				
- award contract		9/79		
- supply equipment		12/80	4/81	33
(iii) TA	LB/CEBTP	1/80 - 12/82	1981	
<u>C. Road Preinvestment Studies</u>				
Shortlisting consultants		6/79	9/79	
Award contract	SETEC	9/79	4/80	
Feasibility studies		10/79 - 6/80	6/80 - 6/81	0
Review		8/80	7/81	
Detailed engineering		10/80 - 12/81	8/81 - 3/82	45

Source: Second Highway Project Appraisal Report
Supervision and Consultant Reports

Table 3.2

PROJECT COMPLETION REPORT
GUINEA SECOND HIGHWAY PROJECT (CREDIT 953/GUI)
Road Rehabilitation and Maintenance Program

<u>Roads to be Rehabilitated</u>	<u>Appraisal Estimate</u>	<u>KM Rehabilitated</u>			<u>KM Maintained</u>		
		<u>1980-Feb82</u>	<u>Actual Mch82-Jan84</u>	<u>Total</u>	<u>1980-Feb82</u>	<u>Mch82-Jan84</u>	<u>Total</u>
Gaoual-Talimele-Kindia	256	41	210	251			
Gaoual-Seriba-Koundava-Senegal border	154		16	16			
Labe-Seriba	146	49	97	146			
Labe-Koubia	83			0			
Labe-Lelouma	53			0			
Labe-Tongue	85		81	81			
Labe-Mali	104		45	45			
Dabola-Faranah	113	45	68	113			
Dabola-Dinguiraye	106		74	74			
Forecariah-Sierra Leone border	35			0	15	15	
Kankan-Siguiri-Mali border	211	28	175	203			
Kankan-Mandiana	85		46	46			
Beyla-Sinko	56			0			
N'Zerekore-Yamou	61			0			
Subtotal	1,548	163	812	975	15	15	
<u>Roads Maintained</u>							
Dabola-Kouroussa-Kankan	240				230		230
Gueckedou-Seredou-N'Zerekore	243				193	372	565 ^{1/}
Macenta-Kousan Koro	100				70		70
Dubreka-Bofa-Kolabounyi	195				190		190
Kankan-Kerouane	145				30	155	185 ^{1/}
Kerouane-Beyla-N'Zerekore	248				50	374	424 ^{1/}
Subtotal	1,171	0	0	0	763	901	1664
TOTAL		163	812	975	778	901	1679

^{1/} Initial work had to be redone because of poor quality

Source: Consultant's Progress Reports

Table 3.3

Ghana's tra
PROJECT COMPLETION REPORT
GUINEA SECOND HIGHWAY PROJECT (CREDIT 953-GUI)

Annual Output of Road Rehabilitation
and Maintenance Brigades

<u>Rehabilitation</u>	<u>April 1980-Feb.82</u>	<u>March-Dec.1982</u>	<u>Jan-Dec.1983</u>	<u>Total</u>
	----- km -----			
BT1	28	74	147	249
2	45	57	130	232
3	49	73	110	232
4	41	66	74	181
BL3	-	31	50	81
Subtotal	163	301	511	975
<hr/>				
<u>Light Maintenance</u>				
BL1	310	142	384	836
2	263	150	222	635
3	205	-	-	205
Subtotal	778	292	606	1676
<hr/>				
<u>Grading</u>				
BN1	211	194	1019	1424
BN2	-	-	180	180
Subtotal	211	194	1199	1604
<hr/>				
<u>Patching</u>				
	----- m2 -----			
BP2	4,600	-	-	4,600
BP3	4,600	5,900	30,210	40,710
BP4	6,900	4,800	11,600	23,300
BP5	3,200	-	-	3,200
Subtotal	19,300	10,700	41,810	71,810

Source: Consultant's Progress Reports and Draft Project Completion Report.

PROJECT COMPLETION REPORT
GUINEA SECOND HIGHWAY PROJECT (CREDIT 953-GUI)
Actual and Appraisal Estimates of Project Costs (As of January 31, 1984)

Project Component	Actual			Appraisal			Actual Cost as Percentage of Appraisal Estimate %	Actual			Appraisal			Actual Cost as Percentage of Appraisal Estimate %
	Local	Foreign	Total Cdy Million	Local	Foreign	Total		Local	Foreign	Total US\$ million	Local	Foreign	Total	
<u>Road Rehabilitation and Maintenance</u>			<u>365</u>			<u>328</u>			<u>27.25</u>			<u>26.44</u>		
Equipment & spare parts	0	229	229	0	176	176	130	0	11.3	11.3	0	8.81	8.81	128
Operating costs			227	131	150	281	81		10.35	6.56	7.50	14.06	74	
Construction of offices and workshops			5	4	6	1	50		0.20	0.20	0.30	0.31	40	
Technical assistance and fellowships			109	2	59	61	179		5.18	0.12	2.94	3.06	169	
<u>Improvement to Soils Laboratory</u>			<u>11</u>			<u>20</u>			<u>0.56</u>			<u>0.99</u>		
Building Extension			1	1	2	4	25		0.05	0.07	0.11	0.18	28	
Equipment	0	4	4	0	8	8	50	0	0.20	0.20	0	0.39	0.39	51
Technical assistance and fellowships	1	5	6	1	8	8	75	0.05	0.26	0.31	0.01	0.41	0.42	74
<u>Preinvestment Studies of Conakry-Namou Road</u>	3	20	<u>23</u>	<u>3</u>	<u>23</u>	<u>26</u>	88	0.15	1.01	<u>1.16</u>	<u>0.13</u>	<u>1.17</u>	<u>1.30</u>	89
Subtotal			604	142	432	574	105		28.75	7.10	21.63	28.73	100	
Estimated expenditures from Feb.1,1984 to end of project			<u>17</u>			<u>0</u>			<u>0.72</u> ^{1/}			<u>0</u>		
<u>Grand Total</u>			<u>621</u>			<u>574</u>	<u>108</u>		<u>29.47</u>			<u>28.73</u>	<u>103</u>	

^{1/} Laboratory: \$0.27 million
 Equipment: \$0.45 million

Source: Appraisal Report, Consultant's Progress Reports and Draft Project Completion Report

PROJECT COMPLETION REPORT

GUINEA SECOND HIGHWAY PROJECT (CREDIT 953-GUI)

Project Financing

<u>Project Component</u>	<u>US\$ million equivalent ^{1/}</u>				<u>BADEA</u>		<u>GOVT</u>	
	<u>IDA</u>	<u>IDA</u>	<u>EEC</u>	<u>EEC</u>	<u>Planned</u>	<u>Actual</u>	<u>Planned</u>	<u>Actual</u>
<u>Road Rehabilitation & Maintenance</u>	<u>Planned</u>	<u>Actual</u>	<u>Planned</u>	<u>Actual</u>	<u>Planned</u>	<u>Actual</u>	<u>Planned</u>	<u>Actual</u>
Equipment & spare parts	2.40	5.15	3.50	2.53	2.90	3.60	0.01	0.02
Operating costs (incl. materials)	6.50	3.13			2.20	0.66	5.36	6.98
Building Costs			0.50	0			0.01	0
Technical assistance & fellowships	2.00	3.39	0	0.38	0.90	1.33	0.16	0.08
<u>Soil Laboratory</u>	0.90	0.50					0.09	0.06
<u>Conakry Mamou Feasibility Study</u>	1.20	0.28	0	0.73			0.10	0.01
<u>TOTAL</u>	<u>13.00</u>	<u>12.45</u>	<u>4.00</u>	<u>3.64</u>	<u>6.00</u>	<u>5.59</u>	<u>5.73</u>	<u>7.15</u>
Devaluation currency versus US\$				0.36				
To be disbursed before end project ^{2/}		<u>0.55</u>				<u>0.41</u>		<u>0.06</u>
<u>GRAND TOTAL</u>	<u>13.00</u>	<u>13.00</u>	<u>4.00</u>	<u>4.00</u>	<u>6.00</u>	<u>6.00</u>	<u>5.73</u>	<u>7.21</u>

^{1/} Disbursed as of January 1984

^{2/} IDA - US\$0.22 for laboratory, US\$0.27 for consultants and US\$0.06 for equipment.

BADEA - US\$0.41 for equipment

GOVT - US\$0.05 for laboratory and US\$0.01 for consultants.

Source: Consultant's Progress Reports and Draft Project Completion Report

PROJECT COMPLETION REPORT
GUINEA SECOND HIGHWAY PROJECT (CREDIT 953-GUI)

Comparisons of Vehicle Operating Costs

	<u>Road surface-paved</u>				<u>Road surface-unpaved</u>			
	<u>Good</u>	<u>Fair</u>	<u>Poor</u>	<u>V. Poor</u>	<u>Good</u>	<u>Fair</u>	<u>Poor</u>	<u>V. Poor</u>
<u>1978</u>								
Car	1.6	1.7	1.9	-	1.9	2.4	2.7	3.1
Van	2.7	3.1	3.6	-	3.5	4.3	5.0	6.0
Truck (10 ton)	9.5	10.3	11.2	-	11.2	13.2	14.6	16.5
<u>1980</u>								
Car	3.82	4.62	5.47	8.00	5.14	6.78	9.40	12.28
Van	5.31	6.18	7.14	9.92	6.68	8.48	11.38	14.62
Truck (8 ton)	15.76	17.38	19.18	24.18	18.38	21.62	26.76	32.80

Source: Second and Third Highway Appraisal Reports.

Table 5.2

PROJECT COMPLETION REPORT

GUINEA SECOND HIGHWAY PROJECT (CREDIT 953-GUI)

Economic Evaluation - Road Rehabilitation
and Maintenance Program

<u>Road Name</u>	<u>Km</u>	<u>Traffic Appraisal (1978)</u>	<u>Traffic Actual (1980/81)</u>	<u>EER Appraisal</u>	<u>EER Reevaluated</u>
<u>Road Rehabilitation</u>					
Gaoual-Telimele-Kindia	251	33	25	8	5
Gaoual-Koundara-Senegal	16	21	25	54 ^{a/}	5
Labe-Seriba	146	48	50	54 ^{a/}	32
Labe-Tongue	81	18	30	54 ^{a/}	10
Labe-Mali	45	30	30	54 ^{a/}	10
Dabola-Faranah	113	39	30	12	10
Dabola-Dinguiraye	74	31	15	7	negative
Kankan-Siguiri-Mali	203	24	50	13	32
Kankan-Mandiani	46	18	40	9	22
Total	975				19 average

Mechanized maintenance.

Spot regravelling, grading, etc.	1679 Km
Grading	742 km
Patching	71,810 m ²

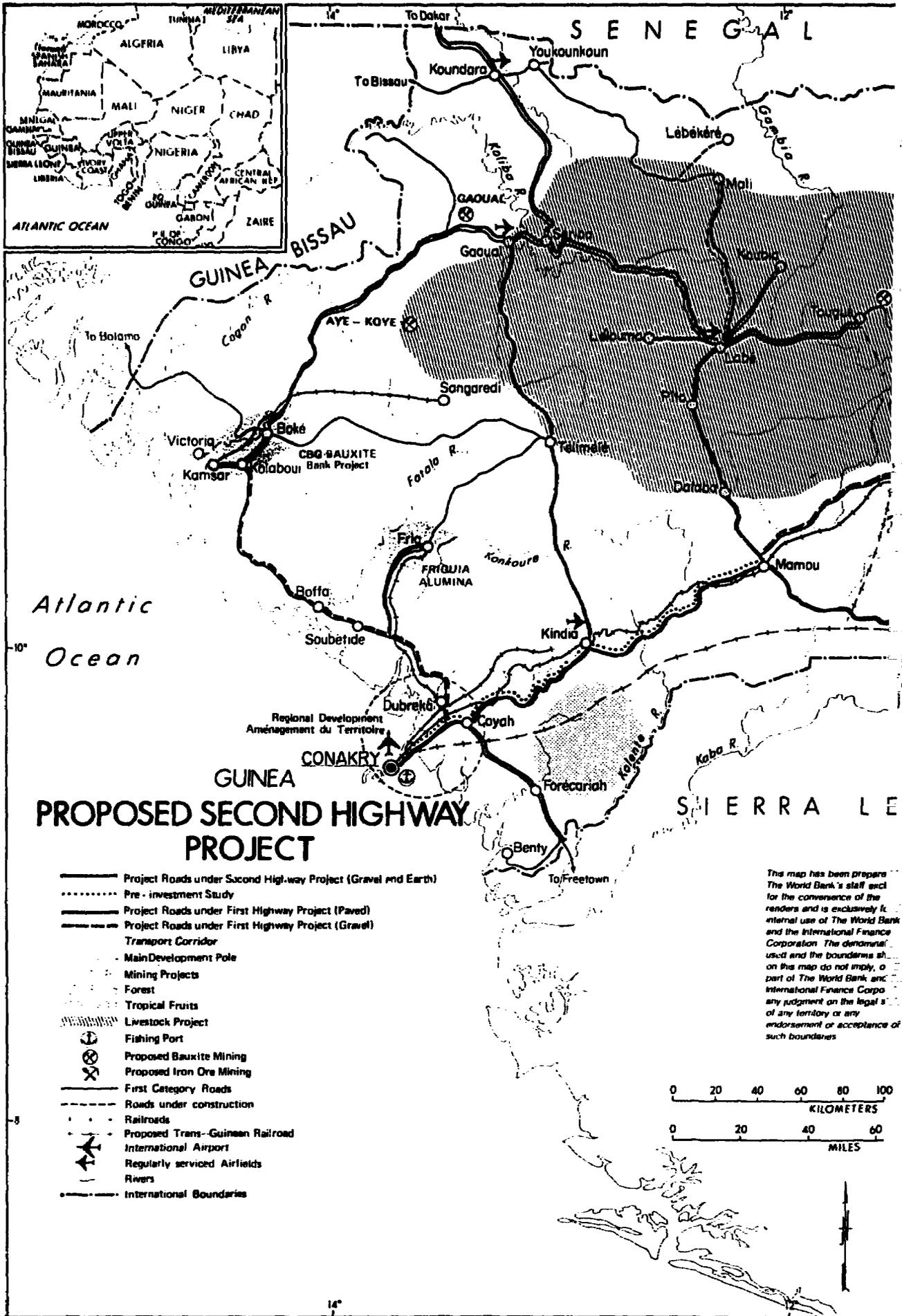
Economic Analysis for Project

	<u>Cap.Cost</u> ^{b/}	<u>Incremental Maint.Cost</u>	<u>---- VOC Savings ----</u>		
			<u>Rehab.</u>	<u>Maintenance</u>	<u>Total</u>
1980	7.80	-	-	-	-
1981	10.80	-	-	-	-
1982	1.90	0.32	0.41	2.01	2.45
1983	5.90	0.56	2.38	2.31	2.69
1984		1.19	4.12	5.30	9.42
1985		1.19	4.29	5.49	9.78
1986		1.19	3.86	5.68	9.54
1987		1.19	2.75	2.94	5.69
1988		1.19	2.82	3.04	5.86
1989		1.19	2.92	3.15	6.07
1990		1.19	2.07	3.26	5.33

ERR: 25%

a/ Evaluated as package of roads under the livestock project.

b/ Assuming US\$1.0 million in taxes and shadow exchange rate GSY 40 = US\$1



PROPOSED SECOND HIGHWAY PROJECT

- Project Roads under Second Highway Project (Gravel and Earth)
- Pre - investment Study
- Project Roads under First Highway Project (Paved)
- Project Roads under First Highway Project (Gravel)
- Transport Corridor
- Main Development Pole
- Mining Projects
- Forest
- Tropical Fruits
- Livestock Project
- Fishing Port
- Proposed Bauxite Mining
- Proposed Iron Ore Mining
- First Category Roads
- Roads under construction
- Railroads
- Proposed Trans-Guinean Railroad
- International Airport
- Regularly serviced Airfields
- Rivers
- International Boundaries

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