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PROJECT REPORT

H A I T I

PONT SONDE-MIREBALAIS HIGHWAY AND RURAL ROADS

(HA-0049)

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H A I T I

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I. INTRODUCTION

A. Background

- 1.01 The idea for the project under review here was first discussed during the programming mission that visited Haiti in April 1979. The mission's report concluded that the Bank should encourage and support the initiative undertaken by the Government of Haiti in its 1976-1981 Five-year Development Plan: to increase agricultural production and productivity through the execution of regional projects within the broader framework of a policy designed to reduce the regional economic imbalance (then and still evident), while promoting adequate spatial distribution of the population.
- 1.02 The pursuit of this objective, however, suggested that the Bank's strategy should favor programs to integrate isolated rural districts into the mainstream of economic development, a prerequisite for which was installation of the required social and economic infrastructure. From the standpoint of the transport sector, this meant the need to expand and improve the country's limited road network and - with particular regard to this project - to rebuild and rehabilitate the road linking Pont Sondé in the Artibonite Valley with Mirebalais and Hinche in the central plateau. The rationale was that execution of this project would encourage the development of rural integrated programs in both these areas. 1/
- 1.03 Accordingly the Ministry of Planning sent the Bank a letter on October 10, 1979, requesting technical assistance for partial financing of the cost of preparing the feasibility study and final designs for construction of the Pont Sondé-Mirebalais-Hinche road, and for a number of secondary roads in the Artibonite Valley that would facilitate farm-to-market transport.
- 1.04 Preliminary approval from the Bank was granted on July 9, 1980. The corresponding agreement with the Government of Haiti (ATC/TF(SP)-1911-HA, in the amount of US\$1,560,000) was signed on December 30, 1980. Preparation of the studies and designs was entrusted to the consortium of Lavalin International of Canada and Sohicco of Haiti, under the supervision of the Department of Public Works, Transport and Communications (TPTC). The plans, bidding documents and final cost estimates were completed in November 1983.

B. Request and priority

- 1.05 The request was presented by the Ministry of Planning (SEP), on behalf of the Republic of Haiti, on September 12, 1983. In its letter of request, the Government of Haiti stressed the priority it

1/ IDB activities in the Artibonite Valley are summarized in paragraphs 2.52 and 2.53 of this report.

assigned to the project, as first stated to the programming mission in April 1979 and later repeated at the time of the May 1981 programming mission. During preparation of the original project report, the Haitian authorities once again reiterated the project's priority.

- 1.06 At the time, however, no concessionary funds were available for the transport sector - even in group D countries such as Haiti - so it was impossible to process the operation for approval.
- 1.07 Later on, in September 1989, the authorities again stated the priority held by this project in the context of the Artibonite River Valley development. They also showed the Bank's programming mission that the conditions which originally justified consideration of financing for this project were still in effect and therefore warranted a top-priority rating in the government's planning.

C. Missions

- 1.08 The orientation mission visited Haiti in April 1982 to review the status of the technical cooperation program with the consultants and local authorities. The review revealed a number of omissions in the preliminary economic analysis and the consultants were then given additional guidelines to help them tailor their report to the standards established by the Bank.
- 1.09 One year later, in April 1983, another orientation mission visited Haiti to review the completed feasibility study and ascertain what progress had been made in preparing the final designs. From the economic standpoint, the mission's most significant finding was that, because of low traffic volumes and negative maintenance cost savings pursuant to national and departmental construction design standards, justification for the project's road between Mirebalais and Hinche would have to lie in the increased agricultural output which, in turn, would require complementary parallel investments in the central plateau, estimated as approximately US\$32.8 million. No information on the timing and source of such investment was available.
- 1.10 In view of this finding and the extraordinary effort that, given its financial limitations, the Government of Haiti would have to make to provide the local counterpart resources (US\$23 million of the total estimated project cost of US\$53 million), the analysis mission limited its study to the Pont Sondé-Mirebalais (73.8 km) segment plus a selected six (approximately 66 km) of the 12 secondary roads planned for the Artibonite Valley, and advised the Government of Haiti that the Mirebalais-Hinche segment would be considered at that time.
- 1.11 When concessionary funds for the transport sector were made available by the Seventh Replenishment, this operation was again presented to the Bank in September 1989, on the occasion of the most recent programming mission.

- 1.12 In December 1989, the Bank sent a new analysis mission, whose basic purpose was to verify that conditions warranting original consideration of the project were still valid; and to update the data needed to complete the corresponding analysis.

D. Conclusions

1. Project feasibility

- 1.13 Following these instructions, the Project Committee again discussed the suggested parameters of the project with the competent local authorities, reaffirmed its priority, and--based on a final examination of the designs, cost estimates, economic rate of return and the TPTC institutional capability--concluded that the project is technically, financially and economically viable, as shown in the following chapters.

2. Financing

- 1.14 The total cost of the project, including the corresponding provision for escalation, contingencies, and financial charges, is estimated as US\$49,500,000 equivalent, which would be invested over a five-year period and financed in part by a US\$44,500,000 loan chargeable to the Fund for Special Operations.

II. FRAME OF REFERENCE

A. Recent economic situation

- 2.01 The modest economic recovery experienced in fiscal years 1986 and 1987 (the fiscal year ends on September 30) was too frail to withstand the fall of the constitutional government in November 1987. The immediate suspension of foreign aid compelled the government to place even stronger restrictions on public investment and to implement stringent economic adjustment procedures.
- 2.02 From the standpoint of production, the most dynamic element was the industrial sector, particularly the subsector that assembles products for the foreign market. After having been the most active subsector for more than 15 years and a constantly growing source of jobs, however, it remained at a virtual standstill during fiscal year 1988 (October 1987-September 1988) and declined by an estimated 15% during the following fiscal period.
- 2.03 The acute political crisis, evident in constant volatility and inept management of the exchange market, has discouraged foreign investors and practically paralyzed private investment, triggering a decline in the principal economic indicators.
- 2.04 These factors were partially responsible for the 1.5% decline in the gross domestic product during fiscal year 1988, followed by a further drop of 0.5% in the following period, which ended in September 1989. In addition, inflation began to spiral and the parallel market experienced a 40% devaluation in the gourde, with a clearly continuing trend in that direction.
- 2.05 The coherent economic program adopted upon the fall of the Francois Duvalier regime in February 1986, was supported by International Monetary Fund and World Bank programs. It generated a surplus of some US\$30 million for fiscal years 1986 and 1987 (equivalent to 1% of the GDP). The interruption of the November 1987 elections, however, meant that disbursement of those programs could not be completed. As a result, the inflow of foreign assistance dropped from US\$168 million for fiscal year 1987 to US\$124 million for the same period in 1989. The previous surplus in the balance of payments became a deficit of US\$12 million for the fiscal period ending in September 1989.
- 2.06 In that month the external debt reached US\$782 million, of which US\$660 million represented concessionary loans. Servicing of that debt amounted to US\$56 million in 1989; US\$41 million went to amortization of the principle - the equivalent of 19% of Haiti's exports for that period. The standby arrangement with the International Monetary Fund allowed payment of US\$12 million of that debt which were in arrears in September 1989, leaving less than US\$10 million outstanding.

B. Economic policy

- 2.07 The present government, which took office in September 1988, presented a balanced fiscal budget for fiscal year 1989. The loss of control over spending - particularly at the time of the April 1989 coup d'état attempt - along with sluggish performance of public enterprise profits, left the public sector with a heavy deficit. Financing had to be obtained from the central bank through new borrowings, thereby boosting public sector debt with that agency to 1.1% of the GDP at the end of fiscal year 1988 and 2.4% at the end of 1989.
- 2.08 In an attempt to correct both internal and external financial imbalances, in September 1989 the government signed an agreement with the International Monetary Fund for a 15-month period ending on December 31, 1990. However, this arrangement was unable to set aside the measures taken by the government in July 1989, whereby it retained total control over export-generated foreign exchange and transfers or movements of capital. On the contrary, the government ended up by declaring the parallel market illegal.
- 2.09 The program's efforts to remedy the fiscal deficit are almost exclusively limited to increasing fiscal receipts. Taxes on imports have risen by 30%, partially reflecting the change in the parallel market exchange rate. From the standpoint of spending, the only measure put into practice was the freezing of contracts and civil servants' salaries.

C. Outlook

- 2.10 The measures adopted under the foregoing program with the International Monetary Fund had produced general frustration which has not yet disappeared. It has therefore been impossible to restore private sector confidence in the possibility of new investments, and economic activities thus remain severely depressed.
- 2.11 The program aimed at reducing inflationary pressure has had to face far greater inflation than anticipated. There are no grounds for expecting that such pressure will be eased - or even not intensified - in the immediate future.
- 2.12 Devaluation of the gourde in the parallel market has now reached 60%. The target goals of government revenue are apparently impossible to achieve, mainly because of the decline of income from taxes on exports.
- 2.13 A degree of progress has been made, however, in control of spending. Current public outlays are well below the limits established in the program and the performance of decentralized public agencies has begun to improve beyond expectations.

- 2.14 Progress has also been made in reaching agreements in very important areas. It is now believed that the interest rate ceilings set by the program may be withdrawn or changed. Market liquidity has been tightened and both liberalization of the exchange system and legalization of the parallel market in foreign exchange are now being considered.
- 2.15 These measures, however, fail to solve the problem of the implicit and indirect tax on exports, since foreign exchange revenue from this source is converted at the official exchange rate while the parallel market is 60% higher.
- 2.16 The Haitian authorities will have to reconsider their decision not to change the official exchange rate of gourde 5 - US\$ 1, which has been in effect since 1919. A change in that rate would increase exports and encourage investment. They will also have to consider the possibility of making official imports subject to an exchange rate set by the parallel market, which would reduce the amount of foreign exchange needed from the central bank for imports, while eliminating the subsidy on this activity which is detrimental to the interests of local producers.
- 2.17 A consultative group plans to meet in April 1990 to discuss a public sector investment program prepared with support from the World Bank, aimed at obtaining greater support from the international financial community. At the same time, there will be a formal review of progress made in implementation of the International Monetary Fund program.

D. The transport sector

1. General features

- 2.18 Haiti's location in the western third of the island of Hispaniola, its mountainous terrain and long coastline, the dispersion and low productivity of its agricultural sector, and the dominance of the capital city, Port-au-Prince, are factors that explain the preponderant role of overland transportation, on the one hand, and coastal shipping on the other, in the inter and intra-regional transport of passengers and merchandise.
- 2.19 Roads are used for more than 80% of all transport in Haiti, and the system is concentrated in the few primary roads built recently, such as the northern highway linking Port-au-Prince and Cap Haitien and the southern highway between Port-au-Prince and Les Cayes.
- 2.20 The importance of coastal transport has declined, partially due to the concentration on development of the road sector in the seventies, but this means currently accounts for about 18% of total freight movement. As part of the World Bank's Fifth Transportation Project and pursuant to recommendations of a transportation study completed

in 1977, however, coastal transport has improved with the construction and upgrading of 10 shallow-draft port terminals. The hope is that better coastal transport services will allow postponement of costly road construction projects in some instances. In 1984, coastal ports handled 65,000 tons of freight and approximately 134,000 passengers.

- 2.21 Air transport, which currently accounts for only 2% of total volume in the transportation sector, has been gaining importance in the last few years with the growth of processing and assembly industries in Haiti. Freight shipments through the Port-au-Prince international airport increased from 24,000 tons in 1978 to 29,600 in 1986, while passenger traffic rose from 360,000 to 487,000 in the same interval. Facilities at the Cap Haitien airport - the second largest in the country - improved recently, but the movement of passenger and merchandise traffic is still very low.
- 2.22 Roughly 98% of the country's foreign trade is shipped by sea and the remaining portion by air or overland to the Dominican Republic. Almost all general freight (95%) goes through Port-au-Prince where facilities were increased with partial financing from loans 329/SF and 329(A)/SF from the IDB, rising from 194,000 tons in 1971 to 500,000 in 1980. Total shipments in 1987 consisted of 492,000 tons, utilizing 98% of that capacity. At the same time existing services at Cap Haitien, the country's second largest seaport, were improved with assistance from AID and KFW.

2. Growth of the sector

- 2.23 The transport sector posted high growth rates at the end of the last decade: 25%, 20%, 29.8% and 12.6% between 1977 and 1980, measured in constant values. The rapid growth was chiefly due to the considerable activity involved in large-scale projects such as: (i) the southern highway or National Highway 200 between Port-au-Prince and Les Cayes; (ii) the northern highway or National Highway 100 between Port-au-Prince and Cap Haitien; and (iii) modernization and expansion of port facilities at Port-au-Prince. But starting in 1981-82, the sector's growth in absolute terms was very slow, adding only about 320 kilometers of secondary roads to the existing infrastructure between that date and the end of 1988.
- 2.24 Total investment in the road transport subsector in fiscal year 1988-89 increased to US\$2.3 million, with the Haitian Government contributing US\$1.8 million equivalent and the remaining US\$0.5 million provided by financing from external sources. Investment in the sector accounted for 29% of total spending in all sectors of the economy.

3. Sector policy

- 2.25 With allocation of 15.7% of planned investments scheduled by the Third Five-year Development Plan (1982-1986), the transport sector

ranked third in order of sector priority, following agriculture (20%) and energy (18.1%). ^{1/} Although this percentage shows a downturn when compared with the first and second development plans (see Annex II-2), the proposed investments represent a continuation of the efforts launched by the Second Five-year Plan (1976-1981), which assigned priority to construction, a better quality of maintenance, upgrading and rehabilitation of existing roads, and improved coastal transport.

- 2.26 Since decentralization of economic activity was a primary objective of the Five-year Plan and continues to be so in the present development plan, the strategy for developing the transport sector was conceived with an eye to correcting the obvious regional imbalances by expanding the traffic in passengers and goods among the various parts of the country, on the one hand, and between the country and the rest of the world, on the other, while further strengthening the development of agriculture and other productive sectors. The same principles govern the investment program in the transport sector covering the period from 1987 to 1991.
- 2.27 Consequently, the final objective is to provide effective and adequate transportation links between the four regions into which the country has been divided for planning purposes, i.e.: (i) the northern region, which includes 14.03% of Haiti's territory, with a population density of 196.7/km² and 15% of the total population; (ii) the transversal region, consisting of the northwestern and Artibonite departments, with 27.5% of the total population and a density of 129.3/km², occupying 39.32% of the national territory; (iii) the western region, which includes the capital city of Port-au-Prince and 38% of the total population in an area that covers 25.48% of the country, producing a population density of 275.8/km²; and (iv) the southern region, which occupies 21.15% of the land and includes 19.6% of the total population - estimated at approximately 5.2 million - making the population density 172/km².

E. Road subsector

- 2.28 Development of Haiti's road system started in the 1915-1933 period and continued between 1935 and 1942, at which time the roads were rebuilt. Later on, between 1956 and 1962, AID and the World Bank were particularly active. Two IBRD loans totaling US\$3 million supported a project for maintenance and rehabilitation of some 1,000 km of roads. Activity in this subsector came to a virtual halt in the sixties, when the principal investment was construction of the southern highway section linking Port-au-Prince and Léogâne (33 km built between 1966 and 1970). The year 1972 saw a renewal of multilateral and bilateral agency activity in the transport sector.

^{1/} See Annex II-2, "Sectorial Allocation under the Third Development Plan 1982-1986".

- 2.29 Growth in the 1970s was largely due to the recommendations made in the National Transportation Study, conducted by the firm of Louis Berger International between 1975 and 1977, thanks to a US\$600,000 grant from UNDP. The recommendations from the study that were included in the Second (EF 1976-1981) and Third (EF 1982-1986) Five-year Development Plans, called for priority to be given to improved maintenance and rehabilitation of existing roads and upgrading of coastal shipping facilities to provide a more even distribution of economic activity between Port-au-Prince and cities in the provinces. As a result, Haiti's road system structure reflects this development pattern.

1. Structure

- 2.30 At present, Haiti's road system comprises: (a) some 595 km of national roads linking Port-au-Prince with the provincial capitals of Cayes, Cap Haitien, Jacmel and Gonaives, all of which are paved; (b) 2,142 km of departmental roads which - with the exception of paved segments between Carrefour Dufort and Jacmel in the south and between Cap Haitien and Trou du Nord in the north, are gravel-surfaced; and (c) 388 km of penetration or access roads, dirt-surfaced and used mainly by pedestrians and beasts of burden. 1/ The departmental and penetration roads are virtually impassable during the rainy season. Furthermore, most of the steel and concrete bridges are direly in need of repair. There are also numerous places where vehicles, pedestrians and pack animals can ford rivers when the water level is low, causing frequent delay when the level rises. An examination of the country's road map shows that four regions (the northwest peninsula; the central plateau; the western part of the southern peninsula; and the southeastern region) are virtually isolated from the rest of the country. The 1982-1986 Road Construction Program concentrated on developing rural road infrastructure. 2/

2. Composition of the vehicle fleet 3/

- 2.31 Annexes II-4 and II-5 present data on vehicle registry for fiscal years 1975-1980 and vehicle imports for 1970-1980. Most of the units that do not belong to the government (90% of the estimated total of 38,000 vehicles) are registered at Port-au-Prince. The findings of a recent study conducted by the SAT (Service Autonome des Transports) indicate that the capital city is the heart of the highway system and the point of origin or destination of 84% of the vehicles that transport 75% of all freight and 80% of all passengers. As those figures indicate, trucks and pick-ups providing public and private transportation account for almost 27% of the fleet. Approximately 12% of this category is used for passenger transportation and roughly 30% of the freight vehicle fleet transports both passengers and freight.

1/ See Annex II-3, "Present and Projected Highway Network, 1981-1986".
2/ See Annexes II-2 and II-3, "1982-1986 Road Construction Program".
3/ Source: IBRD, "Sixth Highway Project" (CR-1220-HA).

3. Road use patterns

- 2.32 An estimated 50% of the road system is used by fewer than 20 vehicles a day, while 20-100 use 10% of the roads. Of the remaining 40%, 25% can handle 100 to 200 and 15% more than 300 vehicles per day. Most of the latter category (15%) consist of recently built primary roads, i.e. the northern and southern highways on which recent traffic counts point to annual increases of 15% to 20% during the first few years of service, as compared with a projected growth rate of 4% to 8%. Given the shortcomings of the rural road infrastructure (as described in paragraph 2.30), and Haiti's predominantly market economy, it is estimated that the means of transport used by almost half of the goods produced in the country are "Madame Saras" and pack animals.

4. Construction and maintenance of secondary roads

- 2.33 In 1978, as part of the Farm Access Road Project (project 521-0074, approved in 1976), 1/ AID carried out an on-site labor-intensive pilot project to determine the feasibility of using this technique for the construction of rural roads in Haiti. The success of the pilot project resulted in a new system - which has been known since then as the "light brigade" - to build and repair rural roads.
- 2.34 The evaluation report of the Second Agricultural Roads Project (project 521-0149, approved in 1982), 1/ AID defines a light brigade as a unit that employs 150-200 workers organized into 10 to 12 persons each. Each brigade performs a specialized activity and has an engineer or novice engineer and three to four supervisors to direct equipment and administrative personnel. Under the "light brigade" method, manual work (clearing, excavating, leveling, digging ditches, etc.) is supplemented by light equipment for work that cannot be done by hand, such as transporting materials and compacting. To create a new light brigade, an operational brigade is expanded to more than 300 persons; on-site training is given to the additional staff; and the original unit is divided into two functional brigades after a three-month interval. The evaluation report concludes that the procedure is "feasible from the technical, financial, and sociocultural standpoints" and recommends that its use be continued. Subsequently, the Bank adopted this method to execute the operations financed by loan 632/SF and 631/SF (rural roads sub-program). 2/
- 2.35 The light brigade method has also been successfully applied to maintenance operations by SEPRRN, which has made increasing use of its 154 "manual brigades", whom it provides with tools and training under the Community Action Maintenance Program (CAMP) started in

1/ See paragraphs 2.49 and 2.50.

2/ See paragraphs 2.44 and 2.45.

1981. These manual brigades have helped maintain approximately 200 km of rural roads. In addition, the second AID access road project calls for technical assistance to SEPRRN for organizational development of its CAMP unit.

5. Operations with external financing

(a) IDB participation

- 2.36 Thus far, the Bank has granted financing to build the southern highway (loans 365/SF-HA, 365(A)/SF-HA and 365(B)/SF-HA) and repair about 132 km of secondary and access roads in places affected by Hurricane Allen (loan 632/SF-HA). The Bank also helped finance access roads as part of a rural development program in the southern peninsula, financed by loan 631/SF-HA (EEC grant of five million ECU).

(i) Loans 365/SF-HA, 365(A)/SF-HA and 365(B)/SF-HA

- 2.37 These loans were approved on August 2, 1973, October 16, 1975 and February 23, 1978, respectively, to finance the construction of the southern highway linking Port-au-Prince with the port of Les Cayes in southern Haiti. The section of highway built with that financing in fact covers the 155 km between Léogâne and Les Cayes, since the segment between Port-au-Prince and Léogâne (33 km) was built by the Government of Haiti between 1966 and 1970. Parallel to loan 365/SF, the Bank approved TC-ATN/SF-1249 for US\$600,000 to set up and start up a project coordinating unit (subsequently created by Decree on December 2, 1976) and execute a vehicle weight-control program.
- 2.38 MTPTC was the executing agency for the project, which was completed in January 1980 at a total cost of US\$81 million, of which the IDB contributed US\$52.4 million (65%) for the three loans, while the local counterpart amounted to US\$28.6 million equivalent (35%). The final cost of the project was approximately US\$56 million more than the original US\$25.1 million estimated by the Bank in August 1973. The overrun was financed in part by the Bank with additional contributions of US\$25 million from loan 365(A)/SF and US\$5.2 million from loan 365(B)/SF, and through an increase of approximately US\$26 million over the originally budgeted local counterpart funding of US\$2.9 million.
- 2.39 In short, loans 365/SF (US\$22.2 million) and 365(B)/SF (US\$5.2 million) helped to finance segments I and II of the 96-km highway joining Léogâne and Aquin, while loan 365(A)/SF (US\$25 million) helped finance the 59-km segment III between Aquin and Les Cayes and segment IV, which consisted of the bridge over the Momance River. The resources from all three loans were disbursed in their entirety except for US\$10,299.

- 2.40 Special conditions of the loan contract: to date, the borrower has complied with the requirements in sections 5.08(a), 5.07(a) and 6.04(b) of loans 365/SF, 365(A)/SF and 365(B)/SF, respectively, which require presentation of an annual maintenance plan.
- 2.41 Evaluation of the project revealed a number of positive and negative elements. On the plus side, the project completion report (PCR) notes that the counterpart funds - considerably higher than originally anticipated - were made available quickly and on schedule. The report also describes the favorable changes in the institutional structure of the Ministry of Public Works, thanks to creation of the Construction and Supervision Unit and consolidation of services rendered by the Road Maintenance Division (SEPRRN). Another favorable result of the project was the creation on January 17, 1977 of an executing unit responsible for coordinating and controlling the execution of large-scale infrastructure projects. The unit began operating in conjunction with parallel technical assistance program ATN/SF-1249, and when that project was completed, it assumed responsibility for other large-scale projects, such as the first stage of the stormwater drainage projects in Port-au-Prince (IDB loan 564/SF-HA); the farm access roads financed by AID; and the World Bank transport projects mentioned in paragraphs 2.45 and 2.46.
- 2.42 On the negative side, the PCR shows that the hefty increase in project cost was largely due to faulty and insufficient soil testing, which was conducted before determining the quality and amounts of necessary materials. The obvious result was that certain parts of the original project bore no relation to the real conditions discovered, thus requiring improvements in the designs and the corresponding increase in costs, particularly in regard to drainage and earthwork.
- 2.43 The last segment of the highway was inaugurated on January 22, 1980 and there have been no major maintenance problems thus far. Another 4-cm layer of asphalt surfacing was added on approximately 20 of the 96 km of the road linking Léogâne and Miragoâne (section I) and Mirogoâne and Aquin (section II). These segments began to deteriorate shortly after the inauguration, due to the poor quality of asphalt used and the insufficient thickness of the original surfacing (4 cm) to bear the weight of transport vehicles heavier than anticipated. The extra surfacing was performed on force account.

(ii) Loans 632/SF and 631/SF (Rural Roads Subprogram)

- 2.44 The first of these loans was approved on November 20, 1980 to provide partial financing equivalent to US\$5.8 million to repair 132 km of secondary and access roads located in areas hit by Hurricane Allen. Out of a total project cost estimated at US\$6.5 million, authorization was given to use US\$5 million equivalent (US\$4.5 million from the loan resources and US\$500,000 from local funds) to carry out the repairs on force account.

- 2.45 Similar authorization was approved on the same date in the case of loan 631/SF-HA, to finance US\$3.3 million equivalent for the agricultural component of a rural development program designed to improve living conditions for the population in the areas of L'Asile and Coteaux on the southern peninsula. The construction of 179 km of permanent rural roads, which constitutes the other component of the project, is being financed by an EEC grant equivalent to five million units of account, estimated at US\$7 million equivalent on the date of the loan). In this instance, the Bank authorized the use of up to US\$6.5 million equivalent (US\$900,000 of loan resources and the equivalent of US\$5.6 million from the EEC grant) to carry out works on force account.
- 2.46 The rationale behind the use of force account was the relative success achieved in the project financed by AID, cited in paragraphs 2.34 and 2.35. Experience acquired thus far in the execution of this type of operation, however, did not live up to expectations, especially because of the lack of adequate programming methods and organization by the brigade responsible for executing the program. These problems - which were not entirely unexpected, since the "light brigade" system only began to be applied in 1979 - are gradually being solved, and further improvement is expected as a result of the technical assistance provided by AID in its second access roads project.
- 2.47 A start had already been made on the works corresponding to all of the access roads in subprogram A, financed by loan 631/SF-HA, in December 1984. Thereafter, due to devaluation of the European monetary unit (ECU), escalation of program costs, and the shortage of local funding to cover the deficit resulting from the devaluation, the Bank reduced the goals at the executing agency's request. Still later, as a consequence of political events, the project came to a virtual standstill for more than three years, thus compelling the Bank to cancel approximately US\$1.2 million of the loan funds. The program nevertheless succeeded in completing 90% of the works budgeted following the goal reduction.
- 2.48 In the program financed by loan 632/SF-HA, the Bank did not feel it advisable to extend the deadline for final disbursement which expired on April 5, 1989, and it thus proceeded to cancel the undisbursed balance amounting to US\$463,000. Total progress on program works amounted to 80% of the originally scheduled amount, which is considered acceptable, given the political problems from 1986 to the present, which have had a marked effect on execution and continuity of this program.

(b) Activities of other agencies

(i) Agency for International Development (AID)

- 2.49 AID participation in this subsector has concentrated since 1973 on two areas: road construction and maintenance, and rehabilitation of farm access roads. In February 1973, AID approved a US\$3,150,000 loan and a grant of US\$2,050,000 for phase I of the highway maintenance program, whose objective was to finance the purchase of machinery and equipment for road maintenance and provide technical assistance and training for the national highway network's permanent maintenance service (SEPRRN), established in March 1972. In June 1977, another grant of US\$12 million was approved to finance phase II of the program, the purpose of which was to continue the institutional strengthening of SEPRRN and expand its coverage to encompass up to 2,500 km of national and departmental roads.
- 2.50 Construction and repair of farm access roads: to date, AID has granted a loan of US\$5 million and donations amounting to US\$17.4 million under two different agreements. The first, approved in June 1976, called for reconstruction of some 940 km of rural roads throughout the country; the second, approved in June 1982, provided funds for institutional strengthening of TPTC for the repair, construction and maintenance of secondary rural roads and construction of 300 km of rural roads in the southern and northwestern regions in order to provide both farmers and consumers with access to rural commercial centers.

(ii) World Bank (IBRD)

- 2.51 In 1974, the IBRD approved US\$10 million in financing for the Third Transport Project (as indicated in paragraph 2.28, the two previous transport projects were carried out between 1956 and 1962). The objective of the third was to rebuild 250 km of the northern highway and the Estere, Sonde and Limbe bridges. The Fourth Transport Project, established in 1975, contributed supplementary financing of US\$20 million to complete the Third. In 1978, financing of US\$15 million was approved for the Fifth Transport Project, whose purpose was to improve and pave 54 km of roads located in the northern plateau, plus an access road to the port of Jérémie in the south and reconstruction of the bridges over the Hypolite and Trois Rivières rivers. The project also included a coastal transport component, consisting of the construction of terminals at Port-au-Prince, Port de Paix and Jérémie (see paragraph 2.20), at an approximate cost of US\$5.6 million. When completed, those projects cost a total of approximately US\$60.4 million.
- 2.52 The Seventh Transport Project, now in progress, was approved in 1986 and provides financing of US\$18.7 million to repair bridges and drainage structures as a continuation of the Sixth Transport Program. It calls for construction of two major bridges; completion of repairs

on the northern highway; continuation of institutional strengthening; and a study of appropriate measures for repair of the port of Jérémie. The total cost of the program is estimated at US\$24 million.

(iii) Canadian Agency for International Development (CIDA)

- 2.53 Through its DRIPP regional development program (Integrated Rural Development, Petit-Goâve - Petit Trou de Nippes), for the northern part of the southern peninsula, CIDA has provided financing for repair of some 100 km of tertiary roads at an approximate cost of US\$1 million.

(iv) European Economic Community (EEC)

- 2.54 As indicated in paragraph 2.41, EEC participation in development of the highway subsector took the form of a grant equivalent to five million units of account for construction of 179 km of permanent rural roads in L'Asile and Côteaux in the southern peninsula.

(v) Bilateral assistance

- 2.55 In the mid-seventies, the Government of France provided assistance to finance 43 km of roads between Carrefour and Jacmel.

F. Project area

- 2.56 In the framework of the strategy to decentralize productive activity and promote provincial centers outside of Port-au-Prince and its surroundings, the Government of Haiti selected the Artibonite Valley and the central plateau as the chief target areas. ^{1/} The Artibonite Valley covers an area of approximately 45,000 ha and, due to the quality of its soils and favorable climate, is considered as the country's potential bread-basket. To support efforts aimed at making maximum use of its potential, the Bank has thus far approved two operations (loan 473/SF for US\$5 million in August 1976; and loan 690/SF for US\$17.6 million in September 1982), to finance the first and second stages of a project that will rehabilitate the irrigation system and develop agriculture in a total area of 9,000 ha.
- 2.57 The first stage of the project, which is now completed, called for rehabilitation of the present irrigation and drainage structure; conduct of small-scale agricultural activity; and the use of improved and more appropriate farming techniques on some 3,600 ha of the 32,000 that will eventually benefit from irrigation by gravity. The

^{1/} The other important areas are: (i) the northern plateau (38,100 ha); (ii) Cul-de-sac (37,000 ha); (iii) the northwestern plateaus (30,000 ha); and (iv) Cayes and Torbeck (20,000 ha).

second stage calls for rehabilitation of irrigation and drainage infrastructure in an area of approximately 5,400 ha, along with some programs for rural promotion and extension services, the production of improved seeds, and farm credit. 1/

- 2.58 The Bank's financing for the project area was limited to the activities mentioned, but also includes the education and health-care sectors. Pont Sondé is one of the six locations selected for school construction under a comprehensive rural education program partially financed by resources from loans 508/SF-HA and 704/SF-HA. In the field of health, the project area also benefited from construction of rural water supply systems and community health posts built during the first stage of the program financed by resources of loan 609/SF.
- 2.59 Although the central plateau occupies almost 20% (5,390 km²) of the country's area, it is virtually isolated from the rest of the country as is evident from its low population density (100 inhabitants per km²), as compared with the national average of 220 per km². 2/ A study completed in 1980 by the firm of SCET International found that approximately 135,000 of the 536,000 ha in this region are suitable for, or may be adapted to, farming. Recognizing that potential, the government set up an organization (ODBFA) 3/ that would be responsible for planning development in the area and allocated funds to finance a master plan to that end, which was prepared by the French firm JMS International.
- 2.60 Considering that Haiti does not produce enough food to allow most of its population a balanced and nutritional diet, and that food products represent a hefty proportion of all imports (30%), one of the objectives of the 1982-86 development plan was to reduce malnutrition in the short term and provide the basis of achieving the long-term goal of increased food production. To do so, it is believed that 800,000 ha would have to be incorporated into production by the year 2000. This is the reason for concentrating attention on the Artibonite Valley and the central plateau, which together account for 84% (167,000 ha) of the 200,000 ha of land that can be irrigated.
- 2.61 A study conducted between 1976 and 1979 by Lalonde, Girouard, Letendre and Associates (LGL) Ltd. concluded that, on the whole, in addition to their agricultural potential, the two areas mentioned have 75% of the country's water resources. Four locations have

1/ Document PR-1212 of September 14, 1982 contains additional details on this topic.

2/ The population density in ratio to arable land is computed as approximately 700 inhabitants per km².

3/ Organisme de Développement du Bassin Versant Fleuve de l'Artibonite.

already been identified for the construction of hydroelectric projects. Of the four, Guayamouc has a potential generating capacity of 21.7 MW while La Chapelle has a potential 56.6 MW. Both have been the subject of studies financed by the IBRD and the IDB, 1/ respectively.

G. Future IDB action

- 2.62 The Bank is examining the possibility of participating in the National Maintenance Program that would be cofinanced with the IBRD. The program could be approved during the first quarter of 1991. The maintenance subprogram included in the operation under review would serve as a bridge with the one mentioned above to avoid further deterioration of highways currently in very poor condition.
- 2.63 On December 13, 1989, the Board of Executive Directors approved technical cooperation ATN/SF-3407-HA, calling for a feasibility study on a future rural roads program. Approximately 400 km of these roads would be selected through application of pre-established prioritization criteria. The cost of this technical cooperation is US\$850,000 and financing would come from the Japanese Fund.

1/ TC-ATC/TF(SP)1859-HA.

III. THE PROJECT, ITS COST AND FINANCING

A. Characteristics of the Pont Sondé-Mirebalais highway and rural roads

- 3.01 The localities of Pont Sondé and Mirebalais are linked by a road about 74 km long that also passes through several important communities, including Liancourt, Borel, Deschapelles, the A. Schweitzer Hospital, Verrettes, Désarmes, La Chapelle and Carrefour Saut d'Eau, as shown on the map of the project area (Annex I-1). With the many other communities that lie along this road, its service area may be described as densely populated (160 inhabitants/km²).
- 3.02 Over 70% of its length this highway has a gravel and earth surface in a very poor state of repair, which restricts the speed of vehicle traffic to between 5 and 20 km/hr on the usable sections (see chapter VI). The torrential rains of June 1989 severely damaged this highway and some sections are totally closed to vehicle traffic. Rainfall in the area is normally 2,000 mm. The present status of the three sections into which the road can be divided is as follows: (a) the Pont Sondé-Verrettes section - about 21.5 km long and 5 m to 8 m wide, with a gravel surface and poor drainage - is open to traffic at speeds of not more than 20 km/hr for most of the year, except for the rainy season; (b) the 43 km section between Verrettes and Carrefour Saut d'Eau - between 4 m and 5 m wide - unpaved and usable only by four-wheel-drive vehicles, while its poor drainage makes it impassable during the rainy season; owing to this poor drainage, the soil conditions and the vertical alignment, this part of the highway requires maintenance that is extremely difficult and expensive to carry out; and (c) the 9.3-km Carrefour Saut d'Eau-Mirebalais section, which, despite characteristics superior to those of the previously-mentioned section, lacks proper drainage and has to be closed to traffic during the rainy season. The six secondary farm roads in the area are earth trails that are closed to vehicle traffic in the rainy season. In the dry season they are only usable by four-wheel-drive vehicles. A large proportion of products entering or leaving these roads' areas of influence has to be carried by people or mules. The location of these roads is also shown on the map of the project area (see Annex I-1).
- 3.03 It is important to note that the Pont Sondé-Mirebalais highway links National Highways 100 and 300. The first-mentioned runs northward, passing through Pont Sondé and connects the capital, Port-au-Prince, with Cap-Haitien, the country's second city. It is an asphalt-paved highway with adequate geometric characteristics. National Highway 300 runs northward from Croix-des-Bouquêtes, east of Port-au-Prince, passing through Mirebalais and crossing the entire Central Department. It has different geometric characteristics from Highway 100, with tighter curves, steep gradients and insufficient width, but is nevertheless usable year round.

B. Purposes of the project

- 3.04 The main purpose of the project is to provide services, by means of highways and roads that are usable your round, to the communities and production areas in their respective service areas. This would reduce transportation costs, foster higher production and give access to social services. This purpose will be accomplished by upgrading, to departmental highway standard, of the approximately 74-km long Pont Sondé-Mirebalais highway, including two bridges, together with improvement of six rural roads totaling about 66.4 km. The project also provides for a maintenance subprogram to cover part of the present paved and gravel road system that is important for the country's economy but is currently not receiving maintenance owing to limitations in the national budget allocations for this purpose.

C. Description of the project

1. Pont Sondé-Mirebalais highway

- 3.05 The characteristics of this departmental highway 1/ are as follows:

Roadway width	6.0 m
Shoulder width	1.5 m
Steepest gradient <u>2/</u>	8%
Minimum curve radius <u>2/</u>	55 m
Rated speed <u>3/</u>	40-80 km/hr
Right-of-way	20 m
Maximum load/axle	10 tons

- 3.06 The highway would have a mean embankment depth of 1 m, a subbase of selected material 20-30 cm thick, and a gravel base of 15-20 cm, which would be surfaced with a double bituminous coat. The depth of the subbase and base would depend on the terrain along the length of the highway.
- 3.07 The project design includes the construction of two bridges. One 16 m long in the Verrettes-Carrefour Saut d'Eau section, and a 48-m long span across the La Thème river would be of reinforced concrete, and be erected in sections 16 m long and 9.2 m wide, in compliance with local standards which are compatible with international standards.

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- 1/ The standards for departmental highways are similar to those of national highways except that for the latter the width of the roadway is 7 m and that of the shoulders 2 m. Cross-sectional illustrations of these roads are presented in Annex III-1.
- 2/ These features (maximum gradient of 8% and minimum curve radius of 55 m) only occur in one short stretch located 15 km west of Mirebalais. In general, the gradients do not average more than 4% and the minimum curve radius is equal to or greater than 100 m.
- 3/ Eight km/hr in flat terrain, 60 km/hr in rolling terrain and 40 km/hr in mountainous terrain.

- 3.08 In addition, the following culverts would be laid or relaid along the three sections into which the highway has been divided:

	<u>New Culverts</u>	<u>Rebuilt Culverts</u>
1. Pont Sondé-Verrettes - 21.5 km	38	8
2. Verrettes-Carrefour Saut d'Eau - 43 km	87	12
3. Carrefour Saut d'Eau-Mirebalais - 9.3 km	<u>20</u>	<u>3</u>
Total	<u>145</u>	<u>23</u>

- 3.09 According to the design, (a) the culverts would be of reinforced concrete or metal, (b) longitudinal drainage ditches would be dug whenever the gradient required, (c) railings would be installed on the bridges and culverts at all locations where needed, with appropriate signals, and (d) ditch crossings would be provided for access to homes and farms. The alignment of the highway would essentially follow the route of the existing road.

2. Secondary roads

- 3.10 As already noted, the project calls for improvement of six all-weather rural roads totaling 66.4 km. These were selected on the basis of rate of return criteria applied to a total of 12 roads currently impassable in the rainy season. The six roads that offered an economic internal rate of return of 12% and were therefore selected were:

<u>Road No.</u>	<u>Location</u>	<u>Length (km)</u>
1.	Ville Bonheur (Haut Saut d'Eau)-Carrefour Saut d'Eau	6.0
2.	Petite Rivière-Carrefour Peyé	14.6
3.	Gros Chaudière-Dessalines	14.8
4.	Carrefour Cadeau-Bois Jour	12.0
5.	Pont l'Estère-Ti Desdunes	5.0
6.	National Highway 100-Drouin	<u>14.0</u>
	Total	66.4

- 3.11 The present conditions of these roads are as follows:

- Road 1 - Ville Bonheur (Haut Saut d'Eau)-Carrefour Saut d'Eau - This road is 6.0 km long and links two small commercial centers: Ville Bonheur and Carrefour Saut d'Eau. It gives direct access to Port-au-Prince since it connects with the Mirebalais-Port-au-Prince highway. The principal commercial center on this stretch is Ville Bonheur, which is also an important tourist destination in July and August (religious festivals). The agricultural area served by this road is 6,800 ha.

- Road 2 - Petite Rivière-Carrefour Peyre - This 14.6-km road runs parallel to this Pont Sondé-Verrettes highway and links National Highway 100 from Port-au-Prince to the secondary road that connects with the Pont Sondé-Verrettes stretch. It is located in the area of execution of the Bank-financed (Loan 690/SF-HA) irrigation works and serves an area of 4,200 ha.
- Road 3 - Gros Chaudière-Dessalines - This 14.8-km road links two small commercial centers and serves a service area of 15,100 ha. Like Roads 2 and 4, it is located in the area of the Bank-financed irrigation system expansion project. It joins Road 4 at Bois Jour, with which it forms a continuous through route.
- Road 4 - Carrefour Cadeau-Bois Jour - This road is 12 km long and is located in the Artibonite irrigation project area; together with Road 3, it forms an unbroken link with National Highway 100, the main coastal highway running north from Port-au-Prince. The area to be served by this road is 6,600 ha.
- Road 5 - Pont l'Estère-Ti Desdunes - This 5-km road is located north of the Artibonite Valley, along the northern edge of the area of the irrigation works. It provides access from Ti Desdunes to National Highway 100 at Pont l'Estère and serves an agricultural area of 4,500 ha.
- Road 6 - National Highway 100 - Drouin - This 14-km road is in the northern part of the Artibonite Valley. Like Road 5, it runs along the northern edge of the irrigation works and links several commercial areas (Desdunes, Duclos and Drouin) totaling approximately 16,000 ha with National Highway 100.

3.12 These roads would have the following characteristics:

Roadway width	5.0 m
Shoulder width	1.0 m
Maximum gradient	10%
Rated speed	20-60 km/hr
Right-of-way	15 m
Maximum load/axle	10 tons

3.13 The design of these roads calls for surfacing 10-15 cm deep with selected gravel over compacted fill of variable elevation. All the roads would have reinforced-concrete or metal drainage culverts and roadside ditches. Since Roads 2-6 cross smooth terrain in the Artibonite river delta, selected materials would have to be hauled from other areas 5 to 20 km away.

3. Maintenance subprogram

3.14 The purpose of this subprogram would be to prevent the increasing deterioration of part of the paved and gravel road system observed in recent years, by performing periodic or deferred maintenance of the highest priority roads prior to the entry into effect of the national

road maintenance program now being prepared by the World Bank and for which IDB participation has been requested. This periodic maintenance is the maintenance that should be carried out every six years or so and is designed to return the roads to a condition such that they will only need routine maintenance to remain in as-built condition. This type of maintenance generally includes major repairs such as surface sealing or replacement of broken drainage structures. The financing for the latter program is expected to be approved in the first quarter of 1991, so that physical execution could possibly be started in the third quarter of that year. The deterioration referred to has been due to budget constraints that have seriously restricted maintenance of the road system.

- 3.15 The work that would be financed under this subprograms would be the basic tasks included in periodic or deferred maintenance. The roads eligible for inclusion in the subprogram would be those built with adequate technical specifications and characteristics and which, at the same time, would be destroyed if their maintenance were deferred any longer. Four activities to be financed have been identified, together with the annual coverages for each of them, viz.:

<u>Activity</u>	<u>Year I</u> <u>(km)</u>	<u>Year II</u> <u>(km)</u>	<u>Year III</u> <u>(km)</u>	<u>Total</u> <u>(km)</u>
1. <u>Paved roads</u>				
(a) <u>Pavement resealing</u>	-	15	25	40
(b) <u>Reshaping of shoulder</u>	-	30	50	80
2. <u>Gravel roads</u>				
(a) <u>Reshaping</u>	130	90	50	270
(b) <u>Replacement of wearing</u> <u>course (10 cm)</u>	70	50	30	150

- 3.16 This subprogram would be financed as follows: the loan funds would be used for the procurement of fuel and materials (gasoline, lubricants, asphalt, gravel, sand, etc.), while the local counterpart or funds from other sources would finance the additional labor costs and would make available the necessary equipment duly repaired with the maintenance services and parts needed for the scheduled work to be properly performed.
- 3.17 Besides the basic activities noted that the Bank would finance, the borrower will have to carry out the rest of the activities necessary for completing the periodic maintenance and restoring the roads to a condition that will allow for routine maintenance. These additional activities will include at least the following: reshaping or digging of ditches; repair or reconstruction of culverts; surface patching, clearing of shoulders and protection of slopes by planting suitable trees or shrubs. The borrower would also undertake, as part of the subprogram, to put in appropriate signs and road markings. As the subprogram would be executed by fiscal years or annual plans, the financing of the subprogram would be conditional upon the activities

scheduled for each section of the system and the degree of target achievement being acceptable to the Bank. In other words, before the disbursements for each fiscal year are approved, the Service d'Entretien Permanent du Réseau Routier National (SEPRRN) would submit for approval by the Bank the work plan to be carried out for that year and a report showing the degree to which the targets set for the preceding year, in terms of coverage and quality, had been met. Should the Bank consider the performance in that year unsatisfactory, it would reserve the right not to continue financing this subprogram with the loan funds.

D. Alternatives considered

- 3.18 The consultants examined the possible alternatives that would affect the cost and timely execution of the project, the future usefulness of the highway and its maintenance. The study to select the alignments for the Pont Sondé-Mirebalais highway and the rural roads has determined that the least-cost alternative is to follow the present alignment of the highway and of the existing roads. The studies show the least-cost road widths and characteristics, and also analyze the option of dividing the work stages and the feasibility of postponing application of the asphalt double bituminous treatment of the highway surface. On the basis of the investment and maintenance costs of the alternatives studied, it has been concluded that the most advantageous option would be to apply the double bituminous coat at the time of execution of the project.

E. Design criteria

- 3.19 The design and specifications of this project are based on acceptable engineering standards that are recognized by the Bank and other international organizations, such as:

The Ministry of Public Works, Transportation and
Communications of Haiti (MTPTC)
The American Association of State Highway and
Transportation Officials (ASSHTO)
The American Society of Testing Materials (ASTM)
The American Concrete Institute (ACI)
The Government of Quebec Ministry of Transport.

- 3.20 For the design of the bridges a load equivalent to ASSHTO standard HS-20 was adopted, which is compatible with the future traffic.

F. Cost and financing of the project

1. Cost of the project

- 3.21 The total cost of the project, estimated at US\$49.5 million equivalent, is presented in the following, broken down by investment categories and sources of financing:

(In US\$ thousands)

<u>Category</u>	<u>Local Contrib.</u>			<u>Total</u>	<u>%</u>
	<u>IDB</u>	<u>OPEC</u>	<u>Gvt.</u>		
1. <u>Engineering and administration</u>	<u>3,760</u>	<u>270</u>	<u>-</u>	<u>4,030</u>	<u>8.1</u>
1.1 Studies	1,560 ^{1/}	-	-	1,560	
1.2 Administration	-	200	-	200	
1.3 Supervision	2,200	70	-	2,270	
2. <u>Direct costs</u>	<u>29,023</u>	<u>3,454</u>	<u>-</u>	<u>32,477</u>	<u>65.6</u>
2.1 Pont Sondé-Mirebalais highway	24,077	600	-	24,677	
2.2 Rural roads	3,446	234	-	3,680	
2.3 Maintenance subprogram	1,500	2,200	-	4,700	
2.4 Acquisition of land	-	420	-	420	
3. <u>Finance charges</u>	<u>1,518</u>	<u>200</u>	<u>376</u>	<u>2,094</u>	<u>4.2</u>
3.1 Interest	1,073	200	-	1,273	
3.2 Commitment fee	-	-	376	376	
3.3 Inspection and supervision	445	-	-	445	
4. <u>Unassigned</u>	<u>10,199</u>	<u>626</u>	<u>74</u>	<u>10,899</u>	<u>22.0</u>
4.1 Contingencies	3,119	250	74	3,443	
4.2 Escalation	7,080	376	-	7,456	
TOTAL	<u>44,500</u>	<u>4,550</u>	<u>450</u>	<u>49,500</u>	<u>100.0</u>
Percentages	89.9	9.2	0.9	100.0	

3.22 The project costs estimated as of November 30, 1989 are based on calculations made by the consultants and the Transportation Directorate, applying the unit prices on that date to the quantities of work for the designs and plans, which are 100% complete. The costs have been examined by the Bank and found reasonable and in line with the corresponding costs of similar works recently executed in Haiti. The paragraphs that follow summarize the principal investment categories in the table on cost and financing of the project.

^{1/} The ATC/TF(SP)-1911-HA funds used for the purpose.

(a) Engineering and administration (US\$4.03 million)

(i) Studies

- 3.23 The amount under this heading consists in the reimbursement of US\$1.56 million from technical cooperation ATC/TC(SP)-1911-HA provided on a contingent-recovery basis, the proceeds of which were used to make the studies, including final designs and bidding documents for the project.

(ii) Administration

- 3.24 The amount in the equivalent of US\$200,000 covers the operating costs and remunerations of the incremental administrative personnel of the executing unit, who would be specifically assigned to the project on a full-time basis during the period of its execution. These costs would be entirely financed out of the local counterpart funds to a possible OPEC loan.

(iii) Supervision

- 3.25 The cost of supervising the project is estimated at the equivalent of US\$2.27 million, about 8% of the direct construction cost. These services would cover assistance to the Transportation Directorate in the Ministry of Public Works in matters relating to the evaluation of bids, supervision of construction, and support to the executing unit. These activities would be entrusted to a firm that would be selected in due course from among firms widely experienced in the supervision of construction works of the type envisaged in the project. The contract with the firm selected would be a typical contract for the supervision of works of the kind called for in this project.

(b) Direct costs (US\$32.477 million)

- 3.26 The amount of the total Direct Costs for the project, in the equivalent of US\$32.5 million, includes (a) the cost of building the Pont Sondé-Mirebalais highway (US\$24.7 million), (b) the cost of the six rural roads (US\$3.7 million), (c) the maintenance subprogram (US\$3.7 million), and (d) land purchase (US\$0.4 million), which the executing agency will have to do with local counterpart funds in order to obtain adequate right-of-way for the highway and the rural roads. About 210 ha will have to be expropriated for this purpose, at an estimated average cost of US\$2,000 per hectare. The unit cost of the Pont Sondé-Mirebalais highway is about US\$334,377/km, which is within the ranges of other projects recently financed by the Bank. The cost of the highway breaks down by sections as follows:

	<u>Length (km)</u>	<u>Total cost US\$</u>	<u>Cost/km US\$</u>
1. Pont Sondé-Verrettes	21.5	5,515,750	256,546
2. Verrettes-Carrefour Saut d'Eau	43.0	15,657,640	364,131
3. Carrefour Saut d'Eau-Mirebalais	<u>9.3</u>	<u>3,503,610</u>	<u>376,732</u>
Total	<u>73.8</u>	<u>24,677,000</u>	<u>334,377</u>

3.27 The reason for the differences among the costs of the different sections is essentially differences in soil characteristics. Drainage works, the construction of a bridge, and the realignment of about 14 km will generate a relatively larger portion of the cost in section 2. Section 3 requires drainage works and the construction of a bridge. The direct costs of two bridges (16 m and 48 m long) are US\$269,042 and US\$575,192, respectively.

3.28 The direct cost of the rural roads are as follows:

	<u>Length (km)</u>	<u>Total Cost US\$</u>	<u>Cost/km US\$</u>
1. Carrefour Saut d'Eau-Bonheur (Haut Saut d'Eau)	6.0	314,510	52,418
2. Petite Rivière-Carrefour Peyre	14.6	780,820	53,480
3. Gros Chaudière-Dessalines	14.8	678,470	45,843
4. Carrefour Cadeau-Bois Jour	12.0	641,855	53,488
5. Pont l'Estère-Ti Desdunes	5.0	273,445	54,689
6. National Highway 100-Drouin	<u>14.0</u>	<u>990,900</u>	<u>70,788</u>
Total	66.4	3,680,000	55,421

3.29 The foregoing figures are considered reasonable, being similar to the cost per km of the roads built with loans 631/SF-HA (cofinanced with EEC agreement 21/NA-HA-79) and 632/SF-HA in the southern peninsula and those of the secondary roads for which contracts were awarded more recently.

3.30 The cost of the maintenance subprogram is estimated at US\$3.7 million, US\$900,000 of which would be used to procure a stock of parts (see list in Annex III-3). The targets and annual and total expenditure figures for each of the activities are presented in the following table:

Activity	Total Length (km)	Year I (US\$000)	Year II (US\$000)	Year III (US\$000)	Total (US\$000)	%	Cost /km (US\$) 1/
1. <u>Paved roads</u>							
a) Pavement resealing	40	-	375	630	1,005	23.4	25,100
b) Shoulder reshaping	80	-	400	670	1,070	24.9	13,400
2. <u>Gravel roads</u>							
a) Reshaping	270	470	315	185	970	22.6	3,600
b) Replacement of wearing course (10cm)	150	<u>610</u>	<u>410</u>	<u>235</u>	<u>1,255</u>	<u>29.1</u>	8,400
Totals		1,080	1,500	1,720	4,300	100.0	
		=====	=====	=====	=====		
Percentages		25.0	35.0	40.0	100.0		

1/ The breakdown of the unit costs is presented in Annex III-4.

3.31 The Bank has reviewed the costs for each of the activities listed above and finds them acceptable and consistent with the costs recorded in the execution of similar work performed recently.

(c) Finance charges (US\$2.094 million)

3.32 The sum of US\$2.094 million has been allocated to cover finance charges, including interest (US\$1.073 million), and commitment fee (US\$0.376 million) during the project construction period, in accordance with the investment schedule. The figure includes 1% of the loan amount (US\$0.445 million) to cover the cost of inspection and supervision by the Bank. In addition, interest at US\$0.2 million on the possible OPEC loan has been included.

(d) Unassigned (US\$10.899 million)

(i) Contingencies

3.33 This item has been set at US\$3.443 million, or about 10% of the cost of construction and supervision. This amount covers unforeseen cost increases during execution of the project which might be generated by such factors as a delay in execution of the project, abnormal weather conditions and other causes. The 10% proportion is regarded as adequate to cover these contingencies inasmuch as the studies, plans, designs and specifications are 100% complete.

(ii) Escalation

3.34 To provide against the need for adjustments due to possible increases in the cost of equipment, materials, fuels and labor during the period of execution, US\$7.456 million is provided, which is about 21%

of the costs for construction, supervision of construction, administration and contingencies. The inflation of prices in foreign exchange and local currency has been calculated using the Bank's param (Country Studies Division - DES). These adjustment param have been applied to the scheduled investments on the basis of the construction and investment timetable.

2. Financing

(a) Proceeds of the loan

3.35 As indicated in the table for the cost and financing of the project, the Bank's contribution would come to US\$44.5 million or 89.9% of the total cost of the project, in foreign exchange from the Fund for Special Operations.

3.36 The possible loan of the Bank would be subject to the following terms and conditions:

- | | |
|--|--|
| (i) Source of funds: | Fund for Special Operations (FSO) |
| (ii) Disbursement period: | 5 years |
| (iii) Amortization period: | 40 years |
| (iv) Interest: | 1% a year during the grace period and
2% a year during the amortization
period |
| (v) Commitment fee: | 0.5% of the undisbursed balance of the
loan |
| (vi) Inspection and
Supervision Fund: | 1% of the loan amount |
| (vii) Grace period: | 10 years |

(b) Local counterpart funds

3.37 The local counterpart funds would be derived from: (i) the proceeds of an OPEC loan (US\$4.55 million), and (ii) contributions by the Haitian Government (US\$450,000).

(i) OPEC funds

3.38 OPEC has stated its interest in granting the Haitian Government a loan of US\$4.55 million to partially finance the direct construction costs and other costs connected with the Pont Sondé-Mirebalais highway and the rural roads together with part of the direct costs of the maintenance subprogram.

(ii) Haitian Government contributions

3.39 The local contribution of US\$450,000 equivalent would finance part of the Bank commitment fee and contingencies in the amounts shown in the table in paragraph 3.21. The loan contract would establish the obligation on the part of the borrower to provide the funds needed for execution of the project and would include the usual stipulations guaranteeing the availability of those funds when needed.

IV. EXECUTION OF THE PROJECT

A. The executing unit

- 4.01 Execution of the project would be entrusted to the executing unit, which would be established in the Ministry of Public Works, Transportation and Communications (Ministère des Travaux Publics, Transports et Communications - MTPTC). The administrative and financial posts in the unit, that is, the accountants and bookkeepers, would be held by MTPTC personnel, and the secretarial and support personnel would be additionally hired. The technical posts would be filled with a total of four engineers, two of them Haitians on the staff of the Transportation Directorate, and the other two - a chief engineer and an assistant - provided by the consulting firm to be hired to supervise the construction. The latter two persons will have broad experience in the management of projects of this type. The duties of the chief engineer would be essentially those of co-manager of the executing unit. The structure proposed differs from that of the unit established for the southern highway project (loan 365/SF-HA), in which the technical functions were entrusted chiefly to the consulting firm and the financial and administrative aspects were handled within the Ministry's organization structure. The performance of that unit was not entirely satisfactory, which has prompted a broadening, as described in what follows, of the functions to be assigned to the new unit, whose establishment and the appointment of whose staff would constitute a condition precedent to the first disbursement. 1/
- 4.02 The functions of the executing unit would be as follows: (i) to coordinate, supervise and monitor all aspects of the project; (ii) to prepare, present and verify all documentation concerning the investments and the technical, administrative, financial, legal and economic data on the project that the Bank may require; (iii) to oversee fulfillment of the conditions and obligations stipulated in the loan contract; (iv) to reformulate and adjust the Program Execution Plan (PEP) whenever needed; (v) to keep current information on the physical progress of the project; (vi) to promote coordination among all the units of the Transportation Directorate for proper execution of the project; (vii) to maintain contacts with other public agencies in matters of interest to the project, and (viii) to keep the General Directorate informed on the progress and development of the project. With these functions, it is felt that the executing unit would be vested with the independence needed to conduct the project from the technical, administrative and financial standpoints, which would eliminate shortcomings encountered in the execution of other projects financed by the Bank.
- 4.03 The MTPTC has acquired experience in the organization and establishment of executing units in three transportation projects financed in part by the Bank as well as by other financing agencies.

1/ See Proposed Resolution

- 4.04 The maintenance subprogram would be executed by the Transportation Directorate through its Maintenance Service (SEPRRN). The SEPRRN would also be responsible for preparing the annual works programs in detail for approval by the Bank. No major problems are anticipated in the preparation of these programs, since the SEPRRN has everything needed, i.e. data on the state of the roads, availability of labor, machinery and equipment and unit costs broken down by activities to be carried out. In addition, the SEPRRN has extensive experience in execution of similar works and possesses trained technical personnel and the equipment and machinery necessary to perform the work included in the subprogram.

B. Technical supervision and control

- 4.05 Since the Transportation Directorate has no technical personnel available, a consulting firm would be hired to supervise construction of the works called for in the project. As mentioned before, in addition to supervising the construction work, the consulting firm would provide the services of two engineers who would constitute the technical part of the executing unit and report directly to the director of the executing unit. The enterprise will have to have prior experience in the supervision of projects of this kind, and its job will be to monitor the quality of the work and to verify the quantities of materials and costs, together with compliance with the stipulations of the engineering plans and of the general and technical specifications.
- 4.06 Since personnel of the consulting firm would be part of the staff of the executing unit, and the establishment of this unit would be a condition precedent to the first disbursement, the hiring of the firm would also be a prerequisite for the first disbursement. This approach would guarantee the availability of the technical services to assist the Transportation Directorate in the bidding process from the prequalification of contractors and evaluation of bids to the signing of the construction contract. For reviewing the quantities, construction costs, specifications and bidding documents and to assist the MTPTC in issuing calls for bids and awarding construction contracts, the MTPTC will have to hire the consultants one month before calling for bids from the already prequalified contracting firms. ^{1/} The procedures for selection of the firm and the specific conditions for supervision of the construction and administration of the project are described in Annexes IV-1 and IV-2 to this report.
- 4.07 The supervision and technical oversight of the works to be carried out under the maintenance subprogram would be the responsibility of the SEPRRN. However, the supervision consultants would review the scheduled annual activities, including the quantities and values of fuel and materials to be procured for each section of road to be worked on during each fiscal year, would make a quarterly audit of purchases made in the preceding quarter and would verify the use of the fuels and materials in the activities carried out, together with

^{1/} See Proposed Resolution.

the physical progress of the works during the period. All this information must be included in a quarterly progress report to be submitted by the consultants, together with the data referred to further on, and would serve as a basis for quantifying the local contribution. The Field Office would, in its turn, review and approve the activities scheduled and executed, recommending whether disbursement on this component should be continued or not. In addition, the Field Office will require the executing agency to forward the specified quarterly progress data, which must include the machine hours worked by type and category together with the man-months used in the progress reported, per section of each road, by activity and broken down into skilled and unskilled labor. These data will serve as a basis for quantifying the local contribution and checking the ratio of progress to costs incurred and the use of the materials procured, especially fuels and asphalt.

C. Studies, designs and specifications for the project

- 4.08 The studies and designs were entrusted to a consortium of international and domestic consulting firms whose chief engineers are widely experienced in the design of roads of the types called for in this project.
- 4.09 The road projects have all the final studies, including the bidding documents, soil studies, topographical and geologic surveys, soundings and foundation studies for both the highway and the rural roads. Hydrologic and hydraulic studies have also been done to determine the peak flows and widest beds of the river and streams, and the highest and lowest stages that can be expected over a 50-year period. These studies also determined the total length of the bridges, the size and types of the culverts and the protection against erosion for foundations, embankments and buttresses.
- 4.10 The final plans and specifications for the Pont Sondé-Mirebalais highway and the rural roads are complete, and have been examined by the Bank, which found them satisfactory and suited for determining the cost of the project, the invitation for bids, and the scheduling of construction.
- 4.11 As regards the maintenance subprogram, the Haitian authorities have prepared the annual activities taking into consideration the state of the roads, the priorities on the basis of traffic carried and the specific tasks that would be financed by this item. The preparation of the annual activities would not present any major problems of a technical nature and the SEPRRN would submit them through the MTPTC in detailed form, annually, for review and approval by the Bank. To ensure the sound and timely execution of the subprogram, the loan contract includes the obligation for the MTPTC to submit for approval by the Bank, within 90 days of signature of the contract, the detailed program for Year I. For the subsequent years, monitoring and planning would be by means of the reports and procedures described in paragraph 3.17.

D. Procurement procedure

- 4.12 In the acquisition of equipment, materials and other goods required for the project and in contracting for works financed entirely or in part with resources of the Bank, the system of contractor prequalification and international public bids would be used in all cases in which the value of the procurement exceeds the equivalent of US\$200,000. This procedure will be basically similar to the one agreed upon with the Government of Haiti for other construction projects, which is described in Annex IV-3 of this report. The project will be executed under contracts with building firms of broad experience with works of the type envisaged. When OPEC funds are used to finance construction of the highway, the Bank's international public bidding procedures will be used, which are acceptable to that organization.
- 4.13 The works would be contracted for in a single international public bidding operation for the following groups:

Group 1 Pont Sondé-Mirebalais Highway Length (km) Cost (US\$)

Pont Sondé-Verrettes section	<u>21.5</u>	<u>5,515,750</u>
Verrettes-Carrefour Saut d'Eau-Mirebalais section	<u>52.3</u>	<u>19,161,250</u>
Subtotal	73.8	

Group 2 Secondary roads

(1) Carrefour-Saut d'Eau-Ville Bonheur	<u>6.0</u>	<u>314,510</u>
(2) Petite Rivière-Carrefour Peyé	<u>14.6</u>	<u>780,820</u>
(3) Gros Chaudière-Dessalines	<u>14.8</u>	<u>678,470</u>
(4) Carrefour Cadeau-Bois Jour	<u>12.0</u>	<u>641,855</u>
(5) Pont l'Estère-Ti Desdunes	<u>5.0</u>	<u>273,445</u>
(6) National Highway 100-Drouin	<u>14.0</u>	<u>990,900</u>
Subtotal	66.4	

- 4.14 For the purposes of prequalification and subsequent bidding, the following prequalification arrangements will be considered: For Group 1 only; for Groups 1 and 2; for Group 1 and part of Group 2; for Group 2 only; and lastly, for just part of Group 2. This will enable national contractors to bid on the works for which they have the right equipment, machinery and experience, which should ensure that construction will proceed in accordance with the execution schedule. At the same time, by permitting the works to be combined the contract or contracts would be large enough to attract international construction firms and obtain favorable conditions in terms of economy and efficiency.

E. Construction methods

- 4.15 The type of construction envisaged does not require the use of methods that are particularly complex or not entirely familiar to

road-building contractors, who will be required to provide all needed equipment and materials. Since the ground studies and designs have been completed, no technical problems that might interfere with timely execution of the project are expected.

- 4.16 All materials needed for highway, road and bridge construction can be obtained in Haiti except for some steel sections, metal pipe for culverts, explosives and some materials for signaling. It would be the contractors' responsibility to provide the equipment, materials and labor needed for execution of the works.
- 4.17 The contractors would use as much local labor as is economically possible, especially in the building of the local roads. However, for all the projects it will be necessary to use equipment for hauling materials (gravel, earth) and for compacting subbases, crushing gravel, etc. Intensive use will be made of manual labor for clearing work areas, digging ditches, stonework, and the like. The contractors would have the option to use labor-intensive methods whenever this would not negatively impact on the quality of the work, raise costs, prolong the construction period or take people from important agricultural work of greater economic value.

F. Rights-of-way

- 4.18 As noted in Chapter III, additional rights-of-way and other land will have to be acquired. About 70% of this land is state land and the other 30% is privately owned. Haiti's law of September 5, 1979 on expropriation in the public interest permits the Government to take possession of land once it has been declared to be in the public interest and upon payment of compensation fixed by a special commission. According to information from the MTPTC, the mechanism that would be used for expropriating the necessary land would be the following: (i) once the financing for construction of the highway has been obtained, the MTPTC, after engaging the consultants, would conduct contractor prequalification and simultaneously declare the land concerned to be in the public interest; (ii) the land in question would then be staked out, the parcels to be expropriated would be calculated together with the compensation to be paid based on the value of adjoining land, and the respective payment would be made.
- 4.19 If the owner does not agree with the amount set, the case must be taken to an assessment panel, whose decisions may only be appealed in the country's Court of Appeals. Even in this situation, the MTPTC may occupy the land and start the works while negotiations on the amount of compensation payable are proceeding.
- 4.20 According to the MTPTC, no problems are expected in obtaining the necessary land in the project under consideration. This opinion is based on the current legislation that enables the MTPTC to take possession of the required land as soon as the decree on expropriation in the public interest is issued, plus the fact that a large part of the land in question is state owned. However, to avoid any

difficulties that might arise in securing the land for rights-of-way, it is recommended that the loan contract stipulate that the Government shall submit to the Bank, before calling for bids or before commencement of the works if any other procedure is followed, evidence that it has legal possession of the land on which the project roads are to be built, or evidence that it possesses the rights thereto (see recommendations).

G. Capital gain, land value appreciation tax, and tolls

- 4.21 A decree of 28 September 1981 establishes a tax on the difference between the price at which a good or a right is bought and that at which it is sold. This tax is imposed on every individual or body that sells a movable or immovable good. The rate is 10% and is imposed on the taxable capital gain, an amount that is obtained by the procedure established in the law. For this tax to be due, two conditions are required: (i) the owner must sell the good, and (ii) the good must be sold for more than the price at which it was purchased. This procedure would be applied in the present project. Haiti has no legislation for taxing land betterment to recover public investments, which indicates that no revenue would be recovered under this heading. However, Haiti is currently considering introducing highway user fees (in a system similar to tolls), to augment availability of funds for the maintenance, rehabilitation and construction of the road system. This is discussed in paragraphs 5.41 and 5.42.

H. Execution period and investment schedule

- 4.22 Based on the preliminary project execution plan (PEP), the execution period is estimated at five years (Annex IV-4). Actual construction of the Pont Sondé-Mirebalais highway and the six rural roads is expected to take four and a half years. About six months would be needed for hiring the consultants to supervise the works and assist the MPTC in preparing the bidding documents, contractor prequalification procedures, bid evaluation and contract award, and negotiation and signature of the construction contracts. As already noted, the maintenance subprogram would be implemented over a three-year period by means of three annual plans. The investment schedule calls for the total funds to be applied as follows: Year I, 25%; Year II, 35%; and Year III, 40%. The SEPRRN would subsequently continue and expand these activities (see paragraphs 2.62 and 3.14).
- 4.23 The preliminary project execution plan, which is classified as specific in nature, includes: (i) the plans for the legal, financial, institutional and technical operations, and (ii) the investment operations and programs, with indication of the critical path. The preliminary plan includes the activities that would be carried out from the scheduled loan approval date through completion of the works and submission of the final report to the Bank. The final project execution plan would be submitted to the Bank before the first disbursement from the loan and would constitute the basic instrument for monitoring of its execution by the Bank, the borrower and the executing agency.

4.24 It is envisaged that the following activities would be carried out prior to the start of construction: (i) negotiation and signature of the loan contract with the Bank; (ii) negotiation and signature of a loan contract (cofinancing) between OPEC and the Haitian Government; (iii) signature of a contract with the consulting engineers for supervision of the construction and of the maintenance subprogram; (iv) contractor prequalification and call for bids on the construction contracts; (v) fulfillment of the conditions precedent to the first disbursement; (vi) negotiation and signature of the construction contracts, and (vi) mobilization and commencement of the works.

4.25 The project execution schedule is summarized below:

(In US\$ thousands or equivalent)

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Total</u>	<u>%</u>
IDB loan	6,633	10,153	11,475	8,082	8,156	44,500	89.9
OPEC loan	683	910	1,138	910	910	4,550	9.2
Local contribution	<u>200</u>	<u>100</u>	<u>80</u>	<u>50</u>	<u>20</u>	<u>450</u>	<u>0.9</u>
Total	<u>7,516</u>	<u>11,163</u>	<u>12,693</u>	<u>9,042</u>	<u>9,086</u>	<u>49,500</u>	<u>100.0</u>
Percentages	15.2	22.6	25.1	18.3	18.4	100.0	

I. Advance of funds

4.26 To provide the borrower with the funds needed to finance the various activities to be carried out with resources of the Bank, authorization is recommended for the establishment of advances from the possible loan for up to 10% of its amount. This arrangement would make resources available for timely fulfillment of the various obligations that would arise in connection with the requirements generated by execution of the project.

J. Maintenance of the project

4.27 Over the past four years maintenance expenditures have diminished in real terms. The secondary system is in very bad shape, but certain paved roads could be restored to an adequate level by means of periodic and intensive maintenance. Moreover, the paved Port-au-Prince-Pont Sordé-Gonaives road is still in a state acceptable for traffic. Between Gonaives and Cap Haitien, however, it has deteriorated to such an extent that it is being rebuilt with World Bank financing. The Southern Highway, between Léogâne and Les Cayes, financed by loans 365/SF-HA, 365(A)/SF-HA and 365(B)/SF-HA, has been maintained in an acceptable state up till now.

4.28 The consultants estimated the following annual maintenance costs for the types of roads proposed, which were reviewed by the Bank and found reasonable. These estimates are based on the type of road

surfaced and projected annual average traffic. The cost of routine maintenance and the frequency of periodic maintenance would rise with increasing traffic; however, for preparing the estimates the following annual values were considered: 1/

<u>Pont Sondé-Mirebalais highway</u>	<u>US\$/km/year</u>
Routine maintenance (annual)	2,200
Periodic maintenance every 6 years (US\$31,800/km)	5,300
<u>Rural roads</u>	
Routine maintenance (annual)	3,900
Periodic maintenance every 6 years (US\$12,600/km)	2,100

- 4.29 Maintenance of the Pont Sondé - Mirebalais highway would be the responsibility of the SEPRRN, while that for the rural roads would be contracted to community groups, under the supervision of the SEPRRN which would provide the necessary materials and equipment. This procedure comes under the MTPTC's Community Action Maintenance Program. Taking the SEPRRN's experience into account together with the training and technical assistance provided by the World Bank, it is considered that the Service would have the technical and administrative capacity to maintain the project works in an adequate fashion. During the construction period, the contractors will have to maintain the sections of the highway and the rural roads built by them until all the works have been completed and are approved and accepted by the MTPTC.
- 4.30 In order to ensure proper maintenance of the project works, including the roads covered by the maintenance subprogram, the Transportation Directorate would submit to the Bank for approval, at least three months before the start of each fiscal year and for a period of ten years after completion of the construction or the periodic maintenance and opening of the highway and rural roads to traffic, an annual maintenance plan with evidence that the funds required for this purpose are available. This plan would include an assessment of the state of the highway and roads, the physical maintenance activities carried out, the funds invested in the previous fiscal year and the funds budgeted for these activities in the next fiscal year. 2/
- 4.31 The annual maintenance plan, referred to in the preceding paragraph and described in Annex A of the prospective loan contract, will include at least the details on the organization responsible for that

1/ Routine maintenance consists of annual cleaning of the ditches and culverts, surface patching and repair of signs and railings, etc. Periodic maintenance comprises application of bituminous seals on the surfaces of the paved roads every six years, and resurfacing with compacted gravel every six years for the rural roads.

2/ See Recommendations.

maintenance; the personnel that will carry it out; the number, types and state of repair of the equipment to be used for the purpose; the location, size and condition of the repair, storage and maintenance facilities, etc.; the nature of the controls by which it is proposed to restrict the size and weight of the vehicles using the highway and the several roads; and the physical activities per kilometer of highway and of each road in the project.

- 4.32 The plan must show (i) the amount of funds invested in maintenance during the preceding year, (ii) the amount of funds available in the maintenance budget for upkeep of the highway and roads covered by the program during the current year, and (iii) the funds requested in the budget for the year for which the plan is submitted.
- 4.33 The plan will also include a report on the state of repair of the highway and roads based on a sound evaluation system that must have been previously submitted to the Bank and approved by it. This system will be structured to provide an overall classification of the state of repair of the highway and roads, which assessment will be based on a numerical evaluation of the various components, such as pavement roughness and deflections, condition of crossings, gutters, culverts, drainage structures, bridges, etc.
- 4.34 The Bank will be entitled to inspect the highway and roads at intervals. In the event of its being determined by inspection or on the basis of reports that the maintenance is being carried out below the agreed standards, the borrower must take the necessary steps to fully rectify the shortcomings.

K. Supervision by the Bank

- 4.35 The Bank would oversee the progress and execution of the project, including the maintenance of the roads during the 10-year service period, through its Field Office in Haiti.

L. Ex post evaluation

- 4.36 For purposes of preparing the socioeconomic effects of the project, at the end of the third year from the date of the last disbursement of the financing, the Transportation Directorate would have to submit to the Bank an ex post evaluation report with the following information on the Pont Sondé-Mirebalais highway and the six rural roads:
- (a) Information on traffic: (i) a traffic count by types of vehicles carried out over a period of not less than seven days for the Pont Sondé-Mirebalais highway and three days for the rural roads; (ii) average speed per type of vehicle; (iii) the data needed for calculating the operating costs of the different types of vehicles; (iv) surveys of trip origins and destinations for vehicles using the Pont Sondé-Mirebalais highway; (v) the average number of passengers per type of vehicle; (vi) rates for the transportation of freight and passengers, and (vii) volumes and type of freight.

- (b) Socioeconomic information: (i) maintenance costs, (ii) agricultural production for each product in the service area of the project, and (iii) on-farm production costs, including inputs, and average farm-gate prices for these products.
 - (c) The ex post evaluation report mentioned above shall include:
 - (i) the cost-benefit analysis to be performed by the same methodology used for the ex ante analysis, on the basis of user savings and agricultural benefits; (ii) a justification of the data used and details regarding any substantive changes to the designs, delays in construction, and discrepancies between actual costs and costs originally projected; and (iii) the distributive impact of the project on low-income sectors, based on the methodology used for the ex ante analysis.
 - (d) Environmental information: this should include an analysis of the impacts that the project might have on the environment, both negative and positive. If any negative impact is found, its cause and the steps taken to correct it must be explained.
- 4.37 The traffic count referred to in paragraph 4.36(a)(i) above must be forwarded to the Bank by the executing agency every year, starting with the year in which the highway and the roads are opened to traffic. If necessary, the Bank could in due course consider the possibility of providing financing in support of the ex post evaluation referred to in the preceding section.
- M. Environmental impact
- 4.38 Both the designs and the specifications have taken the possible negative environmental impact that the project might have into account, so everything has been done to minimize this impact. Such negative environmental impact can only happen during the construction stage since, as explained further on, once construction is completed the works will have a positive impact on the environment. This is because the highway and roads will follow the routes of the existing roads, without any deviation, across flat or slightly rolling country and no large cuts or fills will be needed. In addition, measures have been taken to ensure that the construction work causes the least possible damage to the plant cover on the slopes below the roadways. The specifications and bidding documents require the contractors to protect the slopes by grass seeding and to replace trees and vegetation damaged during construction.
- 4.39 The pits for construction materials (gravel, etc.) are open, in use and near the works, so that no additional type of damage is expected to be caused by activities of this kind.
- 4.40 The land occupied by the contractor in connection with the work and the entire work area will be cleared of all trash, excess materials, temporary structures, plan and equipment. After completion of all bases, surfacing or paving included in the contract, all drainage

structures, culverts and other drains are to be cleaned and any buildup of extraneous matter removed, and the specified maintenance work performed.

- 4.41 The design and location of the camps and their sanitary facilities will be such that they do not cause any pollution of surface or underground waters.
- 4.42 The contractor will be required to carry out the work in a manner that will reduce to a minimum any soil erosion due to earth moving. Special care is to be taken in places where sedimentation caused by erosion could have an adverse effect on rivers, canals or reservoirs. If for any reason the contractor(s) have to suspend operations for a considerable time, steps shall be taken to shape the roadway such that rainwater will run off with a minimum of erosion. If it is considered necessary, the contractor(s) shall build dikes, put in drainage or take other temporary erosion-control measures and maintain same until such time as the final works are completed.
- 4.43 The specifications and preventive measures to alleviate and control erosion are included in the technical specifications (engineering) for construction of the highway and rural roads to be financed with the loan funds. These specifications would, in due course, be submitted to the Bank for final approval. It is recommended that it be made a condition precedent to commencement of the bidding process that the borrower, through the executing agency, shall submit to the Bank's satisfaction evidence that the construction specifications included in the prospective contracts maintain the preventive measures to alleviate and control damage to the environment. 1/
- 4.44 After completion of the construction work, once the roads are in use, an improvement in the environmental situation can be expected due to the upgrading and construction of two bridges, culverts and drainage ditches, which will lessen the present risk of stagnant water buildup and flooding, thereby also reducing the health risks for the communities in the region.
- 4.45 The population of the program area is 160/km², all of whom are engaged in agriculture. No increases in settlement in the area or significant changes in land tenure structure are therefore expected.

1/ See Recommendations.

V. THE BORROWER AND THE EXECUTING AGENCY

A. Introduction

- 5.01 The borrower would be the Republic of Haiti. The Ministry of Public Works, Transportation and Communications (MTPTC) would be responsible for executing the project. It would do this through an executing unit to be organized within the Road Construction Service of its Transportation Directorate.

B. Institutional Analysis

1. Legal system, functions and organizational structure of the executing agency

- 5.02 The MTPTC is a public law agency governed by its own organic law, dated October 18, 1983. The functions of this public agency are to: ensure the study, planning, execution, maintenance and evaluation of physical infrastructure associated with urban and rural facilities, highways, ports and airports, telecommunications systems and water systems, as well as setting urban development regulations and technical construction standards. The maximum authority of the MTPTC is the Minister of State, who is assisted by a Secretary of State and a cabinet of advisors. 1/
- 5.03 The executive functions of the MTPTC are in the hands of the Director General who directs, analyzes, coordinates and controls the technical and administrative activities of the Ministry. The Director General is assisted by three support offices: the Secretariat, the Financial Records Unit, and the Office of the Coordinator of Technical Units. The Director General assigns executive functions to four central units and five regional units.
- 5.04 The central units are composed of three operational directorates (public works, transportation and communications) and an administrative directorate.
- 5.05 Each regional directorate has a structure similar to that of the General Directorate of the Ministry. In other words, under each of the Regional Directors is a substructure composed of three operating units -- public works, transportation and communications -- and an administrative unit.
- 5.06 The Transportation Directorate (DDT), which would be responsible for project execution and maintenance, is responsible for studying, planning, executing and supervising works and maintaining the primary and secondary routes of the national roads system. DDT is composed of four advisory offices and the following services: Planning and

1/ See MTPTC organizational table in Annex V-1.

Studies, Road Construction, Vehicle Weight Control, and Maintenance. 1/ All of these services except Vehicle Weight Control are organized at the regional directorate level.

5.07 The structure of the MTPTC is complex, leading to problems of coordination between the Ministry's services and its central units. Moreover, the Ministry's guiding function (that of establishing policies, strategies, and plans for the sectors under its jurisdiction) is not clearly defined. At the Ministry's request, the World Bank is considering the provision of technical assistance for an institutional reorganization of the MTPTC. The assistance would cover, inter alia, the following areas: (i) a review of the Ministry's overall structure and a clarification of its role (policy, planning, and operations) in the sectors under its jurisdiction; (ii) reinforcement of the existing administrative systems, especially those pertaining to the areas of accounting, budget, auditing and programming and economic evaluation of investments; and (iii) analysis of the feasibility of privatizing maintenance activities and the impact of such action on the organization of the MTPTC and its services. The MTPTC is also preparing a request to the Bank for technical cooperation in updating the National Transportation Plan, including the development of an investments program for the sector.

5.08 DDT staff. The Directorate had the following staff as of December 1989:

	Direc- torate	Planning and Studies	Road Construc- tion	Weight Con- trol	SEPRRN	Total	
						No.	%
Professionals	13	28	31	2	64	138	6.2
Administrative	11	8	45	10	171	245	11.0
Accountants and Assistants	4	3	7	1	11	26	1.2
Technicians	-	9	77	25	438	549	24.7
Laborers and Others	<u>8</u>	<u>7</u>	<u>105</u>	<u>-</u>	<u>1,146</u>	<u>1,266</u>	<u>56.9</u>
Total	<u>36</u>	<u>55</u>	<u>265</u>	<u>38</u>	<u>1,830</u>	<u>2,224</u>	<u>100.0</u>

5.09 The size of the staff of the Road Construction Service fluctuates according to the number of projects under way. Thus, for instance, in 1985, a year of heavy activity, its staff numbered 715, whereas the total given above for SEPRRN includes 867 regular employees and

1/ See DDT organizational table in Annex V-2.

963 day laborers. Owing to financial constraints in recent years, the staff of SEPRRN has diminished considerably since 1986, when the unit had 1,320 regular employees and some 2,200 day laborers. The number of employees in the other services of the DDT has not changed substantially in recent years.

2. Road Construction Service (SCR)

- 5.10 The SCR is responsible for execution and supervision of all road projects within the national road system. It has an Administrative Division and two Technical Sections, Primary Roads and Secondary Roads.
- 5.11 The SCR organizes its technical activities under executing units, one for each project, while its accounting activities are centralized within its Administrative Division. Following these general lines, the SCR would organize an executing unit for the project discussed in this document (see Chapter IV). It should be noted that at the time of the analysis mission (December 1989) the SCR had only three projects under way that were scheduled for completion during 1991.

3. The Permanent Maintenance Service of the National Road System (SEPRRN)

- 5.12 The SEPRRN is responsible for the programming and budgets of maintenance plans as well as execution of their operations, including equipment maintenance. As can be observed in the organization table in Annex V-3, SEPRRN includes the following sections: Technical, Administrative, and Accounting.
- 5.13 Maintenance operations, are organized under six districts and five subdistricts and are performed by a total of 51 brigades, including 40 brigades for routine maintenance, nine brigades for pavement repairs, and two brigades for bridge maintenance. The number of brigades has diminished significantly since 1986, when the SEPRRN had a total of 140, while the total road system to be maintained has grown.
- 5.14 In addition, SEPRRN conducts the Community Action Maintenance Program (CAMP) through which it contracts with several communities for routine maintenance of approximately 700 km of roads. Under this program, SEPRRN provides the necessary tools and materials as well as a foreman to supervise local crews. The communities assigned sections of road receive a compensation of US\$1,144/km per year.
- 5.15 As of December 1989 the fleet of equipment consisted of 678 units (see Annex V-4), of which 150 units were in service, 230 were in need of repairs, and 298 needed to be withdrawn from service because of their poor condition.

5.16 Historically, the SEPRRN's maintenance expenditures have been financed from two sources: Haiti's budget of current outlays, to cover the unit's salary costs, and AID/PL480 funds, channeled through the investments budget, which have been used to finance purchases of maintenance materials and supplies. From FY 1983 to FY 1989 the annual contribution from the former source remained relatively constant within a range of GD\$19 million to GD\$22.5 million (current gourdes), whereas over the same period the annual contribution from the investments budget dwindled from approximately 12.5 million current gourdes in FY 1983 to less than one million current gourdes in FY 1989. This drop was due to progressively smaller shares of AID funding, which was terminated in FY 1986. As a result of this funding decline, approximately 95% of the total amount of resources allocated to SEPRRN was used to cover salaries in 1988 and 1989.

5.17 Statistics on maintenance expenses for the last three fiscal years, are given in the following table:

Maintenance expenses and expansion of maintained road system
(In thousands of US\$ of September 1989)

	<u>Fiscal year</u>		<u>Fiscal year</u>		<u>Fiscal year</u>	
	<u>1987</u>		<u>1988</u>		<u>1989</u>	
	<u>km</u>	<u>\$</u>	<u>km</u>	<u>\$</u>	<u>km</u>	<u>\$</u>
Routine maintenance						
Paved highway	609	1,284.0	589	1,030.8	575	1,300.0
Unpaved road	1,853	1,712.0	1,404	1,953.0	1,530	1,800.0
Periodic maintenance						
Paved highway	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -
Unpaved road	300	<u>2,407.5</u>	280	<u>2,278.5</u>	92	<u>700.0</u>
Total cost		<u>5,403.5</u>		<u>5,262.3</u>		<u>3,800.0</u>

5.18 As the preceding table shows, maintenance expenses in constant values held steady for the first two years (at approximately US\$5.4 million) and then fell by approximately US\$1.6 million to US\$3.8 million in 1989. In comparison, the annual expenses of SEPRRN over the previous three years (1984-1986) ranged from US\$6 million to US\$7.5 million. The table also reflects the facts that no periodic maintenance of paved highways was done and that the funds were used primarily for payment of salaries (see paragraph 5.15) under the heading of routine maintenance.

5.19 SEPRRN estimates that the funds needed for adequate maintenance of the road system in FY 1990 would be approximately US\$12 million, compared with a SEPRRN budget of US\$3.8 million for the same year, 94% of which is allocated to salaries. This indicates that the condition of the interurban roads has reached a critical point.

Indeed it is felt that a number of costly investments have begun to deteriorate for want of road-infrastructure maintenance. To help the government address this problem, the Bank and the IBRD are working together at this time on a joint proposal of operations aimed primarily at preserving the value of the capital investment in road infrastructure. As stage one for 1990, the IBRD would allocate US\$7.5 million for maintenance operations to be carried out by means of contracts with communities and private firms. As a second stage, the Bank would help to institute a periodic maintenance subprogram as part of the project under consideration. This subprogram, modest in scope, has been designed with two purposes in view: (i) to help give priority to maintaining and promoting the use of existing machinery and equipment at SEPRRN which is currently lying idle for lack of material and fuel, which would be financed under the project, and (ii) to supply bridge financing pending approval of the Rehabilitation and Maintenance Program mentioned below.

- 5.20 The Rehabilitation and Maintenance Program is a project recently requested of the World Bank by the Government of Haiti. The request includes US\$70 million for rehabilitation and maintenance of interurban roads and US\$50 million for rehabilitation and maintenance of streets in Port-au-Prince. At the present time the Bank is exploring the possibility of cofinancing jointly with IBRD a first stage with a cost of US\$75 million. If the IDB and World Bank support materializes, the maintenance of both interurban roads and urban streets would be approached on a comprehensive basis.

C. Financial Administration

- 5.21 Although the MTPTC maintains a central accounting service under the Administrative Directorate in order to supervise and control financial functions and provide global accounting information for the Ministry, this service actually handles the accounting for only a part of the operating expenses. This situation is due to weak organization and coordination within this service. DDT has its own financial office under the Administrative Directorate. Its job is to keep the accounting for the Directorate's operating expenses and then forward the results to the Central Accounting Office of the Ministry. This function is performed only partially because of coordination flaws between the two offices. Furthermore, the information on investment outlays is scattered throughout the directorate's various sections. There is no one unit systematically maintaining global information on these expenditures.
- 5.22 The solution to the shortcomings described above is included in the IBRD technical assistance (paragraph 5.07) which would help to strengthen the financial administration systems of MTPTC.
- 5.23 In addition to its aforementioned financial unit, each service of the DDT has an accounting office. In the case of the Planning Service and the Vehicle Weight Control Service, these offices are small units

engaged almost entirely in keeping records on budget items. In the Road Construction Service, which would bear the responsibility for the project's execution, the accounts are kept by individual project and are centralized under the financial control office. The accounting system is organized in keeping with the requirements of the financing agencies, including the Bank's, and satisfactorily maintained.

1. Internal audit

- 5.24 The Organic Law of the MTPTC assigns the Financial Control Unit, under the General Director, the work of internal audit as well as financial analysis. Actually, however, this unit does not conduct internal audits because it does not have the necessary expertise. Operation 795/5F-HA, the Port-au-Prince Storm Drains Project, includes a provision to engage the services of a consultant who, in addition to other activities, would lay the foundation for this work within the ministry.

2. External audit

- 5.25 The MTPTC is subject to external audit by the Superior Court of Accounts, which in practice restricts itself to reviewing payment vouchers.
- 5.26 The financial statements of projects financed in part by the IDB are reviewed by a firm of certified public accountants acceptable to the IDB. This firm has issued clean reports in recent years. For the project under study, the recommendation is that its annual financial statements be submitted within 120 days of the close of each fiscal year and that they be audited by a firm of certified public accountants acceptable to the IDB.

D. Historical Budget Analysis 1/

1. Comparison of DDT, MTPTC and the Central Government expenses

- 5.27 The resources available to the MTPTC to pay for its current and capital expenses come from government budget allocations. The table presented below compares the amounts spent by DDT, MTPTC and central government in the last three fiscal years.
- 5.28 As concerns the following table, it should be noted that, because of the difficulties mentioned in paragraph 5.21, the figures on MTPTC capital expenditures are budget estimates.

1/ All the amounts in this section are expressed in U.S. dollars of September 1989. The exchange rate used was 5 gourdes to the U.S. dollar. The years presented are fiscal years, which end September 30.

(In thousands of US\$)

<u>Central Government</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>
Current expenses	270,196	262,353	259,020
Capital expenses	<u>125,639</u>	<u>104,030</u>	<u>77,600</u>
Total	<u>395,835</u>	<u>366,383</u>	<u>336,620</u> <u>1/</u>
<u>MPTC</u>			
Current expenses	16,209	13,020	13,421
Capital expenses <u>2/</u>	<u>11,600</u>	<u>11,322</u>	<u>3,849</u>
Total	<u>27,809</u>	<u>24,342</u>	<u>17,270</u>
<u>DDT</u>			
Operations	693	685	979
Maintenance	<u>5,404</u>	<u>5,262</u>	<u>3,800</u>
Total current expenses	6,097	5,947	4,779
Capital expenditures	<u>9,925</u>	<u>9,983</u>	<u>2,297</u>
Total	<u>16,022</u>	<u>15,930</u>	<u>7,076</u>

Percentages

MPTC/Central Government

Current expenses	6.0	5.0	5.2
Capital expenditures	9.0	10.9	4.9
Total	7.0	6.6	5.1

DDT/MPTC

Current expenses	37.6	45.7	35.6
Capital expenditures	85.6	88.2	59.7
Total	57.6	65.4	41.0

1/ Preliminary figures.

2/ Estimate.

- 5.29 The share of DDT current expenses in total MTPTC current expenses dropped from 46% in 1988 to 36% in 1989. This was due to the decline in funds for maintenance. In turn, DDT capital spending accounted for approximately 88% of MTPTC capital outlays in the first two years and declined to 60% in 1989. This decline was due to a reduction in AID funds, the completion of project 632/SF-HA, and to completion, in some cases, delays in execution in others, of components the World Bank-financed Transport Program. Overall, the share of DDT in MTPTC outlays was in the range of 41% to 65%.
- 5.30 The decline of investments in the DDT was reflected in its share in the public investments allotted to the MTPTC, which fell from approximately 10% in the first two years to 5% in the third.
- 5.31 DDT's current expenditures held at around US\$6 million in 1987 and 1988 and then dropped to US\$4.8 million in 1989 because of the reduction in funds for maintenance. Its current expenditures were financed by the public treasury.

2. DDT capital expenditures and their financing

- 5.32 DDT capital expenditures for the last three years were as follows:

(In thousands of US\$)

	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>Total</u>	
				<u>\$</u>	<u>%</u>
IDB projects in execution	1,546.0	290.8	- 0 -	1,836.8	8.3
Projects, other international agencies	7,617.6	9,634.0	1,865.4	19,117.0	86.1
Other projects	<u>761.1</u>	<u>57.8</u>	<u>431.9</u>	<u>1,250.8</u>	<u>5.6</u>
Total, capital expenditures	9,924.7	9,982.6	2,297.3	22,204.6	100.0
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- 5.33 IDB projects represented 8% of all road investment during the period. 1/ The investments for projects financed by other international agencies (primarily the World Bank's Transport Program and the AID Secondary Roads Development Project) accounted for 86% of the total while investments using national resources constituted the remaining 6%.

1/ The projects are: (i) the Roads Subprogram of the Rural Development Program for the Southern Peninsula (631/SF-HA); and (ii) the Access Roads Rehabilitation Project (632/SF-HA).

- 5.34 The relationship of spending to budget and spending ranged between 68% in 1988 and to 28% in 1989. The low level of execution in the latter year was owed to the fact that the budget included works of the IBRD Seventh Transport Program that were not started that year.
- 5.35 Capital expenditures were financed out of national funds, which included resources from the Public Treasury and the AID/PL-480 program, as well as resources drawn out of international loans. The following is a breakdown of the financing for DDT capital expenditures during the period 1987 to 1989.

(In thousands of US\$)

	1987	1988	1989	Total	
				\$	%
Haitian Public Treasury	1,524.4	673.0	1,650.2	3,847.6	17.3
PL-480 Program	3,974.4	- 0 -	188.1	4,162.5	18.7
National Resources	5,498.8	673.0	1,838.3	8,010.1	36.0
IDB Loans ^{1/}	1,196.3	187.0	- 0 -	1,383.3	6.3
Other loans	3,229.6	9,122.6	459.0	12,811.2	57.7
External Resources	4,425.9	9,309.6	459.0	14,194.5	64.0
Total Financing	9,924.7	9,982.6	2,297.3	22,204.6	100.0

- 5.36 During the period in question, DDT capital expenditures were financed on the average to the extent of 36% with national resources and 64% with external resources. The PL-480 program financed 52% of the total financed by national resources. With public treasury funds the government contributed an average of US\$1.3 million a year to the investment programs. The Bank, for its part, contributed 10% of the external resources, which was 6% of the total amount of investment financing.
- 5.37 Annual financing out of national resources fell from US\$5.5 million in 1987 to US\$1.8 million in 1989. This reflected lower investments in IDB, IBRD and USAID projects because those projects have come to an end. It also reflected the fact that some work scheduled for 1989 under the World Bank-financed project was not accomplished that year.

3. Tax revenue for the road sector

- 5.38 The following table shows revenue from several taxes and charges paid by road system users during fiscal 1989.

^{1/} Includes EC resources for the program 631/SF-HA, Roads Subprogram, Southern Peninsula Rural Development Program.

In thousands of US\$

Consumption of petroleum products (January - August)	\$34,888.9
Transit of vehicles	3,582.4
Customs duties: vehicles and spare parts (estimate)	<u>9,000.0</u>
Total	<u>\$47,471.3</u>

- 5.39 Although total tax revenues are four times the amount needed to finance satisfactory maintenance of the road network (estimated at present at US\$12 million), it is important to note that these funds go directly into the General National Treasury and are not being used for such maintenance.
- 5.40 In addition, it is inferred from a study done by outside consultants 1/ that the government does not recover all costs incurred by revenue raised through charges to users of the road system. For instance, in the area of customs duties the study indicates that owing to duty-free concessions or false declarations the government recovered only 70% of potential revenues in 1982. In another example, the report mentions that in the area of vehicle transit there were 22,000 licensed drivers in 1983, while the number of vehicles that year was 37,000. According to the study, in 1985 the government could have received an additional US\$16 million if collection of taxes and fees had been at 100%. Inasmuch as the area of road-user taxes and fees is one that affords an opportunity to increase the amount of funding for the highway sector, the government is planning to perform a study on alternative sources of financing for a National Highway Authority (NHA). This matter is discussed in the following paragraph.

4. National Highway Authority

- 5.41 At the time of the Analysis Mission (December 1989), a decree establishing an autonomous highway agency, the NHA, was ready for approval by the cabinet. According to the decree, this agency would collect highway user fees (under an arrangement similar to a toll system) for use in the maintenance, rehabilitation and construction of the highway network. A second decree, being prepared, would set the level of the fees.
- 5.42 Establishment of NHA was an outgrowth of the government's concern with the need to ensure the availability of certain funds for maintenance and investment in the highway sector. However, preparation of the two decrees was not accompanied by studies to examine, for

1/ Analyse des charges aux usagers de la route en Haiti, April 1984.

instance, appropriate sites for collection booths, the level of required investments, and operating costs, income projections, alternative revenue sources, organization, etc. Given this situation and the opportunities for additional revenues mentioned in the preceding paragraph, the MTPTC would commission a study that would include an assessment of the various alternatives for financing the fund to be used by the NHA for highway maintenance, rehabilitation and construction. Such a study would be one of the first activities under the Rehabilitation and Maintenance Program referred to in paragraph 5.20.

VI. JUSTIFICATION OF THE PROJECT

A. Technical Feasibility

- 6.01 The project analysis leads to the conclusion that this project represents the best technical solution to provide adequate transportation conditions in the area of influence and that, as recommended, it is feasible from the technical-operational standpoint. The considerations presented below relate to those conclusions:
1. Adequate standards and methods, following acceptable engineering practices, were used to design the project.
 2. The estimated project cost is reasonable since it was determined from computations of construction costs for volumes of work corresponding to the final designs at unit prices comparable to the prices included in recent contracts for similar works. In addition, appropriate measures have been taken for cases of contingencies and for construction price increases during the period in question.
 3. The tentative execution timetable is considered realistic since all the studies, designs and specifications for the project are now complete.
 4. The civil works would be executed through contracts awarded to private contractors on the basis of bids meeting IDB requirements. No problems are foreseen in hiring foreign firms, either those associated with interested local firms or not, or local contractors for rural roads, because the works and the amounts to be awarded would be large enough to ensure a high level of participation by local businesses.
 5. The designs of the roads included in the project are adequate, considering the current and projected volumes of traffic.
 6. It would not be necessary to use sophisticated methods in this construction and, as a result, no technical problems that might have a negative impact on timely execution of the project are expected.
 7. No environmental damage is envisaged during construction. Indeed, the environment is expected to have undergone an improvement by the time the projects are completed, thanks to the protection provided for gradients and the expansion of drainage facilities (sewers, bridges, ditches, etc.) for accommodating and disposing of the stagnant water, erosion runoff, and floodwater that are currently manifesting themselves with some degree of frequency.

B. Institutional viability

- 6.02 Experience already gained with the DDT (Transportation Directorate) in the course of three projects partially financed by the Bank, shows that the executing-unit system has worked well from the administrative and accounting standpoints. This system would continue with the project under consideration, although it would be strengthened, as in the past, by hiring a consulting firm specializing in technical supervision of projects. In addition, given the limited number of investments in the DDT (paragraph 6.6), the Bank's project would require no execution capacity over and above the capacity already installed at the DDT. At the same time, remedies for the administrative shortcomings in the MTPCT are covered by the technical assistance mentioned in paragraph 5.7.
- 6.03 In light of the above, it is estimated that sufficient execution capacity and accounting and financial management capacity will be available for the project under consideration.

C. Financial viability

- 6.04 This chapter is intended to analyze the feasibility of the local counterpart for the project, seen in the context of planned and prospective investments in the road and highway sector.
- 6.05 A review of the DDT's planning system, conducted during the analysis mission, revealed a lack of planning and a failure to arrange projects in order of priority. The most recent transportation plan prepared by outside consultants dates back to 1975, and has not been updated. As noted in paragraph 5.7, the Haitian Government is planning to present the IDB with a request for technical cooperation for the MTPCT, to include the execution of an investment program for the road and highway sector.
- 6.06 For all of these reasons, the DDT currently has just three projects ^{1/} and various prospective studies, scheduled for execution during 1990 and 1991. These projects and studies have a total cost of US\$12.6 million, of which the Government will contribute US\$2.1 million over two years, a contribution well in keeping with recent historical experience (paragraph 5.36). In principle, this shows that the projects in execution will require no further financial outlays from the General Treasury of the Nation which could affect the level of counterpart resources for the project under consideration.
- 6.07 Local counterpart for the project under consideration amounts to US\$5.0 million of which US\$4.55 million, will come from a loan from

^{1/} These projects are: Seventh Transport Program partially financed by the World Bank and the EEC; Pont Bretonne and Rehabilitation of Secondary Roads, financed with local resources.

OPEC and the difference (US\$450 million) from the GDH (Haitian Government). In this connection, it is recommended that prior to the disbursement of the prospective loan, the borrower be required to submit to the IDB the loan contract signed by OPEC. 1/

- 6.08 Counterpart funds from the Government of Haiti (US\$450 thousand) will be disbursed over a period of approximately five years, i.e., US\$90 thousand per year. This latter amount represents five percent of contributions for capital outlays made by the Haitian Government in 1989. Given the level of these requirements and the release of local funds attributable to the 1991 completion of the projects for investment in the DDT, it is possible to predict that these counterpart funds will be duly provided.

D. Socioeconomic viability

1. Methodology

- 6.09 The methodology used to evaluate the Pont Sondé-Mirebalais highway is principally based on an approach that emphasizes quantifying the savings for users of the highway. The following principal benefits have been taken into consideration: (i) savings in vehicle operating costs; (ii) elimination of the detour through Port-au-Prince for vehicles traveling between Pont Sondé and Mirebalais; and, (iii) savings in users' travel time.
- 6.10 For analysis purposes, two particular segments were taken into consideration on account of their differential traffic patterns - an approach which has enabled the project to be optimized. The two segments in question were as follows:

I. Pont Sondé - Verrettes	21.5 kilometers
II. Verrettes - Mirebalais	<u>52.3 kilometers</u>
Total	73.8 kilometers

- 6.11 For purposes of evaluating benefits, the chosen benchmark scenario was that the road would be kept in its present condition for the duration of the analysis period (20 years). This working hypothesis represents a conservative position in terms of evaluating benefits, inasmuch as the road is now in such poor condition that normal maintenance operations are practically impossible. Unless the road is rehabilitated promptly, vehicle traffic will be impossible, which would be very costly to Haiti.
- 6.12 In the case of secondary roads, the chosen evaluation methodology consists of quantifying savings attributable to the reduction in operating costs of nonagricultural traffic vehicles, and the net value added of agricultural output, basically due to production increases brought about by lower input prices at the farm gate, and higher output prices, also at the farm gate.

1/ See Proposed Resolution.

- 6.13 The present socioeconomic analysis was based on a feasibility study prepared by consultants, updated and adjusted during the analysis mission.

2. Pont Sondé-Mirebalais Highway

(a) Costs

(i) Construction and maintenance costs

- 6.14 The estimated costs of the project in terms of direct costs, physical contingencies (11 percent), and administration (14 percent), were corrected to express them in economic values, by eliminating transfers in respect of taxes. In addition, a conversion factor of 0.37 was used for adjustments to the cost of unskilled labor.

- 6.15 As explained earlier, normal maintenance operations are unfeasible given the present state of the road. However, just to maintain the road in its present condition (benchmark position for calculating vehicle operating costs) over the twenty years of the analysis period, it would be necessary to effect periodic repairs the costs of which would be very hard to evaluate. These repair costs could range from US\$2,000 per kilometer to US\$14,000 per kilometer, depending on rainfall and the type of repairs required. For analysis purposes, a very cautious hypothesis was used in which these costs would be equal to the "with project" maintenance costs, i.e., US\$5,900 per kilometer in economic values.

(ii) Choice of road surface

- 6.16 With respect to the choice of wearing course, a comparison was made between a double surface treatment and a gravel surface, by comparing investment, maintenance, and vehicle operating costs for each option. This analysis has shown that the double surface treatment is clearly the more economical option for the first road segment. For the second segment, the two options are evenly matched. Bearing in mind the danger that effective maintenance of the gravel segment, which is more complex and equipment-intensive, will fall well short of recommended practices, which would be reflected in increased vehicle operating costs, it is considered advisable to adopt the double surface treatment option for the second road segment as well.

(b) Benefits

(i) Existing and projected traffic

- 6.17 Traffic volume estimates are based on origin and destination surveys and counts conducted by the Transportation Directorate. The figures, duly adjusted to take account of seasonal variations, and local and partial traffic on the road segments, are those provided in detail in Annex VI-1 and summarized below:

Average daily traffic for the year - 1987

<u>Vehicle type</u>	<u>Segment I</u>	<u>Segment II</u>
Cars	14	3
Four-wheel drive vehicles	42	8
Passenger transport vehicles	68	1
Trucks	<u>114</u>	<u>22</u>
Total	238	34

- 6.18 Comparisons of trends in the volume of traffic between Pont Soudé and Verrettes show practically zero growth in demand over the period from 1987 to 1989. This is attributed to the poor condition of the road on this particular section. Bearing this in mind, the 1987 traffic level was used as the basic traffic level for purposes of projecting anticipated traffic in the first year of the project analysis period (1991). Sensitivity calculations show that a sharp decrease in this traffic level has no significant impact on the conclusions concerning the project's economic rate of return.
- 6.19 As regards traffic forecasts, provision has been made for an average annual increase of five percent, which is both conservative and comparable with growth rates actually achieved in earlier projects.
- 6.20 For purposes of evaluating the volume of traffic generated, demand elasticities were estimated in relation to changes in the operating costs of vehicles. Use was made of the elasticity coefficients 1/ calculated by SETEC, in the study for the rehabilitation of the Port-au-Prince/Mirebalais highway (1982). In addition to generating traffic on account of reduced operating expenses, the project would result in a change in the mix of vehicles using the newly improved highway. In fact, the improvement and upgrading of the highway would afford access to light vehicles, "tap taps", 2/ and mini buses, while the proportion of jeeps and passenger trucks would diminish, as was the case with the Jacmel highway. 3/ There would also be an increase in truck cargo, with a sharp reduction in operating costs per ton/kilometer, and hence a reduction in haulage charges. This changing pattern would be most significant between Verrettes and Mirebalais, since use by light vehicles without four-wheel drive and large trucks is exceedingly difficult and sometimes impossible.
- 6.21 At present, vehicles traveling between Port-au-Prince and the communities of Desarmes and la Chapelle along the highway have to take a much longer route, through Port Soudé, given the very poor condition of the road between these communities and Mirebalais. This

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- 1/ The elasticities applied to each traffic category were as follows: Private cars, $e = 3.5$; public passenger vehicles, $e = 2.2$; trucks, $e = 1.0$.
- 2/ Small cargo trucks adapted for passenger transport.
- 3/ Source: "Ex post evaluation of the Dufor-Jacmel highway."

also helps to explain the low traffic levels recorded in 1987 between Mirebalais and Verrettes. It is anticipated that such vehicles (mainly trucks) will pass through Mirebalais once the project is opened up to traffic, thereby avoiding a detour which represents an additional journey of 70 kilometers. In the same way, the cargo vehicles traveling between the Central Plateau and the major markets of Gonaives and Saint Marc will be diverted along the project's highway, thereby avoiding a detour through Port-au-Prince and decreasing the travel distance by 82 kilometers.

(ii) Savings in vehicle operating costs

- 6.22 Vehicle operating costs were calculated by taking account of conditions both on the existing road and on the project, using the pertinent subroutine of the HDM-3 model (Highway Design and Maintenance Standards Model). All costs at market prices were corrected in order to express them in economic terms (border prices), eliminating revenue transfers, principally taxes. The basic average operating costs per vehicle-kilometer are shown in the following table.

Unit economic costs of vehicle operation
(US\$/km)

	<u>Without project</u>		<u>With project</u>
	<u>Segment I</u>	<u>Segment II</u>	<u>Both segments</u>
Car	0.85	1.20	0.28
Jeep	0.61	0.93	0.18
Pick-up	0.70	1.09	0.21
Tap tap	0.63	0.96	0.19
Mini bus	0.93	1.29	0.35
Auto bus	1.89	2.68	0.73
Passenger truck	1.26	1.82	0.45
Light truck	0.81	1.51	0.30
Heavy truck	1.83	2.60	0.71

(iii) Time savings

- 6.23 Most public transport users are farm producers who travel to markets to sell their own goods and to make purchases, which is why these passengers' time has a value related to the opportunity cost in agricultural production. It should be noted that unemployed persons and low-income farm laborers are not included in the evaluation of travel time savings since such persons do not generally use vehicular transportation. At the same time, the travel time saved in the presence of unemployment is additional time spent unemployed, to no productive economic purpose. In addition to the benefits resulting from the time savings due to the change in vehicle operating speed (the variables and values used to calculate these savings are given in Annex VI-2), the project will also make it possible to reduce waiting times for public transport and will improve the quality and

regulation of public transport services. Actually, the poor condition of the existing road surface means that owners of public transport vehicles have no desire to do business and provide services for communities along the highway. Based on surveys conducted in the region, it has been estimated that passengers have to wait approximately three hours for a public transport vehicle to arrive. However, this additional benefit has not been quantified.

(c) Cost-benefit analysis

6.24 Given below are the economic internal rate of return (EIRR) and the net present value (NPV) discounted at 12 percent, in respect of the economic costs and benefits for the two separate segments and the project in its entirety. These indicators attest to the economic feasibility of the project.

DISCOUNTED VALUES
(in thousands of US\$)

I. <u>Costs</u>	<u>Segment I</u>	<u>Segment II</u>	<u>Total</u>
Investment	4,672	15,793	20,465
II. <u>Benefits</u>			
Savings in operating costs	13,911	10,470	24,381
Time savings	3,963	566	4,529
Diverted traffic savings	-	8,148	8,148
Maintenance savings	-	-	-
III. Total net present value	13,202	3,391	16,593
IV. Economic internal rate of return	30%	14%	19%

6.25 An analysis was carried out to determine the optimal year for commencement of the project. This analysis showed that delays would not be advisable.

(d) Sensitivity analysis

6.26 The principal results of the sensitivity analysis are given in the table below and show that the project's economic return poses no major risks. Road segment II, given its heavier burden in terms of construction costs, approaches marginal status while remaining within the realm of acceptability.

Sensitivity analysis

	<u>Economic internal rate of return</u>	
	<u>Segment I</u>	<u>Segment II</u>
Basic case	30%	14%
Investment cost +20%	27%	11%
Savings in operating costs -20%	28%	13%
Time savings -100%	26%	13%
Volume of traffic, base year -30%	24%	12%
Volume of traffic generated -20%	29%	13%
Construction period, one more year	30%	12%

3. Secondary roads

- 6.27 Based on the consultant's study, 1/ from among the 12 secondary roads studied in the Artibonite valley (163 kilometers), the six roads were chosen that display an economic rate of return in excess of 12 percent. The economic evaluation of these six roads is given below.

(a) Construction and maintenance costs

- 6.28 As in the case of the Pont Sondé-Mirebalais highway, the costs at market prices were corrected to convert them into economic prices by eliminating taxes and adopting 0.37 as a conversion factor for the cost of unskilled labor.
- 6.29 The same corrections were made for the purpose of expressing the economic maintenance costs. It is estimated that the current maintenance costs of the existing roads are minimal, to such an extent that the costs that the rehabilitated roads are estimated to require are basically incremental upon the existing zero costs.

(b) Benefits

(i) Existing and projected traffic

- 6.30 Traffic volumes were evaluated on the basis of counts conducted by the MPTC, applied in particular to passenger vehicles and volumes of production and agricultural inputs in the areas affected by the highways. Presented below is the average daily traffic for the year for each road in 1993, the year in which the roads will be opened. The estimates for cargo vehicles are intended for reference only, and were made on the basis of cargo projections for agricultural inputs and products.

1/ "Etude de la Route Pont Sondé-Mirebalais-Hinche et des routes secondaires agricoles dans la Vallée de l'Artibonite" - 1982 ("Study of the Pont Sondé-Mirebalais-Hinche highway and the secondary agricultural roads in the Artibonite Valley" - 1982.)

Average daily traffic for the year - 1993

	<u>Road 1</u>	<u>Road 2</u>	<u>Road 3</u>	<u>Road 4</u>	<u>Road 5</u>	<u>Road 6</u>
Passenger vehicles						
Private	22	12	17	8	9	10
Public	7	31	53	19	20	21
Cargo vehicles	<u>26</u>	<u>11</u>	<u>10</u>	<u>7</u>	<u>7</u>	<u>8</u>
Total	55	54	79	34	36	39

6.31 The annual rate of growth in traffic has been estimated at 2.5 percent per annum for all vehicles, taking account of production projections based on the ODBFA's 1/ targets for agricultural output increases in the areas affected by the roads in question. This rate is a little higher than the annual rate of population growth, and significantly less than other growth rates recently achieved on Haitian highways. The evaluation made no allowance for benefits in terms of generated traffic of nonagricultural vehicles.

(ii) Savings in vehicle operating costs

6.32 Vehicle operating costs were calculated in the same way as for the Pont Sondé-Mirebalais highway, in accordance with the surface conditions of the roads. The average vehicle operating costs are given in the following table:

Unit economic costs of vehicle operation
(US\$/kilometer)

	<u>Without project</u>						<u>With project</u>
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	
Passenger vehicles							
Private	0.82	0.71	0.66	0.82	0.82	0.82	0.38
Public	1.11	0.90	0.77	1.11	1.11	1.11	0.53
Cargo vehicles	1.00	0.81	0.70	1.00	1.10	1.10	0.44

(iii) Agricultural benefits

6.33 All the roads in the project are located in the Artibonite valley where the government agency ODBFA is in charge of agricultural development. The poor condition of the roads poses a major obstacle to ODBFA's efforts to improve the technological levels of agricultural production, since the farms are comparatively inaccessible

1/ Organisme de Développement du Bassin Versant du Fleuve de l'Artibonite (Artibonite Riverside Basin Development Agency).

to vehicles. In addition, the difficulties which farmers face in taking their goods to market serve to discourage such farmers from trying to boost their productivity by adopting enhanced standards of technology. For this reason, rural road rehabilitation will be instrumental in the region's agricultural development.

- 6.34 For economic evaluation purposes, a very cautious hypothesis was used, postulating that the ODBFA's agricultural production growth targets for the first ten years would amount to just 25 percent. Furthermore, on the basis of evaluations made by the consultant and ODBFA's agronomists, it was estimated that a mere 15 percent of benefits in terms of increased productivity would be attributable to the project's road improvements, with the rest being attributable to ODBFA's technical assistance activities. No additional benefit in terms of reduced production costs or reduced losses was quantified, even though it is obvious that the project will generate benefits of this nature. The main data used to evaluate benefits are given in Annex VI-3.

(c) Cost-benefit analysis

- 6.35 Shown below are the economic internal rate of return and the net present value discounted at 12 percent, for the six roads selected. These indicators attest to the economic feasibility of these components.

		<u>DISCOUNTED VALUE</u> (in US\$ thousand)					
		Roads					
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
I.	<u>Costs</u>						
	Investment	260	645	560	530	226	818
	Maintenance	193	470	476	386	161	451
II.	<u>Benefits</u>						
	Savings in operating costs	404	680	697	512	226	693
	Agricultural benefits	96	693	614	707	215	759
III.	<u>Total net present value</u>	47	259	274	303	55	183
IV.	<u>Economic internal rate of return</u>	15%	18%	19%	19%	15%	15%

- 6.36 An analysis was conducted to determine the optimal year for commencement of the projects, which showed that any delays would be inadvisable.

(d) Sensitivity analysis

- 6.37 The main results of the sensitivity analysis are given in the following table, which shows that the economic rate of return for the projects poses no major risks.

Sensitivity analysis

	Economic internal rate of return					
	Roads					
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Basic cost	15%	18%	19%	19%	15%	15%
Investment cost +20%	12%	15%	15%	16%	13%	12%
Savings in operating costs -20%	10%	15%	15%	17%	13%	13%
Agricultural benefits -20%	14%	15%	16%	16%	13%	13%

4. Distribution effect

- 6.38 The percentage of the population nationwide that falls into the low-income category was estimated in an IDB paper 1/ at 82.2 percent for the year 1979. For want of more recent data on income distribution in Haiti, this is the percentage that has been adopted. In order to effect a distribution of certain of the project's benefits, it makes sense to take account of the income levels of rural households in the area affected by the Pont Sondé-Mirebalais highway and the secondary roads. Accordingly, use was made of a distribution analysis conducted by the IDB for the Artibonite Valley Irrigation Project 2/ which shows that all farmers in this region fall into the low-income category.
- 6.39 As regards investment expenditures, the sole benefit acknowledged to accrue to the low-income private sector is the wage difference between what the project would pay to unskilled labor and what that unskilled labor would earn for alternative work. This calculation is implicit in the estimate for the labor shadow price, with the result that the adjustment would account for seven percent of the total investment cost. Similarly, the same concept has been used in the case of differential maintenance costs.
- 6.40 With respect to the distribution of benefits associated with savings in operating costs of light vehicles (cars, pickups, etc.), it has been postulated that such benefits are fully harnessed by the vehicles' owners, which do not belong to low-income groups.

1/ "Basic Data for Use in the Report on Low Income Groups for Haiti", DES - 1979.

2/ "Program to Recondition and Expand the Irrigation System and Agricultural Development in the Artibonite Valley (Second Stage)".

- 6.41 In connection with the savings associated with vehicles used for passenger transport, the results of an analysis of transportation fares conducted as part of the National Transportation Survey (Estudio Nacional de Transporte), not to mention the competition prevailing in the transportation sector, all make it reasonable to postulate that 80 percent of savings will be transferred to passengers. The low-income groups were assigned 82.2 percent of these savings accruing to mini bus and auto bus passengers, and 100 percent for other vehicles, primarily passenger trucks.
- 6.42 As for the reduction in truck operating costs, it is highly likely that the fierce competition between carriers will result in the complete transfer of all savings in terms of reduced operating costs for cargo owners. This hypothesis is also based on the observation of a sharp disparity (from 1 to 4) in the transportation charges that are presently imposed depending upon the physical condition of the roads. The low-income population was assigned 75 percent of these benefits, in view of the fact that 25% of cargo traffic consists of manufactured goods whose consumers are presumably higher-income consumers.
- 6.43 For purposes of distributing passengers' time savings, provision was made for various percentages to be assigned to low-income groups depending upon the type of vehicle used. These percentages were as follows: passenger trucks and tap-taps: 100 percent; buses and auto buses: 82 percent; other vehicles: 0 percent.
- 6.44 It is possible to consider that agricultural benefits will accrue in their entirety to producers, all of whom belong to low-income groups.
- 6.45 The distribution effect has been measured by calculating the proportion of benefits accruing to low-income groups within the aggregate benefits harnessed by the private sector as a whole. The distribution of benefits and costs among the various groups is shown below, culminating in a distribution effect coefficient (DEC) of 63 percent. 1/

$$\underline{1/} \quad \text{DEC} = \frac{33,486}{33,486 + 19,527} = 0.63$$

Present value of net economic benefits
by beneficiary group
(in US\$ thousand)

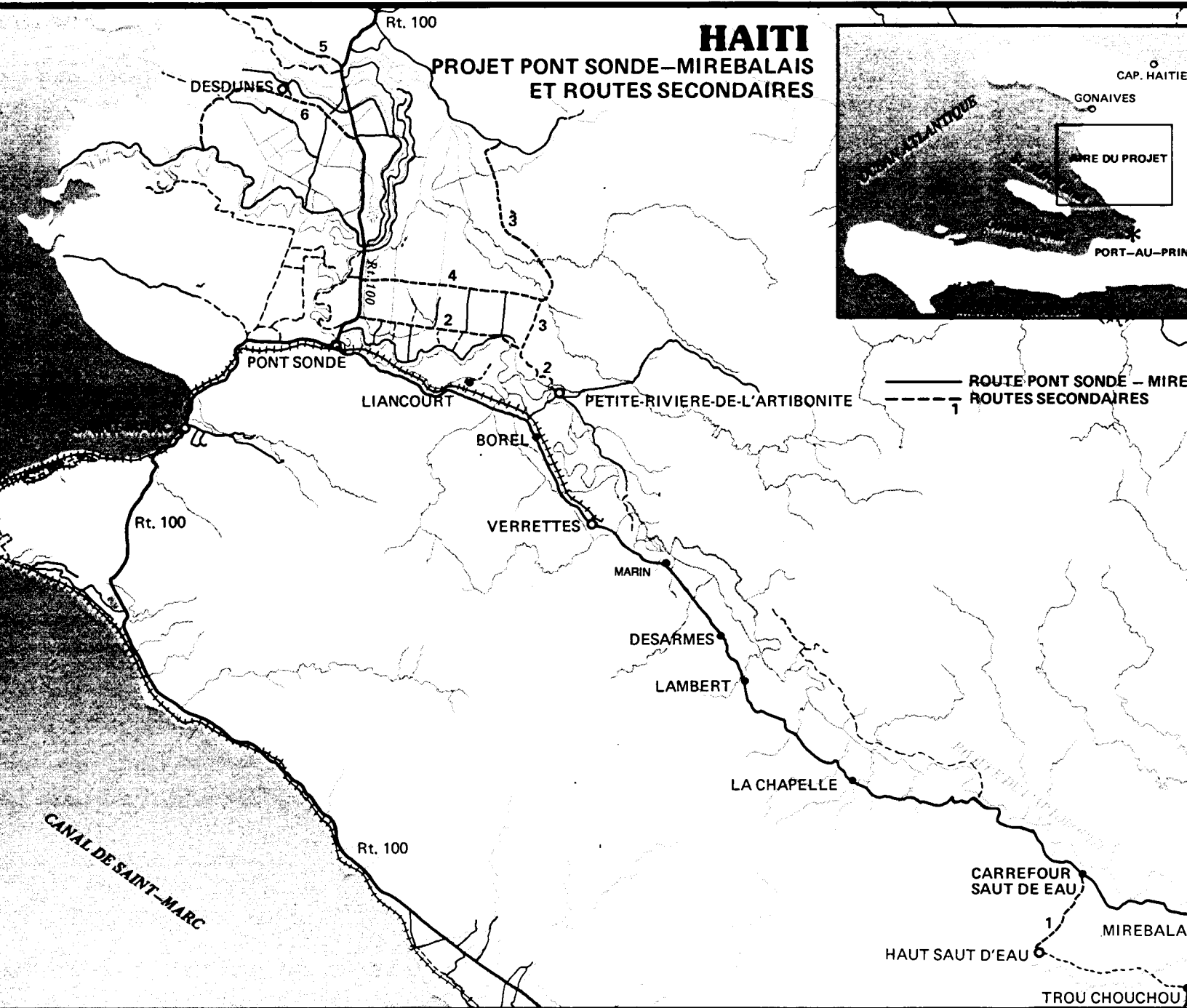
<u>Costs</u>	<u>Private Sector</u>		<u>Public sector</u>	<u>Net economic benefits</u>
	<u>Low income</u>	<u>Other private</u>		
Investment	2,253		-25,758	-23,504
Maintenance	568		- 2,705	- 2,137
<u>Benefits</u>				
Vehicle operation	24,693	17,887	- 6,836	35,744
Savings in time	2,889	1,640		4,528
Agricultural benefits	<u>3,083</u>	<u> </u>	<u> </u>	<u>3,083</u>
Total	<u>33,486</u>	<u>19,527</u>	<u>-35,299</u>	<u>17,714</u>

5. Maintenance subprogram

- 6.46 Routine and periodic maintenance costs represent a highway's operating costs, i.e., not investment costs. However, the consequences of failure to maintain a highway are so costly (high vehicle running costs, reconstruction costs, etc.) that suitable maintenance is always justified economically. The maintenance subprogram in question is justified still further by the fact that it will make it possible to use capacity at the SEPRRN that is presently untapped due to lack of resources.

HAITI

PROJET PONT SONDE-MIREBALAIS ET ROUTES SECONDAIRES



HA-0049

**SECTORAL ALLOCATION OF PUBLIC INVESTMENT,
1982-1986, BY FISCAL YEAR**

(budgeted figures, percentage allocation)

	—Current Estimates of Annual Development Budgets—					Original Estimate 3rd Plan FY 1982-1986
	FY 1982	FY 1983	FY 1984	FY 1985	FY 1986	
<u>Directly Productive Sectors</u>						
Agriculture	13.0	16.4	17.5	17.0	17.0	20.0
Mining	0.7	0.8	1.2	1.1	1.2	2.0
Industry and Crafts	13.0	2.6	1.4	1.6	1.9	3.0
Tourism	0.2	0.2	0.2	0.3	0.2	1.0
Subtotal	26.9	20.0	20.3	20.0	20.3	28.0
<u>Economic Infrastructure</u>						
Energy	16.6	18.4	15.7	16.0	16.0	18.1
Transportation	20.6	16.4	14.8	15.0	15.0	15.7
Communications	3.4	3.1	3.8	4.0	4.0	4.6
Subtotal	40.6	37.9	34.3	35.0	35.0	38.4
<u>Social Infrastructure</u>						
Urban Development	6.7	14.5	14.1	14.2	14.1	5.2
Community Development	10.6	7.0	8.8	8.0	8.0	5.0
Health	4.1	8.0	8.8	8.4	8.0	8.0
Education	3.4	4.9	4.6	5.0	5.0	7.7
Water Supply	2.5	3.9	3.9	4.1	4.0	3.9
Subtotal	27.3	38.3	40.2	39.7	39.1	29.8
<u>Other</u>	3.2	3.8	3.2	3.3	3.6	3.8
Subtotal	3.2	3.8	3.2	3.3	3.6	3.8
Total (percent)	100.0	100.0	100.0	100.0	100.0	100.0
Total Budget (G million)	1,050.0	1,083.0	1,098.0	1,150.0	1,200.0	6,300.0^a
Actual	719.0	756.0				

^a1981 prices.

Note: Includes pre-investment, institutional support, and investment.

Sources: Ministry of Planning, for FY1983 and FY1986, Programme d'Investissements Publics pour la Période 1983-1986; for FY1982, Plan Annuel 1982-1983, percentages based on actual; for FY1983 and FY1984, budgeted allocations from Plan Annuel 1983-1984; for original 3rd Plan, Plan Quinquenal 1982-1986; IBRD: Review of Economic Development Activities: Feb. 1984.

(HA-0049)

SECTORAL ALLOCATION OF PUBLIC INVESTMENT EXPENDITURE, 1972-86

	Plan I (Actual)	Plan II (Actual)	Plan III (Budget)
<u>Directly Productive Programs</u>	<u>1972/76</u>	<u>1977/81</u>	<u>1982/86</u>
Agriculture	9.7	17.3	20.0
Mines and quarries	0.5	1.1	2.0
Industry and crafts	2.9	5.0	5.0
Tourism	<u>0.5</u>	<u>0.3</u>	<u>1.0</u>
Subtotal	13.6	23.7	28.0
<u>Economic Infrastructure</u>			
Power supply	8.6	15.3	18.1
Transportation	37.4 <u>1/</u>	29.2 <u>1/</u>	15.7
Communications	<u>10.4</u>	<u>3.8</u>	<u>4.6</u>
Subtotal	56.4	48.3	38.4
<u>Social Infrastructure</u>			
Water supply and sewerage	4.0	1.2	3.9
Urban development/housing	0.3	0.8	5.2
Education	5.2	7.6	7.7
Health	6.7	7.5	8.0
Community development	<u>8.7</u>	<u>8.0</u>	<u>5.0</u>
Subtotal	24.9	25.1	29.8
<u>Other</u>			
Administration	<u>5.1</u>	<u>2.9</u>	<u>3.8</u>
Total (%)	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Total (G Million)	1,082.0	3,229.3	6,500.0 (at 1981 prices)

Source: Ministry of Planning

1/ Reflects period of intense activity associated with large infrastructure projects, i.e. Northern and Southern Highways and port expansion.

(HA-0049)

CURRENT AND PROJECTED HIGHWAY NETWORK, 1982-86

(in kilometers)

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>
Paved roads	595	595	671	694	699
Gravel roads	1,800	2,142	2,150	2,400	2,700
Earth roads	<u>438</u>	<u>368</u>	<u>368</u>	<u>327</u>	<u>317</u>
Total Km.	2,833 ^{1/} -----	3,105 -----	3,189 -----	3,421 -----	3,716 -----

Source: SAT.

^{1/} Previous statistics on the total Km. of the National Network includes an additional 1,000 Km. of earth tracks which were to be rehabilitated by TPTC under "Title 4" with USAID financing. The project has not materialized and the 1,000 Km. are no longer part of the National Network.

(HA-0049)

VEHICLE REGISTRATION FY 1975-80

(Vehicles in units and growth in percent)

<u>Vehicle Type</u>	<u>.1975</u>	<u>.1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Passenger Cars	13,448	13,480	14,843	17,379	18,300	22,030
Trucks	2,167	2,031	2,161	2,828	3,556	3,344
Pick-ups	2,924	2,354	2,599	3,669	4,774	6,716
Jeeps	1,479	2,001	2,265	2,807	3,549	3,435
Buses	318	331	645	849	1,112	1,115
Special Vehicles	<u>87</u>	<u>38</u>	<u>53</u>	<u>62</u>	<u>70</u>	<u>64</u>
Sub-Total	<u>20,423</u>	<u>20,235</u>	<u>22,513</u>	<u>27,594</u>	<u>31,361</u>	<u>36,704</u>
Motorcycles	<u>600</u>	<u>864</u>	<u>861</u>	<u>3,187</u>	<u>1,508</u>	<u>1,491</u>
Total	20,991	21,099	23,374	30,781	32,869	38,195
	*****	*****	*****	*****	*****	*****
Growth Subtotal in %	n.a.	-	11	23	14	17
Growth Total in %	n.a.	1	11	32	7	16

Source: Armed Forces in Haiti, Haitian Institute of Statistics.

(HA-0049)

VEHICLE IMPORTS, 1970-80 ^{1/}

(Number in units and growth in percent)

Fiscal ^{2/} Year	Passenger Cars		Commercial Vehicles	
	Number	Growth	Number	Growth
1970	910	n.a.	827	n.a.
1971	1178	29	1917	23
1972	1068	- 9	916	-10
1973	886	-17	1532	67
1974	1148	30	1645	7
1975	1043	- 9	1329	-19
1976	1492	43	1154	-13
1977	1525	2	1425	23
1978 ¹⁴	2507	64	2090	47
1979	3081	23	1161	-44
1980	<u>2630</u>	-15	<u>1214</u>	5
Total	1468		13514	
	----		-----	
<u>Annual Growth</u>				
1970-1980		11		8
1970-1975		15		10
1975-1980		20		-

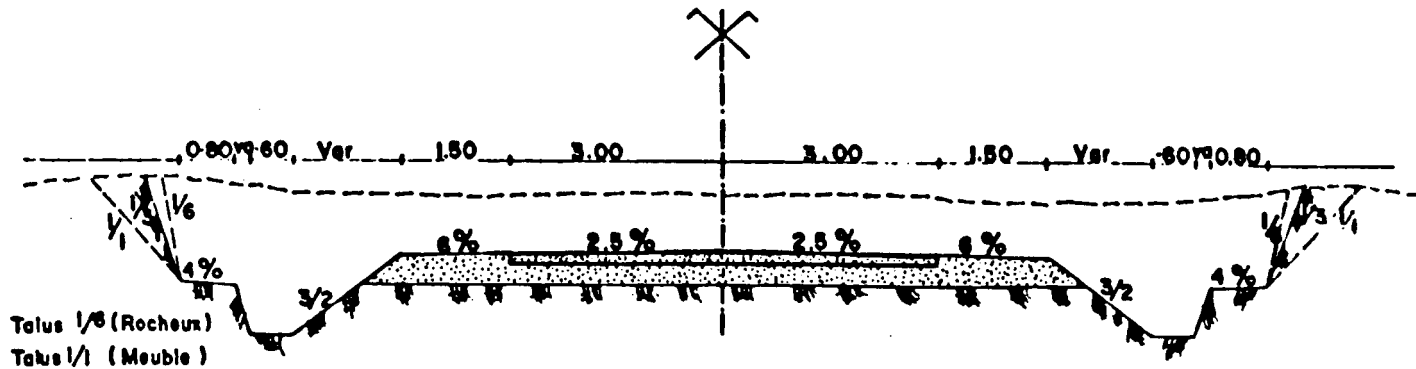
Source: Haitian Institute of Statistics and Ministry of Finance.

^{1/} Excluding duty free vehicles, which are reportedly a significant, but unsubstantiated number.^{2/} Fiscal year is from October 1 to September 30.

DIO9 - PONT-SONDE MIREBALAIS

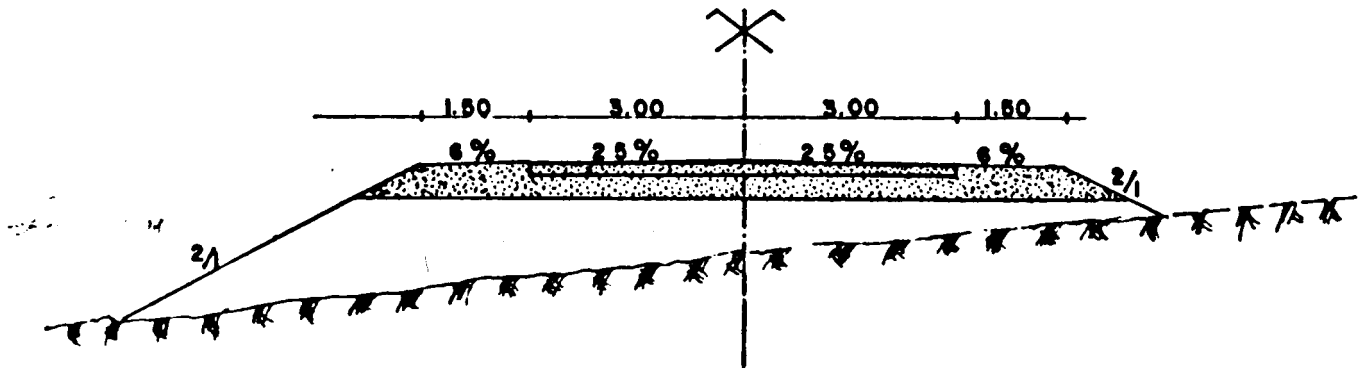
PROFILS EN TRAVERS TYPES

SECTION EN DEBLAI

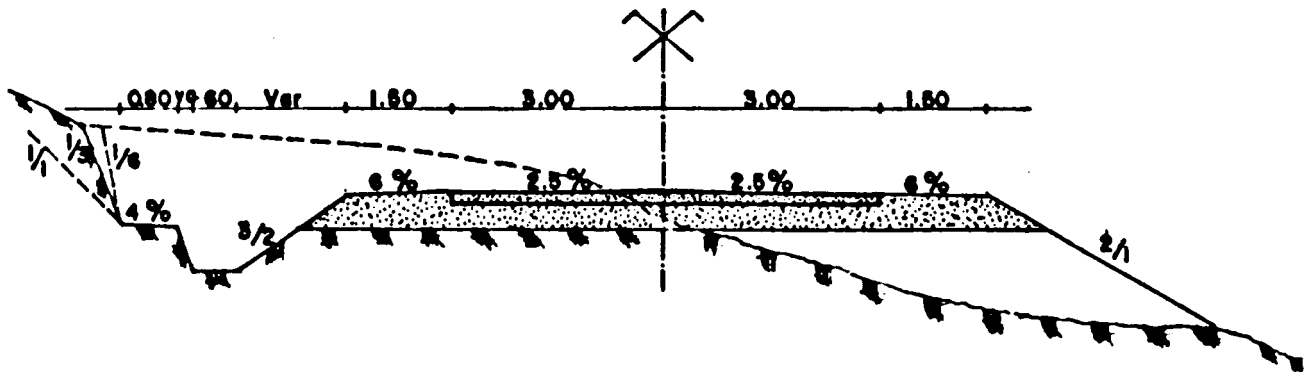


PREVOIR UN FOSSE DE CRETE POUR
HAUTEUR DE TALUS > 8m

SECTION EN REMBLAI



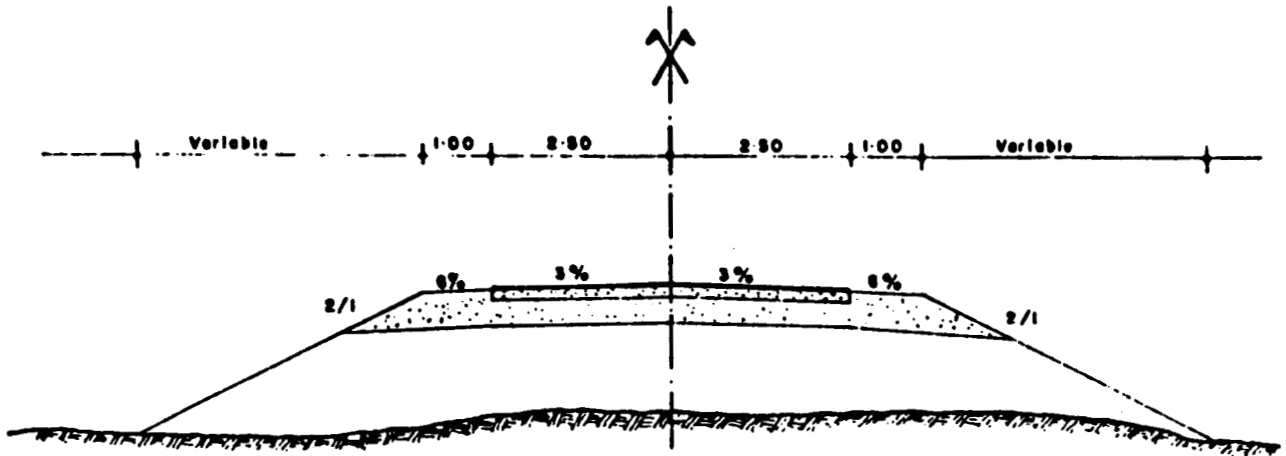
SECTION MIXTE



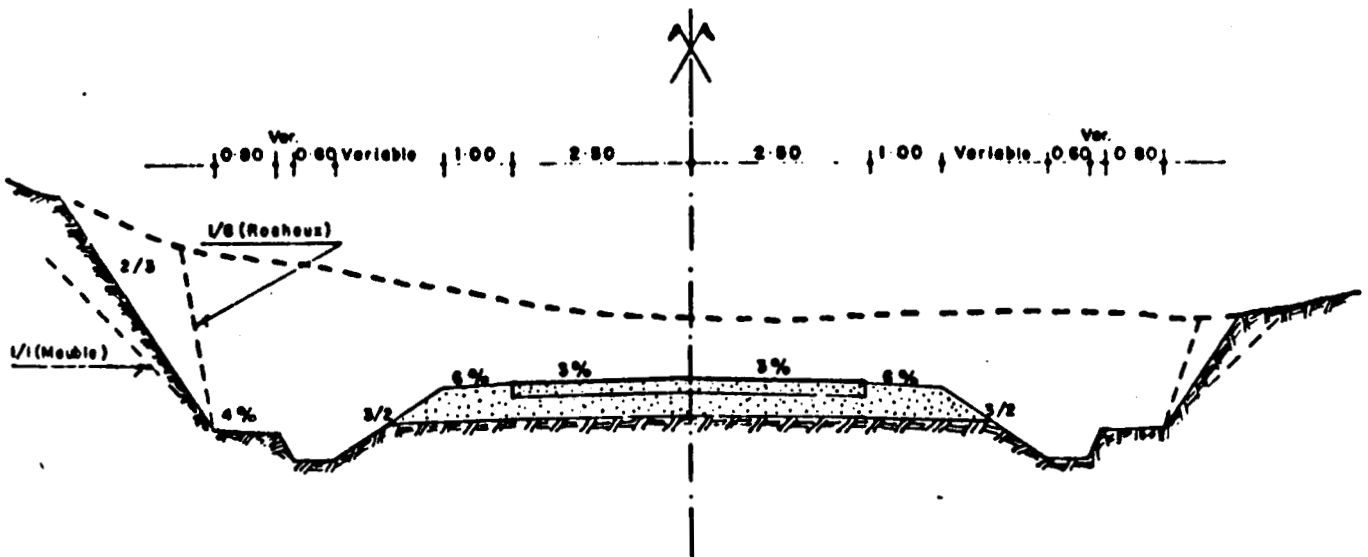
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PROFILS EN TRAVERS TYPES

SECTION EN REMBLAI



SECTION EN DEBLAI



LISTA DE REPUESTOS A ADQUIRIRSE

Nota: Esta lista no pretende ser exhaustiva sino ilustrativa del tipo de repuestos que se ha considerado que se financiarían.

1. Filtros
2. Filtros de aceite
3. Filtros de combustibles
4. Neumáticos
5. Piezas de recambio para las orugas
6. Discos de embragues
7. Discos y balatos de frenos
8. Set de reparación para carburadores
9. Set de reparaciones para los comandos hidráulicos
10. Set de reparaciones para las transmisiones
11. Bombas de aceite
12. Bombas de combustible
13. Mangueras del sistema de refrigeración
14. Mangueras y sellos del sistema hidráulico
15. Cuchillas para perfilamiento
16. Puntas y cuchillas de cucharones de cargadores y bulldozer
17. Ampolletas o focos para trabajo nocturno
18. Baterías
19. Generadores y alternadores
20. Reguladores de voltaje
21. Cables y otras partes del sistema
22. Distribuidores del sistema de encendido
23. Juegos de anillos y pistones
24. Juegos de metales para las bancadas y billas

Desglose de Costos Unitarios por Actividades
(en US\$/Km)

<u>Actividad</u>	<u>Materiales</u>	<u>Equipo y Maquinaria</u>	<u>Mano de Obra Incremental</u>	<u>Total</u>
1. <u>Camino Pavimentados</u>				
a. Resello de Carpeta	4.300	20.500	300	25.100
b. Reconformación de Banquinas	4.600	8.700	100	13.400
2. <u>Camino de Grava</u>				
a. Renivelación	1.500	2.000	100	3.600
b. Reposición de Carpeta (10 cm)	4.600	3.500	200	8.400

ANNEXE C

SELECTION ET EMBAUCHE DES CONSULTANTS

Dans la sélection et l'embauche des Consultants on appliquera les normes suivantes:

I. DEFINITIONS

- 1.01 Par expert à titre personnel on entend les professionnels ou techniciens spécialisés dans une science, un art ou une discipline.
- 1.02 Par société de consultants, on entend une association légalement constituée qui se compose essentiellement d'un personnel professionnel pour fournir des services de consultation, des conseils techniques, des opinions d'experts et des services professionnels d'autre genre.
- 1.03 Aux fins de la présente annexe, les organisations sans but lucratif comme les universités, les fondations, les organismes autonomes ou semi-autonomes et les organisations internationales qui offrent des services de consultation (institutions spécialisées) seront considérés comme des sociétés de consultants.

II. CONFLITS D'INTEREST

- 2.01 La Contribution ne pourra pas être utilisée pour embaucher des experts à titre personnel qui:
 - (a) Est membre du personnel permanent ou temporaire d'un organisme gouvernemental haïtien;
 - (b) Est ou, après le sixième mois précédant la demande de financement, a été un membre du personnel permanent ou temporaire du bénéficiaire du financement ou de la coopération technique de la Banque, ou en tant que membre de ce personnel, a participé personnellement au projet ou programme financé par la Banque.
- 2.02 Les sociétés de consultants pleinement qualifiées qui sont affiliées ou ressortissantes à une entreprise de construction, à un fournisseur de matériel ou à une société de portefeuille ne seront normalement agréées que si elles s'engagent par écrit à limiter leur rôle à la prestation de services consultatifs professionnels et si, dans le contrat signé, elles prennent l'engagement, pour elles et leurs associés, de ne participer ni aux travaux du projet ni à la fourniture de matériel ou d'équipement ni à aucune autre opération d'ordre financier le concernant.

III. ELEGIBILITE ET CRITERES DE NATIONALITE

- 3.01 Le TPTC ne pourra pas établir dans l'application des procédures décrites dans la présente annexe des dispositions ou conditions qui restreignent ou empêchent la participation de Consultants originaires de pays membres de la Banque.

- 3.02 Conformément aux dispositions de l'Accord concernant l'utilisation de la Contribution, la nationalité d'un expert sera établie sur la base de son passeport ou de tout autre document d'identité officiel. Toutefois, la Banque pourra faire des exceptions à cette règle lorsque l'expert qui ne remplit pas les conditions requises pour des raisons de nationalité: (i) a son domicile dans un pays admissible, répond aux conditions juridiques nécessaires pour pouvoir y travailler (en dehors du statut de fonctionnaire international) et a déclaré qu'il n'a pas l'intention de rentrer dans un avenir immédiat dans son pays d'origine; ou (ii) a fixé son domicile permanent dans un pays admissible et y a résidé pendant une durée minimale de 5 ans.
- 3.03 Pour déterminer la nationalité d'une société de consultants, les critères ci-après seront pris en considération:
- (a) Le pays où la société est dûment constituée ou légalement organisée.
 - (b) Le pays où la société a le siège de ses affaires.
 - (c) La nationalité des sociétés, la citoyenneté ou la résidence bona fide des individus détenant la propriété à plus de cinquante pour cent (50%) de la société avec droit de participation aux bénéfices, conformément au certificat accordé par un fonctionnaire dûment autorisé de ladite société.
 - (d) L'existence d'arrangements en vertu desquels une grande partie des bénéfices ou autres avantages tangibles de la société est destinée à des sociétés ou des personnes d'une nationalité donnée.
 - (e) La détermination par la Banque que la société fait partie intégrante de l'économie d'un pays comme en atteste la résidence bona fide dans le pays d'une grande partie du personnel exécutif, technique et professionnel de la société, et que la société compte dans le pays sur le matériel et l'équipement d'exploitation ou d'autres éléments nécessaires pour mener à bien les travaux à réaliser sous contrat.
- 3.04 Les critères de nationalité fixés par la Banque seront également applicables aux sociétés qui ayant été proposées pour exécuter une partie des travaux requis, en association conjointe ou dans le cadre d'un sous-contrat passé avec une société de consultants compétente qui remplit elle-même les critères de nationalité.

IV. QUALIFICATIONS PROFESSIONNELLES

- 4.01 L'analyse des qualifications professionnelles d'une société de consultants considérée pour un projet donné portera sur: l'expérience de la société et de ses dirigeants dans la prestation de services de consultants sur des projets d'une dimension, d'une complexité et d'une spécialisation technique comparables à celles du projet visé; les effectifs

professionnellement qualifiés assignés à la tâche; l'expérience acquise dans la région et à l'étranger; la connaissance de la langue du territoire; la capacité financière; la charge de travail actuelle; la capacité d'organiser une équipe assez nombreuse pour réaliser les travaux dans les délais impartis; la réputation sur le plan éthique et professionnelle; et l'absence absolue de conflit d'intérêts.

4.02 Les ressources de la Banque ne seront pas utilisées pour embaucher un consultant qui:

- (a) Est membre du personnel permanent ou temporaire d'un organisme gouvernemental;
- (b) Est ou, après le sixième mois précédant la demande de financement, a été un membre du personnel permanent ou temporaire du bénéficiaire du financement ou de la coopération technique de la Banque, ou en tant que membre de ce personnel, a participé personnellement au projet ou programme financé par la Banque.

V. PROCEDURE DE SELECTION ET D'EMBAUCHE

A. SELECTION ET EMBAUCHE DES EXPERTS

5.01 Dans la sélection et l'embauche des experts:

- (a) Avant de procéder à la sélection de l'expert, le TPTC devra soumettre à l'approbation de la Banque ce qui suit:
 - (i) La procédure de sélection.
 - (ii) Les prescriptions techniques (spécifications) et le calendrier des services à fournir.
 - (iii) Le nom des experts provisoirement sélectionnés en indiquant dans le détail leur nationalité et domicile, leurs antécédents, leur expérience professionnelle et leur connaissance des langues.
 - (iv) Le formulaire du contrat qui sera utilisé pour embaucher l'expert.
- (b) Une fois que le TPTC et la Banque ont donné leur approbation, le TPTC devra embaucher l'expert. Le contrat qui sera passé avec l'expert devra être conforme au modèle de contrat qu'ont arrêté la Banque et le TPTC. Une copie authentique du texte signé du contrat sera envoyée promptement à la Banque.

B. SELECTION ET EMBAUCHE DE SOCIETES DE CONSULTANTS

5.02 Dans la sélection et l'embauche d'une société de consultants:

(a) Avant de procéder à la sélection de la société de consultants, le TPTC devra soumettre à l'approbation de la Banque ce qui suit:

(i) La procédure qui sera utilisée dans la sélection et l'embauche de la société. La sélection et l'embauche devront être annoncées dans la presse nationale et, si la complexité et le degré de spécialisation de l'assistance consultative demandée le justifie, dans des revues étrangères spécialisées. De plus, la Banque devra être informée de ces annonces et elle devra en recevoir des coupures indiquant la date et le nom de la revue dans laquelle elles ont paru.

(ii) Les termes de référence (spécifications) décrivant les travaux qu'exécutera la société de consultants ainsi qu'une estimation de leur coût.

(iii) Une liste d'au moins trois sociétés et de six au plus auxquelles on envisage d'envoyer une convocation.

(b) Dès que la Banque aura approuvé les critères susmentionnés, toutes les sociétés de consultants approuvées devront être invitées à présenter des propositions conformément aux procédures et termes de référence approuvés.

(c) Les invitations à soumettre des propositions doivent établir l'emploi selon le cas d'une des modalités suivantes:

(i) Dans le premier cas, seule sera incluse la proposition technique sans cotation de prix. Le TPTC examinera les propositions reçues et les classera dans l'ordre de mérite. Si la complexité du cas l'exige, il pourra recourir, à ses propres frais, à un groupe de consultants pour qu'il examine les propositions et donne son avis technique et spécialisé sur le classement effectué.

Une fois établi le classement des sociétés de consultants, la société classée au premier rang sera invitée à négocier un contrat. Pendant les négociations, on examinera les détails des termes de référence pour s'assurer d'un accord complet et mutuel avec la société, les conditions contractuelles et juridiques de l'accord, et on élaborera le détail des coûts. Au cas où il s'avère impossible d'arriver à un accord avec cette société sur les termes du contrat, on l'avisera par écrit que sa proposition a été rejetée et on entreprendra des négociations avec la société classée au deuxième rang et ainsi de suite jusqu'à ce qu'un accord satisfaisant soit conclu.

- (ii) Dans le second cas, deux enveloppes scellées devront être présentées, l'une contenant la proposition technique sans indication de coût et l'autre le coût des services.

Le TPTC examinera les propositions techniques et en établira l'ordre de mérite. Les négociations contractuelles commenceront avec la société qui offre la proposition technique la meilleure. La seconde enveloppe présentée par cette société sera ouverte en présence d'un ou de plusieurs représentants de ladite société et elle sera utilisée dans les négociations contractuelles. Toutes les secondes enveloppes présentées par les autres sociétés demeureront scellées, et, si un accord est conclu avec la société classée au premier rang, elles seront renvoyées aux sociétés intéressées. Par contre, si un accord n'est pas conclu avec cette société sur les termes du contrat, on l'avisera par écrit de cet état de choses et on entreprendra des négociations avec la société classée au deuxième rang et ainsi de suite jusqu'à ce qu'un accord satisfaisant soit conclu. L'incapacité d'arriver à un accord sur le détail des coûts ou la rémunération des services, ou le fait que le TPTC estime que ces coûts ou cette rémunération ne conviennent pas ou sont excessifs, sera cause suffisante pour annoncer le rejet de la proposition et pour entreprendre des négociations avec la société classée au rang suivant. Lorsque la proposition d'une société a été rejetée, on ne l'invitera plus à négocier ce contrat.

- (d) Le texte du projet de contrat négocié avec la société de consultants devra être soumis par le TPTC à l'approbation de la Banque avant que le contrat ne soit signé et que les travaux ne commencent. Une copie authentique du texte signé devra être envoyée promptement à la Banque.

5.03 Nonobstant la procédure établie aux paragraphes 5.01 et 5.02 ci-dessus, et à la demande du TPTC, la Banque pourra participer à la sélection des Consultants ainsi qu'à l'élaboration de leurs contrats. Il est cependant entendu que la négociation finale des contrats et leurs signatures, dans des termes et conditions acceptables par la Banque, relèveront exclusivement du TPTC et que la Banque n'assumera aucune responsabilité à cet égard.

VI. MONNAIES DE PAIEMENT AUX CONSULTANTS

6.01 Dans les contrats passés entre le TPTC et les Consultants, il faudra préciser les monnaies dans lesquelles se feront les paiements respectifs, conformément aux normes suivantes:

(a) Paiements aux experts:

- (i) Si l'expert est domicilié dans le pays où il fournira ses services, sa rémunération sera payée exclusivement dans la monnaie de ce pays.

- (ii) Si l'expert n'est pas domicilié dans le pays où il fournira ses services et si la durée de son contrat est de moins de quatre mois, sa rémunération sera payée en dollars des Etats-Unis d'Amérique ou en d'autres monnaies convertibles qui font partie du Fonds des opérations spéciales.
- (iii) Si l'expert n'est pas domicilié dans le pays où il prêtera ses services et si la durée de son contrat est de quatre mois ou plus, sa rémunération sera payée de la manière suivante: (1) 30% dans la monnaie de ce pays; et (2) 70% en dollars des Etats-Unis d'Amérique ou dans d'autres monnaies convertibles qui font partie du Fonds des opérations spéciales de la Banque.
- (iv) Les indemnités de séjour seront dans chaque cas payées dans la monnaie du pays où l'expert les reçoit.
- (v) Les dispositions de l'Accord concernant les taux de change seront appliquées.

(b) Paiement aux sociétés de consultants:

- (i) Si la société de consultants est domiciliée dans le pays où elle doit fournir ses services, sa rémunération sera payée exclusivement dans la monnaie de ce pays, à l'exception des dépenses en devises au titre des voyages ou indemnités de séjour à l'étranger, lesquelles seront remboursées en dollars des Etats-Unis d'Amérique ou en leur équivalent dans d'autres monnaies qui font partie du Fonds des opérations spéciales de la Banque, sauf celle du pays où seront fournis les services.
- (ii) Si la société de consultants n'est pas domiciliée dans le pays où elle doit fournir ses services, le pourcentage le plus élevé possible de sa rémunération lui sera versée dans la monnaie de ce pays et le reste en dollars ou leur équivalent dans d'autres monnaies qui font partie du Fonds des opérations spéciales la Banque, étant entendu que la somme correspondant aux indemnités de séjour devra être payée dans la monnaie du pays ou des pays dans lesquels seront déboursées les indemnités. Si le pourcentage à payer dans la monnaie du pays où seront fournis les services est inférieur à trente pour cent (30%) du total de la rémunération de la société de consultants, une justification complète et détaillée sera soumise à la Banque pour examen et commentaires, en même temps que le projet de contrat correspondant.

- (iii) Lorsqu'il s'agit d'un consortium composé de sociétés domiciliées dans le pays où seront fournis les services et de sociétés non domiciliées dans celui-ci, la partie de la rémunération correspondant à chacun des membres du consortium sera versée conformément aux règles décrites dans les paragraphes (i) et (ii) ci-dessus.

- (c) Les dispositions de l'Accord concernant les taux de change seront appliquées.

VII. RECOMMANDATIONS DES CONSULTANTS

- 7.01 Il est entendu que les opinions et recommandations des Consultants n'engagent ni le TPTC ni la Banque, lesquels se réservent le droit de formuler les commentaires ou les réserves qu'ils estiment nécessaires.

VIII. PORTEE DE L'ENGAGEMENT DE LA BANQUE

- 8.01 Il reste convenu que la Banque n'assume pas l'engagement de financer tout ou partie d'un programme ou projet qui, directement ou indirectement, pourrait découler des services fournis par les Consultants ou des recommandations faites par eux.

IX. CONDITIONS SPECIALES

- 9.01 Dans les contrats que passe le TPTC avec les Consultants il sera stipulé que:
 - (a) Les Consultants devront travailler en étroite collaboration avec le personnel professionnel local qui, conformément aux dispositions de l'Accord, ait affecté ou embauché pour participer à la réalisation du Programme afin de permettre au personnel d'acquérir à la fin des travaux des compétences techniques et opérationnelles.
 - (b) Le dernier paiement prévu par le contrat sera subordonné à l'acceptation par le TPTC et la Banque du rapport final. Il sera égal à 10% au moins du montant total de la somme convenue dans le contrat pour le paiement des honoraires.

TERMINOS DE REFERENCIA

- Empresa de Consultoría para la Supervisión de la Construcción de las Obras.
- Supervisor Inmediato: Director Unidad Ejecutora del Proyecto.
- Objetivo Básico de la Consultoría: Asistir a la Unidad Ejecutora en la conducción de las tareas de ingeniería relacionadas con la ejecución del Programa.

- I. El programa objeto de esta consultoría es la rehabilitación y mejoramiento de la carretera entre Pont-Sondé y Mirebalais (73.8 kms), la rehabilitación y mejoramiento de seis caminos secundarios (66.4 kms), y el mantenimiento periódico de 80 kms de rutas pavimentadas y 270 kms de caminos de grava.

Los consultores deberán realizar todas sus tareas a través de los técnicos asignados para ello, en estrecha colaboración con el personal de la Unidad Ejecutora que supervisará y ejercerá el control técnico de las obras.

Los consultores deberán asignar a un ingeniero experimentado en administración de proyectos de esta naturaleza y un asistente ingeniero con el mismo tipo de calificaciones, para trabajar directamente en la Unidad Ejecutora del Programa, con oficinas en Puerto Príncipe, que designará el Ministerio de Obras Públicas, Transporte y Comunicaciones (TPTC).

Por otra parte, la firma de consultores deberá proveer el personal técnico suficiente en el, o los lugares en donde se estén ejecutando las obras.

El personal arriba indicado, responderá técnica y administrativamente al Director de la Unidad Ejecutora del Programa.

El servicio de consultoría que se contrata consistirá en lo siguiente:

1. Revisar las cantidades y los costos de las obras, las especificaciones y proponer los cambios que sean necesarios.
2. Asistir a TPTC en el procedimiento de licitación pública internacional de las obras que se licitarán.
3. Supervisar las actividades del o los contratistas y asistir a la Unidad Ejecutora en las materias administrativas correspondientes relacionadas con la aplicación del o de los contratos de construcción respectivos.

4. Supervisar y controlar las operaciones que se llevarán a cabo a través de SEPRRN en el sellado asfáltico de 40 kms de caminos pavimentados, la reparación de los hombros en 80 kms en el mismo tipo de caminos, la reconformación de perfiles de 270 caminos de grava y la reposición de la carpeta de rodado en 150 kms de caminos, igualmente de grava.
- II. En general, los consultores deberán llevar a cabo todas las actividades de orden técnico, económico o administrativo, que de acuerdo con las prácticas aceptadas de la ingeniería, son propias de la naturaleza del programa y será obligación de los consultores su realización, aún cuando ésta no esté expresamente mencionada en estos términos de referencia. Se sobre entiende que los consultores proveerán todo el personal técnico necesario para permitirles asumir la total responsabilidad técnica en la ejecución completa de este programa. Los consultores deberán preparar los informes técnicos y administrativos de avance cada trimestre de acuerdo con las pautas que señalará el BID. Adicionalmente, deberán asistir a la Unidad Ejecutora en la preparación de los documentos o las informaciones que deberán ser suministradas al Banco para el cumplimiento de las obligaciones contractuales señaladas en el contrato de préstamo respectivo.

El alcance de los trabajos de consultoría que se deberán llevar a cabo, deberán ajustarse a las mejores prácticas de la ingeniería relativas a este tipo de proyectos e incluirán, pero no se limitarán, a lo siguiente:

1. Proceso de Licitaciones

- a) Revisar los planos, precios unitarios, cantidades de obras, presupuestos y especificaciones y documentos de licitación que hayan sido previamente aprobados por la Unidad Ejecutora.
- b) Asistir a la Unidad Ejecutora en todos los procedimientos relativos al llamado a licitación pública internacional.
- c) Asignar un ingeniero experimentado a la tarea de informar en el terreno a los futuros licitantes acerca de las características de la obra y del lugar en que se construirá, resolviendo en consulta con la Unidad Ejecutora todas las preguntas que de dicha visita puedan surgir.
- d) Asistir a la Unidad Ejecutora en el análisis y hacer las pertinentes recomendaciones que conduzcan a la selección del o de los contratistas.
- e) Asistir a la Unidad Ejecutora en preparar y negociar el o los contratos con los contratistas seleccionados.

2. Supervisión de la Construcción

- a) Revisar el programa de trabajo presentado por los contratistas y luego de su aprobación verificar que el progreso de los trabajos esté de acuerdo con dicho programa.
- b) Supervisar y llevar a cabo las inspecciones de campo necesarias y el control requerido para verificar las cantidades, alineamientos y elevaciones topográficas de todos los componentes del proyecto.
- c) Supervisar, inspeccionar y controlar todo trabajo llevado a cabo por los contratistas asegurándose que los trabajos han sido realizados de acuerdo con los planos y especificaciones correspondientes.
- d) Aprobar la calidad de los materiales propuestos para ser usados en los trabajos así como la calidad de los trabajos en sí mismos; analizar los resultados de los ensayos de controles de calidad preparando los correspondientes informes indicando el cumplimiento de los mismos con los estándares de calidad y las especificaciones técnicas de los documentos del contrato.
- e) Con previa autorización de la Unidad Ejecutora aprobar: (i) áreas de almacenamiento para materiales y equipos de los contratistas dentro de sus campamentos de obra, en acuerdo a lo prescrito en las especificaciones en lo relativo al impacto de estas labores en el medio ambiente; y (ii) metodología y vías a utilizar para el transporte tanto de materiales como de equipo, asegurándose de seguir lo prescrito en las especificaciones técnicas respecto a evitar el daño en el medio ambiente.
- f) Tomar todas las providencias desde el punto de vista de ingeniería necesarias para la buena ejecución de los trabajos estableciéndolas por escrito con el fin de asegurarse que los trabajos se lleven a cabo de acuerdo con los respectivos diseños y especificaciones.
- g) Verificar las dimensiones y la localización, así como la disposición de las estructuras, fundamentalmente de drenaje a ser construidas.
- h) Determinar y verificar que las cantidades de obras a ser pagadas por el contratante al contratista, corresponden exactamente a la magnitud del trabajo realizado manteniendo debidamente informado a la Unidad Ejecutora mediante reportes mensuales del progreso de los trabajos.
- i) Periódicamente verificar el progreso y costo de los trabajos incluyendo los trabajos faltantes e informar a la Unidad Ejecutora al respecto.
- j) Llevar a cabo la inspección final de los trabajos y certificar finalmente para cada sección o tramo de los trabajos, la aprobación de los mismos o en su defecto recomendar a la Unidad Ejecutora las

modificaciones o reparaciones que se consideren necesarias para ameritar la respectiva aprobación final.

- k) Completar todo el trabajo de ingeniería necesario incluyendo la medición de campo, planos actualizados, revisando las estimaciones de costo cuando se hayan propuesto y aprobado cambios en los diseños debido a condiciones encontradas durante su construcción. Asistir a la Unidad Ejecutora en la preparación de las órdenes de trabajo o modificaciones necesarias.
- l) Determinar y calcular el pago final que el contratante deberá pagar a los contratistas por el trabajo realizado informando sobre el particular en detalle a la Unidad Ejecutora si el trabajo realizado corresponde al total a ser pagado por el contratante.
- m) Asistir a la Unidad Ejecutora en la preparación de los informes y solicitudes de desembolsos a ser sometidas al Banco, así como en otra documentación que deba ser presentada al mismo, durante la ejecución del proyecto.
- n) Asistir a la Unidad Ejecutora en el estudio y aprobaciones de las extensiones de plazo, compensaciones por trabajo adicional o por otra razón que previamente se haya aprobado que se encuentra plenamente justificada.
- o) Informar a la Unidad Ejecutora cada mes sobre el progreso de la construcción en todas sus facetas desde el punto técnico y económico. Copias de todos estos informes deberán estar disponibles para información del Banco. Información detallada sobre el progreso de los trabajos desde el punto de vista técnico, económico como administrativo deberá ser enviada, previa revisión de la Unidad Ejecutora, al Banco.
- p) Determinar antes de autorizar su uso, la existencia de materiales y equipo necesario para cada fase del proyecto especificando el día o el período en los cuales dichos materiales o equipos tendrán que estar a disposición del contratista informando previamente a la Unidad Ejecutora para evitar obstáculos o demoras en la ejecución de los trabajos.
- q) Proveer todo el personal y asumir completa responsabilidad técnica por la supervisión e inspección de las obras.
- r) Rectificar y, si técnicamente es conveniente, corregir los diseños existentes durante el avance de los trabajos y preparar los planos "como construido" indicando las correcciones habidas con respecto a los planos originales, de las obras construidas.

3. Supervisión y Control de las Operaciones del Subprograma de Mantenimiento

- a) Revisar los programas de trabajo para este subprograma verificando que las actividades anuales programadas incluyendo las cantidades y valor de combustible y materiales a ser adquiridos para cada sección de vía corresponden a dicho programa efectuando un control trimestral sobre las compras efectuadas en el trimestre anterior y verificando la utilización de los combustibles y materiales en las actividades realizadas al igual que el avance físico de las obras durante el período.
- b) Preparar en forma trimestral un informe a ser presentado al Banco, que deberá contener las actividades señaladas y en forma adicional las horas máquinas empleadas por tipo y clase así como los hombres meses utilizados en el avance reportado, por tramo de cada camino, por actividad y desglosado entre mano de obra calificada y no calificada. Especial atención deberá prestarse al uso de los materiales adquiridos sobre todo lo relacionado con los combustibles y el asfalto utilizado.

ANNEXE B

PROCEDURE D'APPEL D'OFFRES

**(PROJECT DE ROUTE PONT SONDE-MIREBALAIS
ET DES ROUTES SECONDARIES)**

I. DOMAINE D'APPLICATION

- 1.01 La présente procédure sera utilisée par l'Organisme d'exécution ^{1/} pour toute passation de marché de biens et de travaux pour le Projet (Programme) lorsque la valeur desdits biens ou travaux dépassera la contre-valeur de deux cent mille dollars des Etats-Unis d'Amérique (200.000/dollars EU) et à condition que l'Organisme appartienne au secteur public. On inclut dans ce secteur les sociétés et autres établissements dont le capital est détenu à plus de 50 % par l'Etat.
- 1.02 L'Organisme d'exécution peut appliquer, à titre supplémentaire, des conditions formelles ou des détails de procédure envisagés par la législation locale et non compris dans la présente procédure, à condition que leur application ne s'oppose pas aux garanties de base que doivent offrir les appels d'offres, ni aux politiques de la Banque en la matière ^{2/}.

II. REGLES GENERALES

A. Appel à la concurrence internationale

- 2.01 On utilisera le système de l'appel à la concurrence internationale pour la passation de marchés de biens ou de travaux financés en partie ou en

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- 1/ Selon cette procédure, le terme "Organisme d'exécution" équivaut également à l'Emprunteur, lorsque celui-ci est chargé des appels d'offres.
- 2/ Etant donné que la présente procédure est utilisée uniformément par les pays emprunteurs et que leur législation en matière d'appel d'offres varie sur des questions de forme et de détail, les règles établies ici récapitulent les directives générales du processus d'appel d'offres, ses garanties de base (telles que: publicité, égalité, concurrence, officialité, confidentialité et libre accès) des politiques de la Banque en la matière. De ce fait, certaines questions de forme ou détails de procédure, telles que la composition des commissions d'appel d'offres ou des comités techniques, les formalités d'inscription des firmes, les délais d'attribution ou d'évaluation des offres, les formalités de l'acte d'attribution, etc. peuvent être remplacées par la législation locale.

totalité au moyen des devises du financement et dont le montant dépasse la contre-valeur de deux cent mille dollars des Etats-Unis d'Amérique (200.000/dollars EU).

- 2.02 Lorsque sont utilisées les devises du Financement, les procédures et les conditions propres à l'appel d'offres permettent la libre concurrence de soumissionnaires originaires des pays membres de la Banque. En conséquence, on ne peut établir de conditions qui empêchent ou restreignent l'offre de biens et de services, y compris celles de tout mode de transport, ou la participation de soumissionnaires originaires de ces pays.

B. Appel d'offres pouvant se limiter au contexte local

- 2.03 La passation de marchés de biens ou de travaux financés en totalité ou en partie au moyen des ressources en monnaie nationale du financement ou au moyen de fonds de contrepartie locale dont le montant dépasse la contre-valeur de deux cent mille dollars des Etats-Unis d'Amérique (200.000/dollars) doit se faire par appel à la concurrence pouvant être limité au contexte national.

C. Autres procédures de passation de marchés de travaux ou de biens

- 2.04 Lorsque la passation de marchés de biens ou de travaux est financée exclusivement au moyen de ressources ne provenant ni du financement ni de la contrepartie locale ^{3/}, l'Organisme d'exécution peut utiliser les procédures convenues avec le fournisseur de ces ressources, à condition que lesdites procédures soient conformes aux exigences techniques du Projet et qu'elles garantissent que le coût des biens ou des travaux, ainsi que les conditions financières sont jugées raisonnables par la Banque. La Banque peut demander que l'Organisme d'exécution l'informe de la procédure applicable et des résultats obtenus.

D. Procédures applicables aux offres d'un montant égal ou inférieur à 200.000/dollars

- 2.05 L'acquisition de biens ou l'exécution de travaux d'un coût inférieur ou égal à la contre-valeur de deux cent mille dollars des Etats-Unis d'Amérique (200.000 dollars EU) sont régies en principe par les dispositions de la législation locale. Dans la mesure du possible, l'Organisme d'exécution fixe des procédures permettant la participation de divers soumissionnaires et accorde l'attention voulue aux critères d'économie, d'efficacité et de prix raisonnables. Lorsque sont utilisées les devises du Financement, les procédures employées doivent permettre en outre la participation de soumissionnaires de biens ou de services originaires des pays membres.

3/ Par exemple, de banques commerciales, de fournisseurs ou d'autres organismes financiers internationaux.

E. Participants et biens admissibles

2.06 Les biens et services devant faire l'objet de marchés aux fins du Projet (Programme) et devant être financés au moyen des ressources du financement devront provenir des pays membres de la Banque. Pour déterminer cette origine, on se conformera aux règles suivantes:

1. Appels d'offres pour l'exécution de travaux

2.07 Seuls pourront participer aux appels d'offres pour l'exécution de travaux les entreprises originaires de l'un quelconque des pays membres de la Banque. Pour déterminer la nationalité d'une entreprise soumissionnaire, l'Organisme d'exécution devra tenir compte des facteurs suivants:

- (a) l'entreprise est constituée et fonctionne, conformément aux dispositions légales du pays membre où l'entreprise a son domicile principal;
- (b) l'entreprise a son siège principal sur le territoire d'un pays membre;
- (c) plus de 50 % du capital de l'entreprise sont la propriété d'une ou de plusieurs personnes physiques ou morales d'un ou de plusieurs pays membres et ou de citoyens ou de résidents "bona fide" de ces pays admissibles;
- (d) l'entreprise fait partie intégrante de l'économie du pays membre où elle est domiciliée;
- (e) il n'existe aucune disposition en vertu de laquelle une part substantielle des bénéfices nets ou autres bénéfices tangibles de l'entreprise soit due ou payée à des personnes physiques qui ne sont pas citoyens ou résidents "bona fide" des pays membres, ou à des personnes morales qui ne sont pas admissibles, conformément aux exigences de nationalité du présent article; et
- (f) lorsqu'il s'agit d'un marché de travaux, il faut que soient citoyens d'un pays membre au moins 80 % des membres du personnel devant prêter des services dans le pays où les travaux sont exécutés, que ces personnes soient employées directement par l'entreprise contractante ou par des sous-traitants. Aux fins de ce calcul, s'il s'agit d'une entreprise d'un pays différent de celui où sont exécutés les travaux de construction, il n'est pas tenu compte des citoyens ou résidents permanents du pays où sont exécutés les travaux de construction.
- (g) les normes indiquées ci-dessus s'appliquent à chacun des membres d'une "coentreprise" ou d'un consortium (association de deux

entreprises ou plus) et aux entreprises qui se proposent de sous-traiter une partie des travaux.

Les conditions stipulées au présent article doivent être connues des intéressés qui, dans les formulaires de présélection ou d'enregistrement ou de soumission, selon le cas, doivent fournir à l'exécutant les informations correspondantes aux fins de déterminer sa nationalité.

2. Appels d'offres pour l'acquisition de biens

2.08 Seuls pourront être acquis des biens provenant de pays membres de la Banque. Le pays d'origine d'un bien sera:

- (a) celui dans lequel la matière première ou l'équipement a été extrait, cultivé, produit, manufacturé ou transformé; et
- (b) celui dans lequel, du fait de la fabrication, du traitement ou du montage, est produit un autre article, commercialement reconnu, qui diffère sensiblement dans ses caractéristiques de base de celles de n'importe lequel de ses composants importants. La nationalité ou pays d'origine de l'entreprise qui produit ou vend les biens ou les équipements n'est pas retenue pour déterminer l'origine de ceux-ci.

F. Marges préférentielles nationale et régionale pour le cas d'appel d'offres pour l'acquisition de biens

2.09 En cas d'appel à la concurrence internationale pour l'acquisition de biens, l'Organisme d'exécution peut appliquer les marges préférentielles suivantes:

1. Marge préférentielle nationale

2.10 Lorsque participent aux appels d'offres des fournisseurs du pays de l'Organisme d'exécution, ledit organisme peut appliquer en faveur de ces fournisseurs une marge préférentielle nationale. Pour cela, il utilise les critères suivants:

- (a) Un bien est jugé d'origine locale lorsque le coût des matériaux, de la main-d'oeuvre et des services locaux employés dans sa fabrication représente au moins 40 % de son coût total.
- (b) Lors de la comparaison des offres locales et étrangères, le prix proposé ou offert pour des articles d'origine nationale est le prix de livraison au lieu du Projet après déduction: (i) des droits d'importation payés sur les matières premières principales ou les composants manufacturés; et (ii) les taxes nationales à la vente, à la consommation et à la valeur ajoutée, incorporées au coût de l'article ou des articles offerts. Le soumissionnaire local fournit la preuve des montants à déduire, conformément aux alinéas (i) et (ii) ci-dessus. Le prix proposé ou offert de l'étranger est le prix c.a.f. (à l'exclusion des droits d'importation, consulaires

et portuaires) auquel sont ajoutés les frais de manutention au port et de transport local du port ou de la frontière au lieu du Projet.

- (c) La conversion des monnaies pour l'établissement des comparaisons de prix se fait sur la base du taux de change appliqué par la Banque audit marché.
- (d) Lors de l'adjudication du marché, l'Organisme d'exécution peut ajouter une marge préférentielle de 15 % ou le montant des droits de douane réels, le plus faible de ces deux montants étant retenu, au prix c.a.f. des offres étrangères exprimé sur la base de leur contre-valeur dans sa monnaie nationale.

2. Marge préférentielle régionale

- (a) Aux fins du présent marché, la Banque reconnaît les accords sous-régionaux et régionaux d'intégration suivants: (i) Marché commun centraméricain; (ii) Communauté des Caraïbes; (iii) Accord de Cartagena; et (iv) Association latino-américaine d'intégration. Dans les cas où le pays de l'Organisme d'exécution a souscrit à plus d'un accord d'intégration, on peut appliquer la marge préférentielle sous-régionale ou la marge régionale, en accord avec le pays d'origine du bien.
- (b) Lorsque participent à un appel d'offres des fournisseurs d'un pays (qui n'est pas celui de l'Organisme d'exécution) membre d'un accord d'intégration auquel a également souscrit le pays de l'Organisme d'exécution, lesdits fournisseurs de biens ont droit à une marge préférentielle régionale qui leur est accordée selon les critères suivants:
 - (i) On considère qu'un bien est d'origine régionale lorsqu'il est originaire d'un pays membre d'un accord d'intégration auquel est partie le pays de l'Organisme d'exécution et qui se conforme aux normes régissant l'origine et les autres aspects liés aux programmes de libéralisation des changes établies par les accords en question.
 - (ii) La valeur ajoutée locale n'est pas inférieure à celle stipulée pour la marge préférentielle nationale.
 - (iii) Dans la comparaison des offres étrangères, l'Organisme d'exécution peut ajouter au prix des offres de biens originaires de pays qui ne sont pas partie à l'accord d'intégration un pourcentage de 15 % ou la différence entre le droit d'importation applicable à ces biens lorsqu'ils sont originaires de pays qui ne sont pas partie à l'accord d'intégration et le droit applicable à ces biens lorsqu'ils proviennent de pays partie à l'accord, le plus faible de ces deux montants étant retenu.

III. APPEL A LA CONCURRENCE INTERNATIONALE

A. Présélection. Enregistrement des soumissionnaires

1. Domaine d'application. Règle générale

- 3.01 En règle générale, l'Organisme d'exécution utilise pour les appels d'offres pour l'exécution de travaux le système de présélection ou l'enregistrement des soumissionnaires. Pour les travaux de petite envergure, l'Organisme d'exécution et la Banque peuvent convenir d'exempter les soumissionnaires de cette obligation. L'Organisme d'exécution peut également utiliser ce système dans les cas d'appel d'offres pour l'acquisition de biens lorsqu'il le juge opportun.
- 3.02 Le système des doubles plis. A moins que la législation locale ne s'y oppose, la Banque et l'organisme d'exécution peuvent convenir, en cas de circonstances qui, de l'avis des parties, la rendent souhaitable, d'utiliser la procédure des doubles plis. Cette procédure doit être clairement établie dans les plis donnant les conditions de l'appel d'offres. Les parties peuvent convenir de l'une des deux formules suivantes:
- (a) Système des deux plis à ouverture simultanée. Selon cette procédure, tout soumissionnaire présente, lors de l'acte d'ouverture, deux enveloppes fermées dont le contenu est le suivant:
 - (i) Enveloppe N° 1 informations sur la capacité financière, légale et technique des entreprises, telles que: solvabilité financière pour soumissionner, expérience générale et particulière, personnel clé et machines disponibles pour le projet, marchés exécutés, marchés en cours d'exécution et engagements et litiges en cours.
 - (ii) Enveloppe N° 2 - offre proprement dite avec indication de prix.
 - (iii) Lors de l'acte d'ouverture, on ouvre les enveloppes N° 1 et l'on vérifie si les soumissionnaires ont inclus les documents exigés. Si ces enveloppes ne contiennent pas la documentation requise, il en sera rendu compte au procès verbal de la séance, ainsi que des informations manquantes ou incomplètes, et l'on retournera aux soumissionnaires les enveloppes N° 2 sans les ouvrir. Si les enveloppes N° 1 contiennent toute l'information exigée par les bases administratives, on procédera à l'ouverture des enveloppes N° 2 et on lira à haute voix le prix de chaque offre, en donnant acte du prix, ainsi que des détails les plus pertinents des offres.
 - (iv) L'analyse des propositions et l'adjudication se font dans les délais fixés dans les plis indiquant les conditions, une fois que la Banque a donné son accord aux dispositions énoncées.

(b) Système des deux plis à ouverture différée.

- (i) Dans une première étape, on suivra la procédure indiquée au paragraphe (a) (i) et (ii) ci-dessus, en incluant les informations que doit contenir chaque enveloppe. Si l'on applique ce système, on procède à deux cérémonies publiques. Lors de la première, on ouvrira les enveloppes N° 1 et l'on vérifiera qu'elles contiennent les documents exigés par les bases administratives. Si ces enveloppes ne contiennent pas la totalité des informations requises, il en sera donné acte au procès verbal de la séance, et il sera donné indication des informations faisant défaut ou incomplètes, et l'on retournera aux soumissionnaires correspondants les enveloppes N° 2 sans les ouvrir. Une fois terminées ces procédures, on considérera comme conclue la première cérémonie. Sur la base de ces informations, on procédera à la présélection des soumissionnaires dans les délais indiqués par les bases. Une fois la présélection conclue et approuvée par la Banque, on procédera à la deuxième cérémonie publique, qui se déroulera à la date, à l'heure et au lieu indiqués dans les plis. A cette cérémonie, on commencera par rendre sans les ouvrir les enveloppes N° 2 aux entreprises qui n'auront pas été présélectionnées. Une fois que se seront retirés les représentants des entreprises non présélectionnées, on ouvrira les enveloppes N° 2 des entreprises présélectionnées et l'on entreprendra de donner lecture à haute voix du prix de chaque offre en donnant acte dans le procès verbal des prix et des détails les plus pertinents des offres.
- (ii) L'analyse finale des propositions et l'adjudication se feront dans les délais fixés dans les plis et une fois que la Banque aura donné son approbation.

2. Inscription des soumissionnaires

- 3.03 Dans les procédures d'inscription des soumissionnaires dans les registres ou dans les procédures de présélection, on ne fixera pas comme condition d'inscription des conditions qui empêchent ou rendent difficile la participation d'entreprises étrangères ou qui portent atteinte au principe de l'égalité des postulants. L'ouverture des registres, que ce soit pour l'actualisation des données des entreprises enregistrées ou pour l'inscription de nouvelles entreprises, devra se faire avec fréquence et en tous cas pour les appels d'offres à réaliser au moyen des ressources du présent Projet.

3. Délai de présélection

- 3.04 L'Organisme d'exécution doit procéder à la présélection dans un délai conforme au calendrier d'investissements convenu entre l'Organisme d'exécution et la Banque.

4. Contenu de la convocation et sa publicité

a. Approbation préalable des documents d'appel d'offres par la Banque

- 3.05 Les documents de l'appel d'offres, y compris les textes de l'annonce et les formulaires de présélection ou d'inscription des soumissionnaires, suivant le cas, sont convenus préalablement entre l'organisme d'exécution et la Banque, avant la publication de l'avis d'inscription. Les documents de l'appel d'offres doivent en outre être conformes aux dispositions du paragraphe B.3 du présent chapitre.

b. Contenu de l'annonce

- 3.06 L'annonce de présélection ou d'inscription au registre des soumissionnaires devra comprendre au moins les informations suivantes:

- (i) Description générale du Projet et des travaux faisant l'objet de l'appel d'offres; leur lieu de réalisation et leurs principales caractéristiques. En cas d'appel d'offres pour l'acquisition de biens, leur description et leurs caractéristiques particulières, le cas échéant.
- (ii) La méthode de présélection que l'on se propose d'utiliser.
- (iii) Les dates approximatives auxquelles seront lancés les appels d'offres, seront ouverts les plis, seront entrepris les travaux faisant l'objet de l'appel d'offres et se termineront ces travaux.
- (iv) Le fait que le Projet est financé en partie par la Banque, et que l'acquisition de biens ou l'exécution de travaux au moyen dudit financement sera subordonnée aux dispositions du contrat de prêt souscrit avec la Banque.
- (v) Le lieu, l'heure et la date, convenus entre l'Organisme d'exécution et la Banque, où les entreprises pourront retirer les formulaires de présélection ou d'enregistrement, ainsi que leur coût.
- (vi) Les autres conditions à remplir par les intéressés pour pouvoir se qualifier et être invités par la suite, pour pouvoir participer aux appels d'offres.

c. Publicité

(i) Périodiques et publications spécialisées. L'annonce de présélection ou d'enregistrement, et l'annonce de l'appel d'offres s'il n'y a pas eu d'appel d'offres restreint aux entreprises présélectionnées, devront être publiées au moins dans l'un des journaux à gros tirage du pays et au moins à trois reprises. Entre chacune des trois publications, il devra s'écouler au moins trois jours. Pour les marchés de grande envergure, l'avis de présélection ou d'enregistrement et l'ouverture de l'appel d'offres devront être publiés en outre dans une publication spécialisée de grand tirage international et dans le journal des Nations Unies intitulé "Development Business. The Business Edition of Development Forum".

(ii) Ambassades. L'Organisme d'exécution remettra copies des avis de présélection, enregistrement et ouverture de l'appel d'offres, selon le cas, aux ambassades ou, en l'absence de celles-ci, aux consulats de chacun des pays membres de la Banque, à la même date que celle où lesdits appels sont remis aux journaux aux fins de publication.

5. Contenu du formulaire de présélection ou d'enregistrement des soumissionnaires

3.07 Le formulaire de présélection ou d'enregistrement, suivant le cas, devra contenir, entre autres, les informations suivantes:

- (a) Aspects juridiques concernant la constitution, la nature juridique et la nationalité de l'entreprise soumissionnaire. On présentera en annexe copie des statuts et documents constitutifs de l'entreprise. L'information relative à la nationalité devra être conforme aux dispositions de l'alinéa E 2.07 du Chapitre II de la présente Procédure. ^{4/}
- (b) Antécédents techniques de l'entreprise.
- (c) Situation financière de l'entreprise.
- (d) Personnel et équipement disponibles.
- (e) Expérience de la construction, fabrication et installation de biens ou ouvrages similaires à ceux qui font l'objet de l'appel d'offres.

^{4/} Dans les cas, peu fréquents, où un appel d'offres pour la fourniture de biens se fait avec présélection, l'information à laquelle se réfère cet alinéa concerne en outre l'origine des biens, conformément aux dispositions de l'alinéa E 2.08 du Chapitre II.

- (f) Travaux en cours de l'entreprise ou obligations assumées par celle-ci.
- (g) Indication que l'entreprise dispose d'un personnel et d'un équipement suffisants pour mener à bien de façon satisfaisante les travaux envisagés dans le cadre du Projet, et indication du lieu où se trouvent ledit personnel et ledit équipement.
- (h) Description en termes généraux des systèmes qu'utiliserait l'entreprise pour l'exécution des travaux.

6. Délai pour la remise des formulaires

- 3.08 Les intéressés auront un délai d'au moins 30 jours à compter de la dernière publication de l'avis pour présenter le formulaire de présélection ou d'enregistrement.

7. Présélection

a. Entreprises présélectionnées

- 3.09 Seules pourront être présélectionnées ou inscrites au registre des soumissionnaires les entreprises qui donneront la preuve de leur aptitude technique, financière, juridique et administrative à exécuter les travaux, conformément aux lois en vigueur dans le pays en question et aux règles fixées par la présente procédure. Les formulaires qui présenteront des vices de forme, des omissions ou des erreurs évidentes pourront être acceptés, à condition que lesdits vices de forme, omissions ou erreurs ne portent pas sur des questions de fond et que, en permettant de les corriger, on ne porte pas atteinte au principe d'égalité entre les soumissionnaires.

b. Rapport technique

- 3.10 L'Organisme d'exécution préparera un rapport technique sur les entreprises qui se présenteront, en indiquant celles qui auront été présélectionnées ou dûment qualifiées dans le registre et celles qui ne l'ont pas été, en en donnant les raisons. Le rapport sera communiqué dans les plus brefs délais à la Banque pour que celle-ci exprime son accord ou ses réserves à son égard.

c. Notification des résultats

- 3.11 Une fois que la Banque aura approuvé le rapport technique, les résultats seront notifiés simultanément à toutes les entreprises participantes.

d. Disqualifications postérieures

- 3.12 Lorsqu'une entreprise a été présélectionnée, elle ne pourra être disqualifiée pour l'appel d'offres en question, à moins que la présélection ou l'enregistrement ait été fondé sur des informations inexactes présentées par l'entreprise ou que soient apparues des

circonstances postérieures à la date de présélection ou d'enregistrement qui justifient cette décision.

e. Validité de la sélection

- 3.13 Passé le délai d'un an après une présélection ou un enregistrement sans qu'ait été lancé l'appel d'offres, l'Organisme d'exécution lancera un nouvel appel à présélection ou enregistrement afin d'admettre de nouveaux soumissionnaires et pour que les entreprises déjà présélectionnées ou enregistrées actualisent les informations communiquées à l'origine. Le nouvel appel devra répondre aux conditions fixées par la présente procédure.

f. Manque de soumissionnaires

(i) Au cas où le premier appel d'offres déboucherait sur la présélection ou l'enregistrement de moins de deux soumissionnaires, on procédera à une deuxième convocation selon la même procédure que pour la première, sous réserve de l'autorisation de la Banque, pour procéder à une consultation de fournisseurs selon les dispositions stipulées aux paragraphes suivants, ou pour choisir directement le contractant.

(ii) Si après la deuxième convocation, il n'a pu être procédé à la présélection de deux entreprises ou plus, on pourra déclarer nulle la présélection et, avec l'approbation préalable de la Banque, procéder à la consultation privée d'au moins trois entreprises, y compris l'entreprise présélectionnée, le cas échéant.

3.14 Présélection pour divers appels d'offres

- (a) L'Organisme d'exécution peut convenir avec la Banque de procéder à une seule présélection d'entreprise pour divers appels d'offres, lorsqu'il prévoit que, au cours d'une période brève, il devra procéder à divers appels d'offres pour la construction d'un ensemble d'ouvrages de même nature qui, par leur emplacement géographique ou en raison d'autres facteurs acceptables par la Banque, ne peuvent faire l'objet d'un seul appel d'offres.
- (b) Les entreprises ainsi présélectionnées pourront participer, s'il en est ainsi convenu, à un ou plusieurs appels d'offres prévus. L'Organisme d'exécution pourra demander, à chaque appel d'offres, que les soumissionnaires actualisent les informations qui auraient pu varier depuis la présélection, et en particulier démontrent que leur capacité d'exécution reste conforme à celle exigée par les bases.
- (c) La durée de validité des présélections pour un ensemble d'appel d'offres ne dépassera pas un an.

B. Appel d'offres

1. Lancement de l'appel d'offres

a. Lorsqu'il est procédé à une présélection

- 3.15 S'il est procédé à une présélection, l'Organisme d'exécution n'enverra ou ne remettra d'invitation à présenter des soumissions qu'aux entreprises présélectionnées. Avant d'envoyer ou de remettre lesdites invitations, l'Organisme d'exécution fera parvenir à la Banque, pour accord, le texte de l'invitation, et s'il ne l'a pas fait auparavant, les documents de l'appel d'offres. A ce stade, il ne sera pas nécessaire de publier d'avis ni d'effectuer de démarche auprès des ambassades visées au paragraphe A 4(c) du présent chapitre.

b. Quand il n'a pas été procédé à une présélection

- 3.16 S'il n'a pas été procédé à une présélection, on suivra, pour la publicité du lancement de l'appel d'offres, les dispositions du paragraphe A 4(c) du présent chapitre. En ce qui concerne l'aptitude des soumissionnaires à exécuter les travaux ou à fournir les biens dont il s'agit, les documents de l'appel d'offres devront indiquer clairement les conditions minimales que devront réunir lesdits soumissionnaires. Pour ce faire, les documents comprendront un questionnaire, dont le contenu sera similaire à celui du formulaire indiqué au paragraphe 3.07 du présent chapitre, qui sera rempli par les intéressés et remis par ceux-ci avec leurs offres respectives.

2. Avis d'appel d'offres et invitations à soumissionner

- 3.17 Les avis de lancement d'un appel d'offre publiés dans la presse ou les invitations à soumissionner remises aux entreprises présélectionnées devront comprendre au moins les éléments suivants:

- (a) la description du Projet et de l'objet de l'appel d'offres, et l'origine des fonds destinés à financer le coût des fournitures ou des travaux;
- (b) le fait que le Projet sera financé en partie par la Banque et que l'acquisition de biens ou l'exécution de travaux au moyen dudit financement seront subordonnées aux dispositions du contrat de prêt souscrit avec la Banque;
- (c) la description générale de l'équipement, des machines et matériels nécessaires, ainsi que de l'ouvrage, avec les volumes ou quantités de travail, ses principales parties et son délai d'exécution;
- (d) le bureau ou le lieu, le jour et l'heure où pourront être retirés les documents de l'appel d'offres, y compris les bases, les plans et cahiers des charges, ainsi que le projet de marché à conclure;

- (e) le bureau où devront être remises les propositions et l'autorité qui sera chargée de leur approbation et de l'attribution du marché; et
- (f) le lieu, le jour et l'heure auxquels seront ouverts les plis en présence des soumissionnaires ou de leurs représentants.

3. Documents d'appel d'offres

a. Approbation de la Banque

- 3.18 Les documents de l'appel d'offres (bases ou conditions), y compris notamment les instructions pour les soumissionnaires, les bases administratives, les plans et cahiers des charges, le cas échéant, et le projet de marché, seront approuvés par la Banque avant d'être remis aux intéressés.

b. Clarté des documents

- 3.19 Les documents d'appel d'offres qu'établira l'Organisme d'exécution devront être clairs et cohérents. L'Organisme d'exécution prendra un soin particulier à veiller à ce que les biens ou services faisant l'objet de l'appel d'offres soient décrits avec suffisamment de clarté et de détails. Le coût des documents d'appel d'offres devra être raisonnable.

c. Libre accès à l'Organisme d'exécution

- 3.20 L'Organisme d'exécution devra être disponible, une fois retirés les documents d'appel d'offres et jusqu'à l'ouverture, pour répondre aux demandes ou donner des éclaircissements aux soumissionnaires sur les documents de l'appel d'offres. L'Organisme d'exécution répondra à ces consultations dans les plus brefs délais et portera les éclaircissements en question à la connaissance des autres intéressés et de la Banque.

d. Normes de qualité

- 3.21 Au cas où le cahier des charges de l'appel d'offres indique des normes de qualité pour les équipements ou matériels, il conviendra de souligner que seront également admis des biens assurant une qualité égale ou supérieure à celle exigée.

e. Spécifications pour les équipements; marques de fabrique

- 3.22 Les descriptions figurant dans les cahiers des charges devront éviter toute indication de marque de fabrique, numéros de catalogue ou types d'équipement d'un fabricant déterminé, à moins que cela ne soit nécessaire pour garantir l'inclusion d'un modèle déterminé indispensable, ou de caractéristiques de fonctionnement, de construction ou de fabrication. Si une référence spéciale est inévitable, elle devra être suivie des termes "ou équivalent", et indiquer le critère qui servira à déterminer "l'équivalence". Les spécifications devront

permettre de présenter des soumissions pour la fourniture d'autres équipements, articles ou matériels présentant des caractéristiques similaires, offrant le même service et étant de qualité égale à ceux spécifiés. Dans des cas particuliers et avec l'approbation préalable de la Banque, les cahiers des charges pourront exiger la fourniture d'un article d'une marque déterminée.

f. Monnaie utilisée pour les paiements

- 3.23 Les documents de l'appel d'offres indiqueront la monnaie ou les monnaies qui seront utilisées pour les paiements, conformément aux dispositions du présent Contrat. Lorsque les paiements doivent s'effectuer à la fois en monnaie nationale et en devises, les documents de l'appel d'offres devront exiger que les montants à payer soient indiqués séparément dans la soumission.

g. Garantie de maintien de l'offre

- 3.24 Les cautions ou garanties de maintien de l'offre ne seront pas de montants élevés, ^{5/} et leur durée ne sera pas prolongée, au point de décourager la participation de soumissionnaires responsables.

- (i) On restituera sa garantie à l'adjudicataire une fois établi le contrat et acceptée sa caution ou garantie d'exécution des travaux.
- (ii) On restituera leur garantie aux soumissionnaires arrivés en deuxième et troisième place dans un délai ne dépassant pas trois mois à compter de l'attribution ou de l'établissement du contrat, si ceux-ci interviennent avant l'expiration dudit délai. Toutefois, si lesdits soumissionnaires déclarent ne plus être intéressés, on leur restituera la garantie dans les cinq jours qui suivront l'attribution du marché.
- (iii) Pour les autres soumissionnaires, la garantie sera restituée dans les cinq jours qui suivront l'attribution du marché.

5/ Une certaine pratique en matière d'appel d'offres limite le montant des garanties de maintien des offres à 1 % de la valeur du marché de travaux. D'autres recommandent que l'Organisme d'exécution établisse un montant fixe en espèces commun à tous les soumissionnaires, au lieu d'exiger que chaque soumissionnaire fixe le montant de sa garantie en pourcentage de la valeur de son offre. Cela pour éviter que soit divulgué plus facilement le prix de chaque offre avant l'ouverture, sur la base du montant de la garantie.

h. Caution ou garantie d'exécution

- 3.25 Les cahiers des charges de travaux de construction devront exiger des cautions d'exécution ou d'autres garanties assurant que les travaux seront menés à leur terme. Leur montant variera selon le type et l'ampleur des travaux, mais il devra être indiqué dans les documents d'appel d'offres et être suffisant pour offrir à l'Organisme d'exécution une protection appropriée. Le montant de la caution devra assurer que, en cas de défaillance du contractant dans l'exécution des travaux, ceux-ci seront achevés sans augmentation de coût. La durée de validité

de la caution ou garantie devra dépasser le délai du marché de travaux, afin de couvrir une période de garantie raisonnable. Le cas échéant, on pourra exiger des cautions ou garanties pour des marchés de fourniture d'équipements. Ces garanties pourront consister à retenir un pourcentage du paiement total pendant une période d'essai.

4. Délais pour la présentation des soumissions

a. Délai normal

- 3.26 Pour la présentation d'offres en réponse à des appels à la concurrence internationale, on prévoira un délai d'au moins 45 jours, à compter de la date de la dernière publication de l'avis d'appel d'offres ou de la date à laquelle les documents d'appel d'offres seront à la disposition des éventuels soumissionnaires, la plus reculée de ces deux dates étant retenue.

b. Délai pour les grands travaux de génie civil

- 3.27 Lorsqu'il s'agit de grands travaux de génie civil, les soumissionnaires devront disposer d'un délai minimum de 90 jours pour préparer leur soumission.

c. Délai pour les appels d'offres sur le marché national

- 3.28 Lorsque l'appel d'offres est limité au marché national, l'Organisme d'exécution pourra réduire le délai de présentation des soumissions à 30 jours.

5. Protection de l'offre et des documents pour la présélection des soumissionnaires

- 3.29 Les fonctionnaires chargés de recevoir les plis contenant le formulaire de présélection ou l'offre devront constater que ces plis sont dûment fermés. Ces plis seront conservés en lieu sûr jusqu'au jour fixé pour leur ouverture. Une fois ouverts, on ne fera pas de photocopie des documents qu'ils contiennent. A moins que la loi n'en dispose autrement, après l'ouverture publique et la lecture du prix des soumissions et avant l'annonce de l'adjudication, on ne pourra fournir d'information qu'en ce qui concerne l'examen, la tabulation, la clarification et l'évaluation des soumissions ou pour les

recommandations relatives à l'adjudication à des fonctionnaires de l'Organisme d'exécution affecté officiellement au processus d'appel d'offres en question.

6. Modification ou extension des documents d'appel d'offres

- 3.30 Toute modification ou extension des bases et cahiers des charges de l'appel d'offres ou tout report de la date de présentation des offres devront faire l'objet de l'approbation préalable de la Banque et être communiqués à tous les intéressés ayant retiré les documents de l'appel d'offres. Au cas où, de l'avis de l'Organisme d'exécution ou de la Banque, la modification ou l'extension serait substantielle, il faudra que s'écoulent au moins 30 jours entre la communication aux intéressés et la date d'ouverture des plis.

7. Les consultations ne devront pas modifier les documents d'appel d'offres

- 3.31 Les consultations de l'Organisme d'exécution par les intéressés en ce qui concerne l'interprétation des documents de l'appel d'offres ne pourront être utilisées pour modifier ou élargir les bases et cahiers des charges de l'appel d'offres. Les consultations et leurs réponses ne produiront pas d'effet suspensif sur le délai de présentation des offres.

8. Soumission unique

- 3.32 Lorsqu'un appel d'offres ne donnera lieu qu'à une seule soumission, l'Organisme d'exécution ne pourra attribuer le marché sans le consentement préalable de la Banque.

9. Ouverture des plis

- 3.33 Les soumissions devront être présentées par écrit et sous enveloppe fermée. Elles devront être signées par les représentants légaux des soumissionnaires et répondre aux conditions fixées dans les documents d'appel d'offres. Elles seront ouvertes en public au jour et à l'heure prévus; pourront assister à l'acte d'ouverture les représentants des soumissionnaires et de la Banque, qui pourront consulter les offres; les offres reçues après la date fixée pour leur présentation seront retournées sans être ouvertes. Il sera donné lecture à haute voix du nom des soumissionnaires, du prix de chaque offre et du délai et du montant des garanties, ainsi que de toute modification substantielle présentée séparément, dans le délai, mais après la présentation de l'offre principale. Il sera dressé procès verbal de toutes les mesures prises, qui sera signé par le représentant de l'Organisme d'exécution et par les soumissionnaires présents qui désirent le faire.

10. Clarification des soumissions

- 3.34 L'Organisme d'exécution pourra demander aux soumissionnaires des éclaircissements sur leur soumission. Les éclaircissements demandés et

ceux qui seront apportés ne pourront modifier l'offre dans son essence, ni son prix, ni violer le principe de l'égalité entre les soumissionnaires.

11. Analyse et comparaison des soumissions

a. Objet

- 3.35 Lors de l'analyse et de la comparaison des soumissions, on déterminera si celles-ci sont conformes aux termes et conditions stipulés dans les documents d'appel d'offres et l'on déterminera la valeur de chaque soumission, aux fins de sélection de l'adjudicataire.

b. Soumission évaluée comme la moins disante

- 3.36 Outre le prix indiqué sur la soumission, ajusté pour corriger les erreurs arithmétiques, l'Organisme d'exécution pourra tenir compte d'autres facteurs pertinents afin de déterminer la soumission évaluée comme celle au prix le plus bas.

(a) Ces facteurs devront, dans la mesure du possible, s'exprimer en termes monétaires ou être affectés d'une pondération. En tout cas, les facteurs, ainsi que le poids donné à chacun d'eux, devront figurer dans les documents d'appel d'offres. Lors de l'évaluation des soumissions, on ne pourra tenir compte de facteurs qui n'auraient pas été mentionnés, avec la valeur correspondante, dans les documents d'appel d'offres. On ne prendra pas non plus en compte le montant, le cas échéant, du réajustement des prix inclus dans les propositions.

(b) La monnaie ou les monnaies dans laquelle ou lesquelles l'Organisme d'exécution paierait le prix de la soumission, si elle était acceptée, devront être évaluées en fonction d'une seule monnaie, choisie par celui-ci pour la comparaison de toutes les soumissions et spécifiée dans les documents d'appel d'offres. Les taux de change à utiliser pour cette évaluation seront les taux de vente publiés de source officielle applicables à des transactions similaires le jour de l'ouverture des soumissions ou à une date postérieure (30 ou 60 jours après l'ouverture des propositions) selon ce qui sera stipulé dans l'appel d'offres.

c. Rejet des soumissions

- 3.37 L'Organisme d'exécution rejettera les soumissions qui ne seront pas conformes aux documents de l'appel d'offres. Il pourra toutefois admettre celles qui présenteront des vices de forme, omissions ou erreurs évidentes, à condition que ces défauts ne portent pas sur des questions de fond et que leur correction ne porte pas atteinte au principe de l'égalité des soumissionnaires. L'Organisme d'exécution pourra en outre, sur présentation préalable de la Banque, rejeter toutes les soumissions présentées lorsqu'aucune d'entre elles ne satisfera à l'objet de l'appel d'offres, ou lorsqu'il sera évident qu'il n'y a pas

eu concurrence ou qu'il y a eu collusion. L'Organisme d'exécution pourra en outre rejeter toutes les offres si celles aux prix les plus bas sont assorties de montants dépassant le budget officiel d'une somme justifiant une telle mesure. En pareil cas, il faudra demander de

nouvelles soumissions au moins à tous ceux qui auront été invités à présenter des soumissions à l'origine, et il faudra accorder un délai suffisant pour leur présentation. En l'absence de garantie d'exécution à 100 %, l'Organisme d'exécution pourra également rejeter certaines soumissions qui seront tellement inférieures au budget officiel que l'on peut prévoir raisonnablement que le soumissionnaire ne pourra terminer les travaux ou fournir les biens dans le délai et selon les termes stipulés.

12. Rapport d'évaluation de l'offre

- 3.38 L'Organisme d'exécution devra préparer un rapport détaillé sur l'analyse et la comparaison des offres, en indiquant les raisons précises sur lesquelles repose la sélection de la soumission évaluée comme la moins disante. Ce rapport sera soumis à l'examen de la Banque avant l'attribution du marché. Si la Banque détermine que le projet d'adjudication n'est pas conforme aux dispositions de la présente procédure, elle en informera immédiatement l'Organisme d'exécution en indiquant les raisons de sa conclusion. A moins que ne puissent être levées les objections présentées par la Banque, le marché ne pourra être financé par la Banque. La Banque pourra annuler le montant du prêt qui, à son avis, correspond aux dépenses déclarées non admissibles.

13. Attribution du marché

a. Accord de la Banque

- 3.39 Le marché est attribué au soumissionnaire dont la proposition a été évaluée comme la moins disante et conforme aux documents d'appel d'offres, une fois que la Banque a approuvé le projet de notification de l'attribution.

b. Communication de l'attribution et signature du contrat

- 3.40 L'Organisme d'exécution communique l'acte d'attribution à tous les soumissionnaires, au domicile qu'ils ont indiqué, dans les trois jours ouvrables à compter de l'attribution. Il transmet, à bref délai, pour approbation de la Banque, copie du projet de contrat qu'il se propose de signer avec l'adjudicataire. Le contrat à signer ne peut modifier l'offre de l'adjudicataire ni les conditions et modalités stipulées dans les documents d'appel d'offres. Une fois que la Banque approuve le projet de contrat, il est procédé à sa signature et l'Organisme d'exécution communique rapidement à la Banque copie du contrat signé.

14. Modification de l'attribution

- 3.41 Si, pour quelque raison que ce soit, l'adjudicataire ne signe pas le contrat dans le délai fixé à cet effet, l'Organisme d'exécution peut, sans lancer de nouvel appel d'offres, attribuer le marché aux autres soumissionnaires dans l'ordre dans lequel ils ont été classés par évaluation.

15. Annulation de l'appel d'offres

a. Rapport pour la Banque

- 3.42 Au cas où, pour des raisons justifiées, l'Organisme d'exécution se propose d'annuler l'appel d'offres, il en demande l'approbation à la Banque, et lui envoie à cet effet un rapport complet indiquant les raisons et les éléments de jugement qui ont servi de base à cette décision.

b. Effets de la déclaration

- 3.43 Une fois déclaré nul l'appel d'offre, l'Organisme d'exécution doit lancer un deuxième appel d'offres, en se conformant également aux dispositions de la présente procédure. Si le deuxième appel d'offres est déclaré nul, l'Organisme d'exécution et la Banque conviennent de la procédure à suivre pour l'achat ou la passation du marché correspondant.

IV. COMMUNICATION DE PROTESTATIONS

- 4.01 L'organisme chargé des travaux ne pourrait pas imposer des conditions qui empêchent, rendent difficile ou plus onéreuse la présentation des réclamations de la part des compagnies participant aux appel d'offres pour la acquisition des biens ou pour l'exécution des travaux avec les ressources du Financement.
- 4.02 L'organisme d'exécution s'engage à communiquer à la Banque dans les meilleurs délais toute protestation ou réclamation qu'il reçoit par écrit des entreprises participantes, ainsi que les réponses qu'il adresse auxdites protestations ou réclamations.

V. NON-RESPECT DE LA PRESENTE PROCEDURE

- 5.01 La Banque se réserve le droit de s'abstenir de financer tout marché pour lequel, à son avis, n'ont pas été respectées les dispositions de la présente procédure.

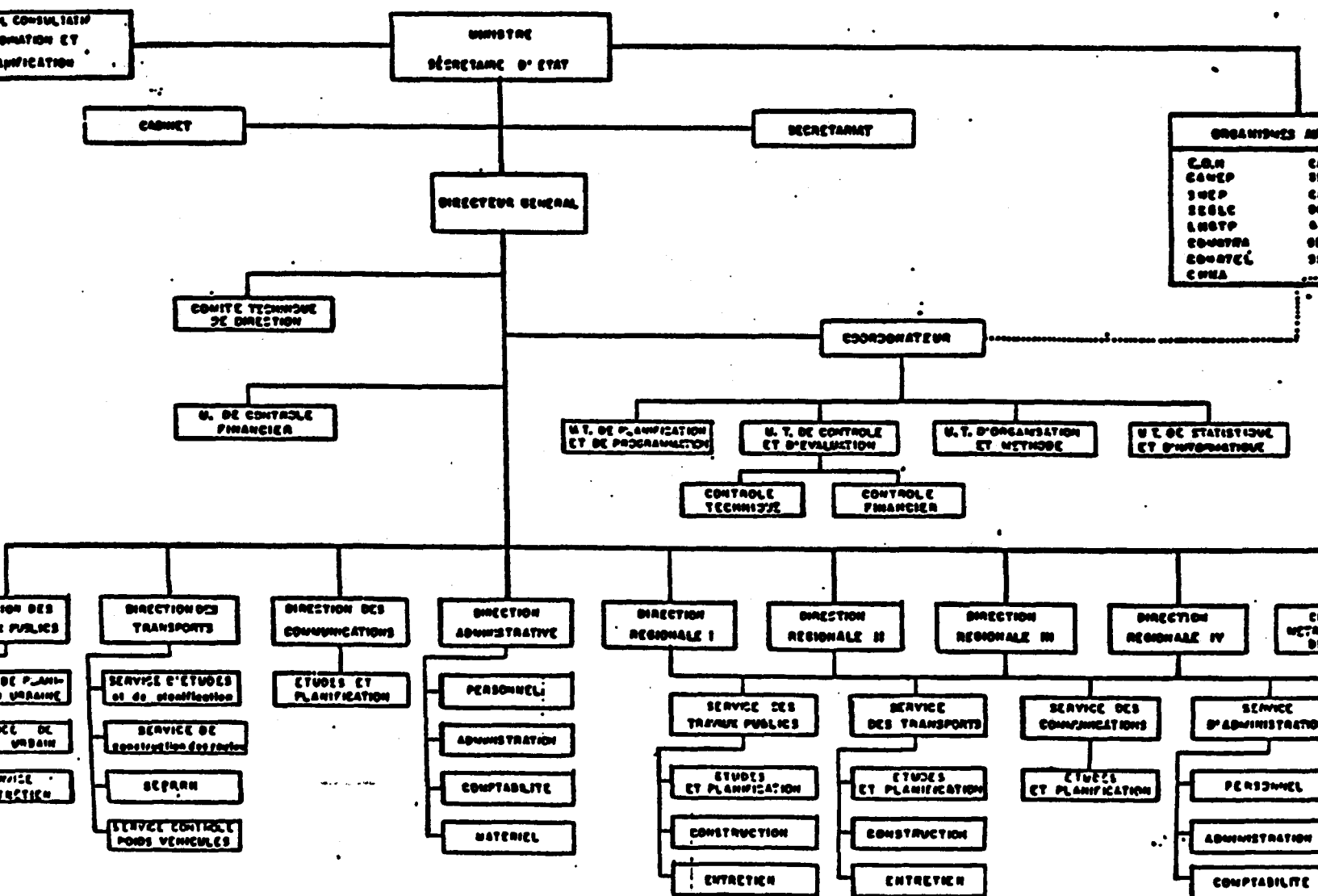
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RESOLUCION DEL DIRECTORIO	U	0.	2MAY90	2MAY90	NONE	2MAY90	2MAY90	NONE
NEGOCIAR CONTRATO PRESTAMO	U	95.0	2MAY90	2MAY90	NONE	2AUG90	2AUG90	NONE
CUMPLIMENT CONDICIONES PREVIAS LEGALES	U	29.0	3AUG90	9JUN91	510.	31AUG90	7JUL91	49.
ELEGIBILIDAD PARA DESEMOLSO	U	0.	20OCT90	7JUL91	260.	20OCT90	7JUL91	NONE
AGENCIA DEL CONTRATO	U	0.	2AUG90	2AUG90	NONE	2AUG90	2AUG90	NONE
INICIO MATERIAL DE OBRAS	U	0.	1DEC90	3AUG95	1706.	1DEC90	5AUG95	1705.
PRIMER DESEMOLSO	U	15.0	21OCT90	8JUL91	260.	44OY90	22JUL91	27.
CUMPLIM CONDICIONES PREVIAS FINANCI.	U	79.0	3AUG90	20APR91	260.	20OCT90	7JUL91	NONE
CUMPL.CONDIC.PREVIAS INSTITUCIONALES	U	15.0	20JUL95	20JUL95	NONE	5AUG95	5AUG95	NONE
ULTIMO DESEMOLSO	U	15.0	20JUL95	20JUL95	NONE	5AUG95	5AUG95	NONE
FIN DEL PROYECTO	U	0.	3AUG95	5AUG95	NONE	5AUG95	5AUG95	NONE
CONTRATAR SERVICIO SUPERVISION	U	27.0	1SEP90	1SEP90	NONE	27SEP90	27SEP90	NONE
SUPERVISION EJECUCION OBRA	U	1624.0	30SEP90	30SEP90	NONE	11MAR95	11MAR95	NONE
REVISION DE PLANOS Y ESPECIFICACIONES	U	10.0	30SEP90	30SEP90	NONE	9OCT90	9OCT90	NONE
PRECALIFICACION FIRMAS CONSTRUCTORMAS	U	29.0	3AUG90	11SEP90	39.	31AUG90	9OCT90	39.
INVIITAR-RECIBIR OFERTAS FIRMAS	U	14.0	10OCT90	10OCT90	NONE	23OCT90	23OCT90	NONE
EVALUAR OFERTAS	U	11.0	24OCT90	24OCT90	NONE	5NOV90	5NOV90	NONE
ADJUDICAR Y CONTRATAR LICITACION	U	28.0	4NOV90	4NOV90	NONE	1DEC90	1DEC90	NONE
VIA PRINCIPAL "MIRABALAIS"	U	0.	1DEC90	22JUL91	233.	1DEC90	22JUL91	NONE
MIRABALAIS CONSTRUCCION VIA	U	1470.0	2DEC90	23JUL91	233.	10DEC94	51JUL95	1077.
MIRABALAIS CONSTRUCCION PUENTES	U	392.0	2DEC90	5JUL94	1511.	28DEC91	51JUL95	1077.
MIRABALAIS FIN VIA PRINCIPAL	U	0.	10DEC94	31JUL95	233.	10DEC94	51JUL95	232.
CAMINOS SECUNDARIOS	U	0.	1DEC90	1DEC90	NONE	1DEC90	1DEC90	NONE
C.SECUNDARIOS-CHUMHOU-10.6K CONST VIA	U	392.0	2DEC90	12JUN94	1288.	28DEC91	8JUL95	1287.
C.SECUNDARIOS-PETIT-14.0K CONST VIA	U	210.0	2DEC90	2DEC90	NONE	29JUN91	29JUN91	NONE
C.SECUNDARIOS-GROS-14.8K CONST VIA	U	210.0	2DEC90	11DEC94	1470.	29JUN91	8JUL95	1469.
C.SECUNDARIOS-BOIS-12.0K CONST VIA	U	210.0	2DEC90	11DEC94	1470.	29JUN91	8JUL95	1469.
C.SECUNDARIOS-PONT-5.0K CONST VIA	U	105.0	2DEC90	20MAR95	1575.	16MAR91	8JUL95	1574.
C.SECUNDARIOS-NATIONAL-14.3K CONST VIA	U	210.0	2DEC90	11DEC94	1470.	29JUN91	8JUL95	1469.
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FIN DE LAS OBRAS	U	0.	3AUG95	3AUG95	NONE	3AUG95	3AUG95	NONE

TIME UNITS THIS REPORT ARE DAYS
() MEANS ACTUAL
TOTAL
FLOAT
FREE
PROJECT DURATION IS 1920.0 DAYS
END OF REPORT

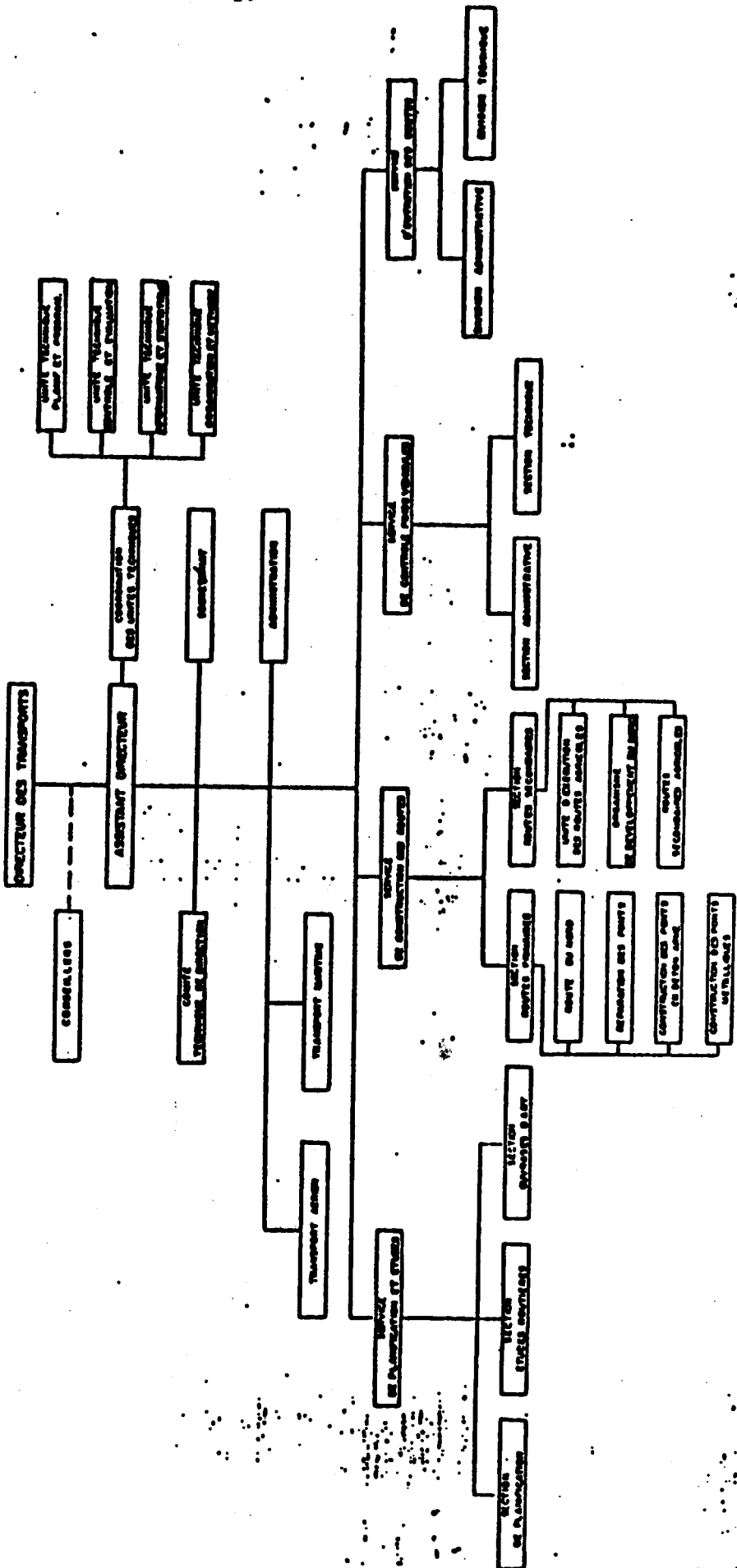
DEPARTEMENT DES TRAVAUX PUBLICS TRANSPORTS ET COMMUNICATIONS

ORGANIGRAMME (DECRET DU 18 OCTOBRE 1983)



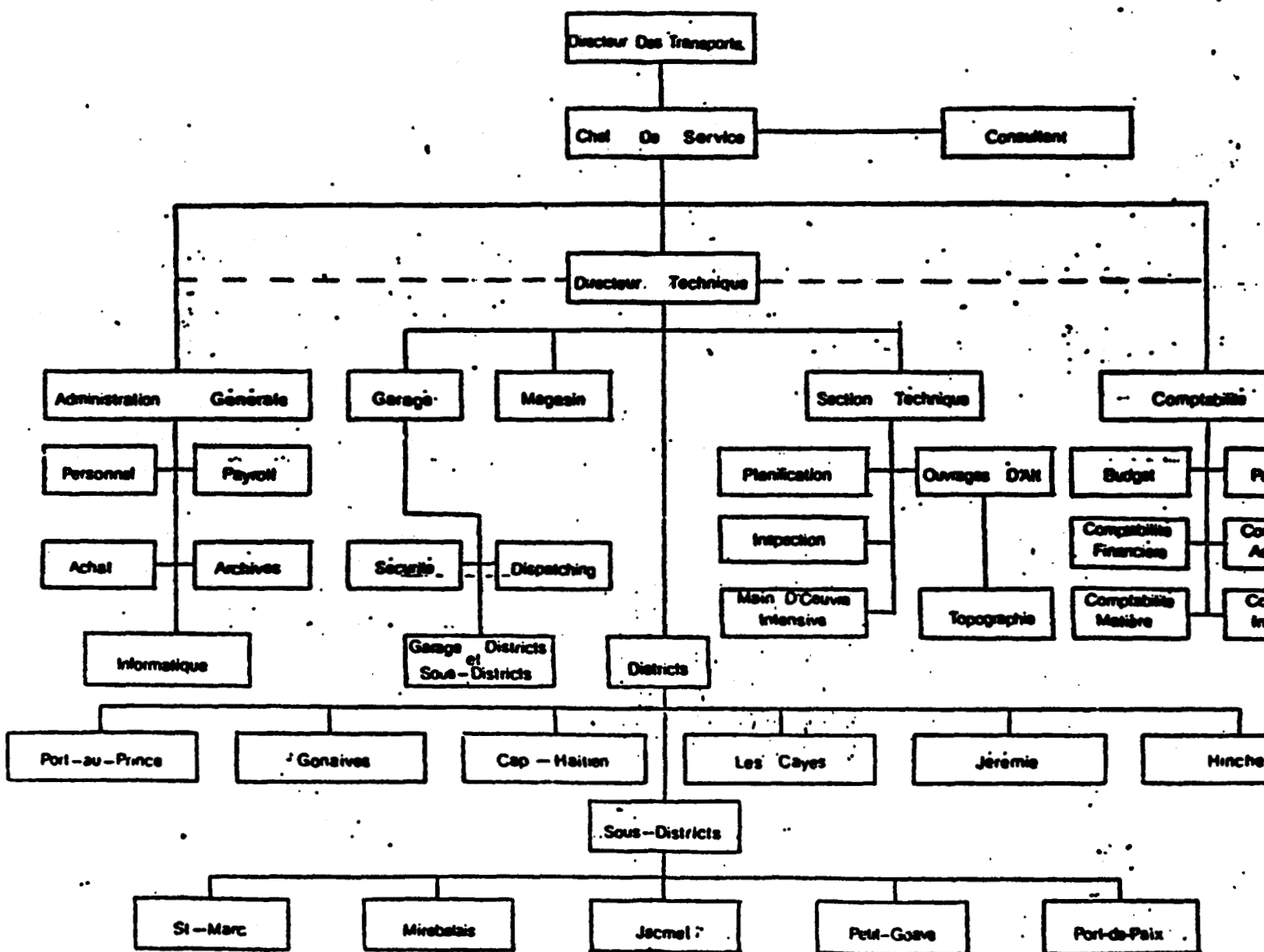
**DIRECTION DES TRANSPORTS
(D. D. T.)**

ORGANIGRAMME



SERVICE D'ENTRETIEN PERMANENT DU RESEAU ROUTIER NATIONAL

ORGANIGRAMME



SERVICE D'ENTRETIEN PERMANENT
DU
RESEAU ROUTIER NATIONAL
(SEPRRN)

INVENTAIRE DE L'EQUIPEMENT
DECEMBRE 1989

	EN INVENTAIRE	AU RANCART	A REPARER	EN SERVICE
1- VOITURES	9	4	2	3
2- VEHICULES UTILITAIRES	33	20	8	5
3- CAMIONNETTES	45	30	8	7
4- CAMIONS PLATEAU	12	10	1	1
5- CAMIONS A BENNE BASCULANTE	136	65	55	16
6- CAMION CITERNE CARBURANT	5	2	2	1
7- ATELIER MOBILE	2	1	-	1
8- CAMIONS REMORQUE	3	3	0	0
9- AUTOBUS	2	0	1	1
10- CAMIONS GRAISSEURS	10	4	4	2
11- NIVELLEUSES	29	10	12	7
12- BULLDOZERS	15	9	3	3
13- ROULEAUX 8-10T	11	6	5	0
ROULEAUX VIB. 1 1/2 T	39	27	12	0
ROULEAUX VIB. 3-5 T	33	0	15	18
ROULEAUX VIB. 15 T	13	3	8	2
ROULEAUX VIB. 25 T	2	0	2	0
14- PELLES RETROCAVEUSES	13	8	5	0
15- PELLES MECANQUES	15	5	5	5
16- CITERNE A EAU	20	8	4	8
17- CITERNE PNEUMATIQUE	12	12	0	0
18- COMPRESSEUR A AIR	19	10	6	3
19- APPAREIL A SOUDER	31	16	12	3
20- MONTES-CHARGES (FORK LIFT)	4	2	1	1
21- MALAXEURS DE BETON	19	7	8	4
22- DEPANNEUSES	2	2	0	0
23- BOUILLOIRES D'ASPHALTE	31	11	10	10
24- CONCASSEURS	2	0	1	1
STATION DE TAMISAGE	1	0	1	0
25- VIBRATEURS BETON	4	2	2	0
26- GROUPES ELECTROGENES	14	8	4	2
27- CHARGEURS DE BATTERIE	6	2	0	4
28- POMPES A EAU	12	5	5	2
29- MOTOCYCLETES	40	2	20	18
30- PLAQUES VIBRANTES	5	2	3	0
31- MOULES POUR DRAINS	20	0	0	20
32- USINE D'ASPHALTE 10 T/HRE.	7	2	3	2
- ASPHALT FINISHER	1	0	1	0
34- ASPHALT MELTER	1	0	1	0
TOTAL	678	298	230	150

Volumenes de Tráfico sin y con Proyecto
(TPDA)

A. Tramo Pont Sondé - Verrettes

<u>Año</u>	<u>Livianos</u>		<u>Buses</u>		<u>Camiones</u>		<u>Total</u>		<u>Incremento anual</u>	
	<u>Sin</u>	<u>Con</u>	<u>Sin</u>	<u>Con</u>	<u>Sin</u>	<u>Con</u>	<u>Sin</u>	<u>Con</u>	<u>Sin</u>	<u>Con</u>
1987	61	61	39	39	138	138	238	238		
1995 <u>a/</u>	74	156	48	56	168	148	289	359	2,5%	5,3%
1996	77	240	50	72	176	162	303	474	5,0%	32,0%
1997	81	349	53	100	185	207	319	656	5,0%	38,0%
2000	94	404	61	116	214	239	369	759	5,0%	5,0%

B. Tramo Verrettes - Mirebalais

<u>Año</u>	<u>Livianos</u>		<u>Buses</u>		<u>Camiones</u>		<u>Total</u>		<u>Incremento anual</u>	
	<u>Sin</u>	<u>Con</u>	<u>Sin</u>	<u>Con</u>	<u>Sin</u>	<u>Con</u>	<u>Sin</u>	<u>Con</u>	<u>Sin</u>	<u>Con</u>
1987 <u>a/</u>	10	10	0	0	24	24	34	34		
1995 <u>a/</u>	13	47	1	13	29	78	42	137	3,0%	19,0%
1996	13	47	1	18	30	83	44	148	5,0%	8,0%
1997	14	50	1	19	32	87	47	156	5,0%	5,0%
2000	16	57	1	22	37	101	54	180	5,0%	5,0%

a/ Año de apertura del camino.

Datos utilizados para calcular los beneficios agrícolasA. Datos por producto

	<u>Rendimiento (T/ha)</u>		<u>Precios de mercado (\$/ton)</u>	<u>Costos de producción (\$/ha)</u>	
	<u>Presente</u>	<u>+10 años</u>		<u>Irrigación</u>	<u>Pluvial</u>
Arroz	2,8	3,5	600 a/	970	250
Papa	5,0 .. 8,8	5,8 .. 10,2	228	211	79
Maíz	1,1 .. 1,8	1,4 .. 2,3	350	375	100
Cebolla	9,4	10,7	880	864	-
Tomate	14,5	18,4	805	900	-
Berenjena	10,2	14,2	176	1219	-
Frijol	0,5	0,9	995	440	160
Sorgho	2,3	3,0	367	-	178
Caña azúcar	45,0	57,0	10 b/	200	173
Banana	1,6	2,6	330	185	106

B. Superficie de producción. (hectáreas)

	<u>Caminos</u>					
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Arroz		3600	3265	6470	2395	7000
Papa		100	205	525		
Maíz	3060	60	205			
Cebolla		60	60			
Tomate		100	60			
Berenjena			40			
Frijol	2543	80				
Sorgho	2543					
Caña azúcar	283					
Banana	565					
Total	8994	4000	3835	6995	2395	7000
Area cultivada	5650	2000	2040	3500	1200	3500

a/ Para el arroz, se utilizó el precio a la frontera.

b/ Precio promedio de venta a los productores de azúcar.

Parámetros Utilizados para Calcular los Ahorros
de Tiempo de Viaje

	<u>Autos</u>	<u>Jeeps</u>	<u>Tap-Tap</u>	<u>Mini- buses</u>	<u>Camiones p/pasa jeros</u>	<u>Auto- buses</u>
- Valor del tiempo del pasajero (\$ por hora) <u>a/</u>	2	2	0,70	0,70	0,40	0,70
- Ocupación por vehículo <u>a/</u>	2	4	15	20	20	20
- % de pasajeros que viajan al trabajo o al mercado <u>b/</u>	75	75	75	75	75	75
- Velocidad media (km/h)						
sin el proyecto:	20	15	15	15	15	15
con el proyecto:	80	80	75	75	75	75

a/ Fuente: Estudio de factibilidad Pont Sondé-Mirebalais-Hinche. El valor del tiempo de los pasajeros de vehículos de transporte público es una estimación del valor del tiempo para los productores agrícolas. En efecto, la mayoría de los usuarios de transporte público son productores que van a los mercados para vender su producción y comprar bienes. No se tomaron en cuenta en este cálculo los obreros agrícolas ni las personas sin ocupación que no utilizan vehículos y que se trasladan a pie.

b/ Basado en datos proporcionados por el Ministerio de Obras Públicas.

CARRETERA PONT SONDE-MIREBALAIS

[illegible][illegible]

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
02												3142
61	484	508	534	560	589	618	649	681	715	751	789	828
03	214	224	235	247	260	273	286	300	316	331	348	365
94	204	214	225	236	248	260	273	287	301	316	332	349
99	104	109	114	120	126	132	139	146	153	161	169	177
29	555	583	612	643	675	709	744	781	820	861	904	950
19	20	21	22	23	24	26	27	28	30	31	33	34
26	447	470	493	518	544	571	600	630	661	694	729	765
11	1167	1225	1287	1351	1418	1489	1564	1642	1724	1810	1901	1996
36	38	40	42	44	47	49	51	54	57	59	62	65
0	0	0	0	0	0	0	0	0	0	0	0	0
47	890	934	981	1030	1081	1135	1192	1252	1314	1380	1449	1521
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
27	4123	4329	4545	4773	5011	5262	5525	5801	6091	6396	6716	10194

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
03											9283
11	327	343	360	378	397	417	438	460	483	507	532
43	150	157	165	173	182	191	201	211	221	232	244
08	114	119	125	132	138	145	152	160	168	176	185
43	45	47	49	52	55	57	60	63	66	70	73
54	57	60	63	66	69	73	76	80	84	89	93
90	31	33	34	36	38	40	42	44	46	48	51
33	87	92	96	101	106	111	117	123	129	135	142
97	1351	1419	1490	1564	1643	1725	1811	1901	1997	2096	2201
04	319	335	352	370	388	408	428	449	472	495	520
0	0	0	0	0	0	0	0	0	0	0	0
27	133	140	147	154	162	170	179	188	197	207	217
75	813	854	897	942	989	1038	1090	1144	1202	1262	1325
54	1107	1162	1221	1282	1346	1413	1484	1558	1636	1717	1803
19	4535	4761	4999	5249	5512	5788	6077	6381	6700	7035	16670

CAMINOS RURALES FLUJOS DE COSTOS Y BENEFICIOS (Miles de US\$)

CAMINO 1	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2009
INVERSION	153.7	153.7											
MANTENIMIENTO			25.6	25.6	25.6	25.6	86.5	25.6	25.6	25.6	25.6	86.5	-10.9
OPER. VEHICOS													
Pas. Privados			21.2	21.8	22.3	22.9	23.4	24.0	24.6	25.2	25.9	26.5	31.5
Pas. Public.			8.4	8.6	8.8	9.0	9.2	9.5	9.7	10.0	10.2	10.5	12.4
Vehic. Carga			32.3	33.1	33.9	34.7	35.6	36.5	37.4	38.3	39.3	40.3	47.9
AGRICULTURA			4.3	9.4	11.9	19.4	21.6	21.6	21.6	21.6	21.6	21.6	21.6
FLUJO NETO:	-153.7	-153.7	40.6	47.2	51.3	60.5	3.4	66.0	67.7	69.5	71.4	12.4	124.4
CAMINO 2	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2009
INVERSION	381.6	381.6											
MANTENIMIENTO			62.3	62.3	62.3	62.3	210.4	62.3	62.3	62.3	62.3	210.4	-26.6
OPER. VEHICOS													
Pas. Privados			21.4	21.9	22.5	23.0	23.6	24.2	24.8	25.4	26.1	26.7	31.7
Pas. Public.			61.0	62.6	64.1	65.7	67.4	69.1	70.8	72.6	74.4	76.2	90.6
Vehic. Carga			21.7	22.3	22.8	23.4	24.0	24.6	25.2	25.8	26.5	27.1	32.2
AGRICULTURA			119.0	120.0	121.0	121.0	123.0	123.0	123.0	124.0	124.0	124.0	124.0
	-381.6	-381.6	160.9	164.5	168.1	170.9	27.5	178.5	181.5	185.5	188.6	43.6	305.2
CAMINO 3	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2009
INVERSION	331.6	331.6											
MANTENIMIENTO			63.1	63.1	63.1	63.1	213.3	63.1	63.1	63.1	63.1	213.3	-27.0
OPER. VEHICOS													
Pas. Privados			25.2	25.8	26.4	27.1	27.8	28.5	29.2	29.9	30.7	31.4	37.4
Pas. Public.			67.9	69.6	71.4	73.2	75.0	76.9	78.8	80.8	82.8	84.9	100.9
Vehic. Carga			13.6	13.9	14.3	14.6	15.0	15.4	15.7	16.1	16.5	17.0	20.2
AGRICULTURA			90.0	95.0	100.0	110.0	112.0	115.0	115.0	116.0	117.0	117.0	117.0
	-331.6	-331.6	133.6	141.2	149.0	161.8	16.4	172.6	175.6	179.7	183.9	36.9	302.4

CAMINO 4	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2009

INVERSION	313.7	313.7											
MANTENIMIENTO			51.2	51.2	51.2	51.2	173.0	51.2	51.2	51.2	51.2	173.0	-21.9
OPER.VEHICOS													
Pas.Privados			14.9	15.2	15.6	16.0	16.4	16.8	17.2	17.7	18.1	18.6	22.1
Pas.Public.			47.5	48.6	49.9	51.1	52.4	53.7	55.0	56.4	57.8	59.3	70.4
Vehic.Carga			16.1	16.5	16.9	17.4	17.8	18.2	18.7	19.2	19.7	20.1	23.9
AGRICULTURA			66.9	78.1	89.2	112.5	135.0	157.5	157.5	157.5	157.5	157.5	157.5

	-313.7	-313.7	94.1	107.3	120.4	145.8	48.6	195.1	197.3	199.5	201.9	82.5	295.8

CAMINO 5	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2009

INVERSION	133.6	133.6											
MANTENIMIENTO			21.3	21.3	21.3	21.3	72.1	21.3	21.3	21.3	21.3	72.1	-9.1
OPER.VEHICOS													
Pas.Privados			7.1	7.3	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	10.5
Pas.Public.			20.9	21.5	22.0	22.5	23.1	23.7	24.3	24.9	25.5	26.1	31.1
Vehic.Carga			6.7	6.9	7.1	7.2	7.4	7.6	7.8	8.0	8.2	8.4	10.0
AGRICULTURA			30.0	31.5	33.1	34.7	36.5	38.3	40.2	42.2	45.0	45.0	45.0

	-133.6	-133.6	43.4	45.8	48.2	50.8	2.7	56.3	59.1	62.2	66.0	16.3	105.7

CAMINO 6	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2009

INVERSION	484.3	484.3											
MANTENIMIENTO			59.7	59.7	59.7	59.7	201.8	59.7	59.7	59.7	59.7	201.8	-25.5
OPER.VEHICOS													
Pas.Privados			22.3	22.8	23.4	24.0	24.6	25.2	25.8	26.5	27.1	27.8	33.1
Pas.Public.			61.9	63.4	65.0	66.6	68.3	70.0	71.8	73.6	75.4	77.3	91.9
Vehic.Carga			22.0	22.5	23.1	23.6	24.2	24.8	25.5	26.1	26.7	27.4	32.6
AGRICULTURA			100.0	105.0	110.3	115.8	121.6	127.6	134.0	140.7	147.7	155.1	218.3

	-484.3	-484.3	146.4	154.0	162.0	170.3	36.9	188.0	197.3	207.1	217.3	85.9	401.3