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SUBJECT - End-of-Project Evaluation Highway Maintenance Phase I
(Loan 521-005, Grant 521-0072)
REFERENCE -

The attached Project Evaluation Summary (PES) examines the status of the Highway Maintenance Project at the end of Phase I. The project is continuing as Highway Maintenance, Phase II under Grant 521-0084.

The PES follows the format proposed in AIDTO CIRC A-188 with the following exception: The section Changes in Design or Execution examines the extent to which recommendations considered in the preparation of the Phase II Project Paper are now in effect. Data contained in other sections of the PES provide a reference for measuring progress under Phase II.

JONES

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DRAFTED BY: PRM/EVAL: LKnott	OFFICE: USAID/Haiti	PHONE NO.:	DATE: 3/31/78	APPROVED BY: DIR: J. Herrioux ACT. DIR: John T. Craig
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A. I. D. AND OTHER CLEARANCES
ENG: TNagy
CAP: AMcDonald
PRM: JWilson
D/DIR: PMassey
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PROJECT EVALUATION SUMMARY

(End-of-Project Highway Maintenance, Phase I)

521-663

Mission USAID/Haiti		Project Number: Loan 521-005 Grant 521-0072	
Project Title: Highway Maintenance, Phase I			
Initial Obligation FY 1974	Final Obligation FY 1977	Completion of Project FY 1978	Total US funding Loan \$3,150,000 Grant \$2,050,000
Period Covered by this Evaluation: August 1973 - December 1977		Date of this Evaluation Review: March 27, 1978	

Summary

The project Highway Maintenance, Phase I, terminated December 31, 1977 three months after the original termination date of September 30, 1977. The project combined capital assistance and technical advisory services to the Service d'Entretien Permanent du Réseau Routier National (SEPRRN), the National Highway Maintenance Service of Haiti.

USAID provided capital assistance in the amount of \$3,150,000 under Loan 521-005 to fund construction of facilities and equipment purchases and \$2,050,000 under Grant 521-0072 to fund technical assistance and training. Technical advisory services and capital assistance for SEPRRN will continue under Highway Maintenance, Phase II, Grant 521-0084.

Under Highway Maintenance, Phase I, the Government of Haiti entered into a contract in 1973 with Hoshins-Western-Sonderewer, Inc. (HWS) a U.S. consulting engineering firm, to furnish advisory services for the organization of SEPRRN and training of SEPRRN personnel.

SEPRRN was established by government decree in 1972 as a semi-autonomous agency under the Ministry of Public Works, Transportation and Communications (TPTC). It lacked facilities, equipment, trained personnel and, at the time of the A.I.D. loan, was in the process of liquidating the liabilities of an unsuccessful predecessor maintenance organization.

During the four years of Phase I, SEPRRI has become an established road maintenance organization of definite if still evolving structure. Its employees number 860 of which 175 are staff and 404 are day laborers. SEPRRI now has facilities, equipment and trained personnel to maintain 1,000 km of roadway. The central shop in Port-au-Prince has been constructed, staffed, and equipped. The district shop at Cap Haitien has been renovated and a district shop constructed at Les Cayes.

Under the terms of the A.I.D. loan agreement, SEPRRI assumed responsibility for maintenance of Route 100 (North) and Route 200 (South) - the two national highways - and for maintenance operations in four districts. SEPRRI has exceeded these terms in assuming these additional responsibilities:

- maintenance of the 36 km of the new road to Jacmel;
- maintenance operations in one additional district and three subdistricts to make a total of eight additional areas in which SEPRRI crews now work.

Evaluation Methodology

This evaluation marks the end of Phase I of the continuing Highway Maintenance project and examines the status of the project as Phase II begins. During October and November 1975, Group Seven Associates, a managerial consulting firm under contract with A.I.D., conducted an in-depth evaluation of Highway Maintenance, Phase I. Recommendations which were the result of the Group Seven study and which are incorporated in the Phase II Project Paper are considered in this evaluation in terms of the extent to which they have been put into effect at SEPRRI during the past year.

Information on Haiti's transportation sector was provided by Robert Richmond, Economic Officer, U.S. Embassy, Port-au-Prince, Haiti.

Participants in the Evaluation

USAID: LJC:Wagov, Project Officer
PRG:BNott, Evaluation Officer

SEPRRI: Adrien Kormisant, Administrator

Hockins-Western-Sonderweiser, Inc. (HWS): Ned Herring, Project Officer

External Factors

SEPRRI was established as one of the prerequisites for the IDB loan for construction of Route 200. The two maintenance organizations which had preceded SEPRRI had proved unsuccessful: the approximately 1,300 km of national and departmental roads had deteriorated to the extent that none was open throughout the entire year.

The Haitian Government has recognized the importance of efficient road maintenance to its developing highway network. Its contribution to the project has increased over the four years of Phase I from \$780,000 in FY 1973-74 to \$2,679,000 in FY 1977-78. These funds finance SEPRRN operating expenses.

At the time SEPRRN was established its responsibilities were defined as follows: SEPRRN maintenance operations were to consist of:

- routine maintenance, or the work necessary to keep a road in the condition in which it was constructed;
- road betterment, or the work required to improve a local condition or eliminate a hazard.

Road reconstruction or major highway improvements were not considered a SEPRRN responsibility.

Based on the premise that both Route 100 and Route 200 were under reconstruction at the beginning of the project, it was assumed that SEPRRN would have an approximate two-year period relatively free from operational pressures in which to organize. Such has been the condition of Haiti's road network, SEPRRN operations have fallen into the category of road reconstruction and heavy maintenance throughout almost the entire period of Phase I. Only since 1976 has SEPRRN been in a position to plan and schedule routine maintenance for each district.

Goal

"To improve the standard of living of the rural poor and better integrate them into the mainstream of Haitian economic activity and overall development".

Sufficient data do not exist to measure the project's contribution to the goal by the indicators chosen for Phase I. There are:

- increase in small farmer income;
- decrease in unemployment;
- decrease in infant mortality.

The same goal has been retained for Phase II of the Project; however, a proxy indicator has been developed to measure project contribution:

"2,000,000 work/days of employment generated between 1977 and 1981".

Over a five-year period, 2,000,000 work days approximate 1,600 jobs. SEPRRN records will show the extent to which this objective is achieved.

The IDB and the World Bank continue their contribution to the goal in their road construction programs. The UNDP is planning construction of 75 km on the Central Plateau. USAID will make a further contribution with its Agricultural Feeder Roads project which began in early 1977. The construction of these additional roads will add to SEPRRN maintenance responsibilities and require an expansion of their maintenance operations.

Subgoal

"To assure the functioning of the road transportation network and the flow of goods and services between urban markets and export points and rural areas".

The project's contribution to the subgoal is discussed in terms of the measures of subgoal achievement in the project design.

Although data do not exist which measure traffic volume on the North-South highway, the Embassy Economic Officer estimates that over the past two years traffic has increased more than the 50% considered necessary for Phase I Subgoal achievement. There are approximately 2,000 commercial vehicles in Haiti. These consist of trucks, buses and vehicles which carry both passengers and commodities; there is still a shortage of large, heavy trucks. A primary national highway network which is hard surfaced is open at all seasons.

Again, there are no data on which to base a conclusion that a 50% increase in inter-regional trade of goods and service has occurred. Commercial activity has increased in areas where SEPRRN crews have been working. For example, in the Artibonite Valley, SEPRRN has recently graded a 16 km link which has become a farm-to-market road: farmers in the area have increased their rice acreage for commercial purposes.

There are indications -- although insufficient data exist to verify these indications -- that as roads are improved, vehicle maintenance expenses decrease and that as more farmers move their goods to market, transportation costs also decrease.

Roads remain the primary means of transportation in Haiti. Other than the roads, there exists only a small coastal shipping service for movement of goods.

Purpose

"To develop a nucleus highway maintenance organization capable of maintaining the national road system (Route 100 (North) and Route 200 (South))".

A discussion of the status of each end-of-project indicator follows: SEPRRN crews are providing both routine and emergency maintenance on Route 100 (North) and Route 200 (South). In addition, SEPRRN has assumed responsibility for maintenance of the road to Jacmel which, because of engineering design and the heavy incidence of slides during the rains, is more difficult to maintain than the North and South

routes. During 1976-77, the last year of Phase I, SEPRRI crews maintained over 900 km of roadway.

[From an original eight advisory positions established at the beginning of the project, the number of advisory personnel decreased to three during the last six months of Phase I and to one during the last three months of Phase I. The procedures introduced under Phase I continued during this period of decrease in advisory services although no new procedures were introduced.]

SEPRRI has acquired an ability for budgetary planning which, however, at present is oriented more toward personnel requirements than toward work plans for the districts. [SEPRRI has also introduced a modified maintenance management system which uses road inventories to define work needs and to schedule crews and equipment.]

The National Bank monitors SEPRRI disbursements however, the Bank's function is an auditing one which is required by law for all Haitian Government institutions. SEPRRI now has its own controller.

[SEPRRI personnel remain on TPTC payroll although their transfer to SEPRRI payroll has been recommended in preceding evaluations and is considered an indicator of end-of-project status for Phase I. This transfer is not likely to occur until SEPRRI has established its own pension plan which does not exist at present.] Employees remain on the TPTC payroll because of the pension and retirement benefits and reemployment rights to which they are entitled as employees of TPTC. District engineers have received in varying degree mechanized equipment based on their estimated maintenance requirements. [SEPRRI district offices are now staffed with maintenance supervisors who report to SEPRRI through the district engineer. A.I.D. financed equipment is now used as specified only for routine maintenance, road betterment, or emergency road repair. It is no longer used by TPTC for road reconstruction.]

[At the end of Phase I, SEPRRI had not yet succeeded in accomplishing its maintenance operations with a maximum use of labor rather than equipment. This remains one of the objectives of Phase II.]

Outputs

[Three shops now serve three major districts: the central shop, Port-au-Prince, occupies 0.5 ha of land to which SEPRRI now holds title. It is designed, equipped, and staffed to be the central overhaul facility and warehouse for SEPRRI. The shops at Cap-Haitien and Les Cayes are equipped to perform minor equipment maintenance operations in each district. [The design, construction, and renovation involved in completing the three facilities covered the four-year period of Phase I.] The work was carried out under subcontract with Haitian firms which were required to use U.S. standards for design and procurement. [The designs maximized the use of local materials and labor.]

One mechanized intervention brigade has been organized for reconstruction and heavy maintenance work. Regrading brigades have been organized in eight districts; only seven such brigades were considered possible for the end of Phase I.

[SEPRRN personnel have participated in orientation and training courses for mechanics, drivers, and heavy equipment operators.] These courses, initially organized by IWS consultants, are now conducted by SEPRRN personnel. [A permanent training ground for truck drivers and equipment operators was established in 1976 at the central shop at Port-au-Prince.]

[Twenty-two SEPRRN personnel] have trained abroad in road maintenance operations, equipment use, and welding.

Inputs

The Haitian Government finances SEPRRN operating expenses from two sources:

- a share of the 5% allocation from general tax revenues for transportation sector development;
- one half of the revenues from the gasoline tax.

Irregular and insufficient fuel tax revenues necessitate supplementary contributions from the counterpart fund. These become available only after protracted periods of shortfall. The fuel tax is providing less than 50% of SEPRRN operating expenses. Haitian Government funding of the SEPRRN operations budget may at present be placing a disproportionate strain on government resources.

[Under Phase I SEPRRN acquired some 250 pieces of road and shop equipment of which about 90 units are reconditioned US Government excess property.] At the beginning of Phase I, SEPRRN opposed the purchase of excess property because of the lengthened delivery time which resulted from inexperience in procurement procedures, documentation and delay in customs clearance. [In general, however, the equipment has proved satisfactory.]

Unplanned Effects

[The increase in oil prices during the Phase I period lessened the effectiveness of the original loan. Prices of materials rose 25% to 30%. Many of the objectives of Phase I were accomplished by tradeoffs: e.g., the purchase of excess property rather than new equipment.]

At SEPRRN, there are indications of a new social consciousness in the attitude of management toward employees. SEPRRN has provided uniforms for office and garage personnel. A health and accident benefit policy is under examination and educational programs are being considered.

Changes in Design and Execution

As this evaluation examines the status of the Highway Maintenance project at the completion of Phase I and after the Project Paper for Phase II has been prepared, these are no changes in design or execution proposed for Phase I. This section examines the extent to which Group Seven recommendations which were considered in preparation of the Phase II Project Paper have been put into effect at SEPRRN during the past year.

Recommendations

Management

- A maintenance management system should be designed to facilitate planning of annual maintenance work programs for each district.

A reporting system is also required to determine planned versus actual work program accomplishments, productivity and costs per unit of output. Until this system is installed there exists no solid base for calculation of manpower or equipment resource requirements or for distribution of resources to specific district networks.

SEPRRN has introduced a Maintenance Management system which uses road inventories to define work and to schedule crews and equipment. The system will be refined and extended during Phase II.

A cost accounting system was introduced in late 1977, shortly before the completion of Phase I. Its further development is planned in Phase II. The low literacy rate has proved a handicap in developing the reporting system. Measures to raise literacy levels will be a Phase II task.

Training

- Equipment operator skill training should be upgraded to include first echelon maintenance (basic servicing of a vehicle).
- Special emphasis should be placed on mechanic's qualifications, training and performance. The following should be considered:
 - French language technical (e.g., in Togo)
 - Local vocational school (e.g., CN 0)
 - Full-time advisory team instructors on site working directly with trainees on a maximum of 1 to 5 ratio.

- ✓ -- Provide reward system for superior performance.

Equipment operators are now trained to perform basic servicing of their vehicles.

A training course conducted in Creole in Louisiana was substituted for the training course in French. The training course in Creole produced the first five certified welders in Haiti. Training in local trade schools is being investigated under Phase II.

Instructors on site working with trainees on a maximum of one to five ratio is considered infeasible at present and under Phase II.

A reward system for superior performance in the form of opportunity for training abroad has been introduced.

Other Recommendations

- ✓ - Extend the range of advisory services up to include the Administrative Council and down to the operational mechanic level.
- ✓ - Establish a "methods and control" unit responsible to the Director General with authority to investigate and verify non-compliance incidents or failure of performance.
- ✓ - Establish a closer identity and responsibility between operator and equipment when the latter is being repaired.
- ✓ - Separate SEPRPN employees from TPTC payroll.

These recommendations, the extent to which they are in effect or should be put into effect will be further studied under Phase II. There is little likelihood that SEPRPN employees will be transferred from the TPTC payroll under the present circumstances of lack of a pension plan, retirement benefits and reemployment rights.

Lessons Learned

The importance in training of oral communication in Creole and the use of audio-visual methods became apparent early in Phase I. HNS prepared and translated nine training manuals directed primarily toward foremen and supervisory personnel. They serve as reference material for equipment maintenance; however, the literacy level of many workers remain a problem with which Phase II will be concerned. The work plan which Frederick R. Harris, Inc., the consulting firm for Phase II, is now developing includes measures for raising the literacy level of SEPRPN workers.