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FINAL REPORT

EVALUATION OF HAITI COFFEE ROADS PROJECT AND IMPLICATIONS FOR OTHER LABOR-INTENSIVE RURAL WORKS

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EXECUTIVE SUMMARY

A. The aim of this study was to evaluate both the performance and design aspects of the roads component (105 Kms) of the Haiti Small (Coffee) Farmers Improvement Project as of August/September 1979, when (the) 5 years of the Loan Agreement had elapsed. Socioeconomic baseline needs were to be investigated and implications for other labor-intensive rural projects were to be drawn.

B. All work on the five roads is labor-intensive, i.e., without the aid of any mechanized equipment or vehicles. Indeed, a minimum of hand tools has been made available to date.

C. The work force consists of 20-man teams (1 team leader and 19 workers). Three to seven teams work each of the five roads.

D. The construction stages on each road follow this sequence: (1) survey; (2) clear a 1-meter wide path; (3) widen to 3 meters; (4) widen to 5 meters; (5) place a Telford base (15 cm stones); (6) place a "macadam" cover of broken stone over base; (7) apply a "choker" mixture to bind the "macadam"; and (8) provide drainage facilities.

E. In general, the Haitian design standards exceed Kenyan and Honduran labor-intensive road specifications.

F. Although only about 2 Kms of road are <u>completely</u> finished, the roads overall are estimated to be 43% completed (integrating distance and point in construction sequence). Workmanship on the most advanced road was judged to be good to excellent.

G. The cost to date has been $455,000, or 67% of the original budget. G7 projected costs to complete the roads exceed those of the Consultant Engineer by a factor of 3.3 ($661,000 vs. $203,000).

H. GOH support of the project has been far less than might have been hoped; the effects of the neglect far less damaging than might have been feared.

I. The present organizational structure is adequate for completing the project. Additional U.S. technical assistance is not required to make necessary adjustments.

J. The engineering technical assistance input has been a one-man contribution from the U.S. Consultant Engineer. The quality of this technical assistance seems to have been adequate technically (excepting perhaps some drainage aspects) but very effective (despite minimal GOH support) due to the individual's personal characteristics (q.v. Sections V & XI under Results).

K. The major departures from project design were (1) reversal of planned roles for GOH engineers and the U.S. Consultant Engineer; and (2) exceeding the standards implied in the Capital Assistance Paper (CAP) to build the "cheapest all-weather roads possible."

L. The design, in our view, was deficient in its appropriateness for many physical and institutional realities in Haiti. The political-diplomatic circumstances in which the CAP must have been prepared can account for much or all of this. Moreover, however, "coffee roads" are being built in the absence of a highly valid design document.

M. Based on a preliminary field survey in one village, some definite positive socioeconomic results seem to be ascribable to the roads project.

N. A research design and questionnaire outline is presented to collect needed socioeconomic baseline information for future road projects.

O. Whether the roads project should stay in the Department of Agriculture or be shifted to the Department of Public Works (TPTC) hinges on two other issues: Is this an isolated project or a programmatic beginning? and, is the labor-intensive approach to remain lethargic or be potentiated by leaders and policies that are truly committed to rural development?

P. The implications for other labor-intensive projects in Haiti cluster around three central themes: a laissez-faire stance of central government, a rural development strategy capable of inspiring, and the right man in the leadership/layout function.

Q. 18 recommendations are presented.

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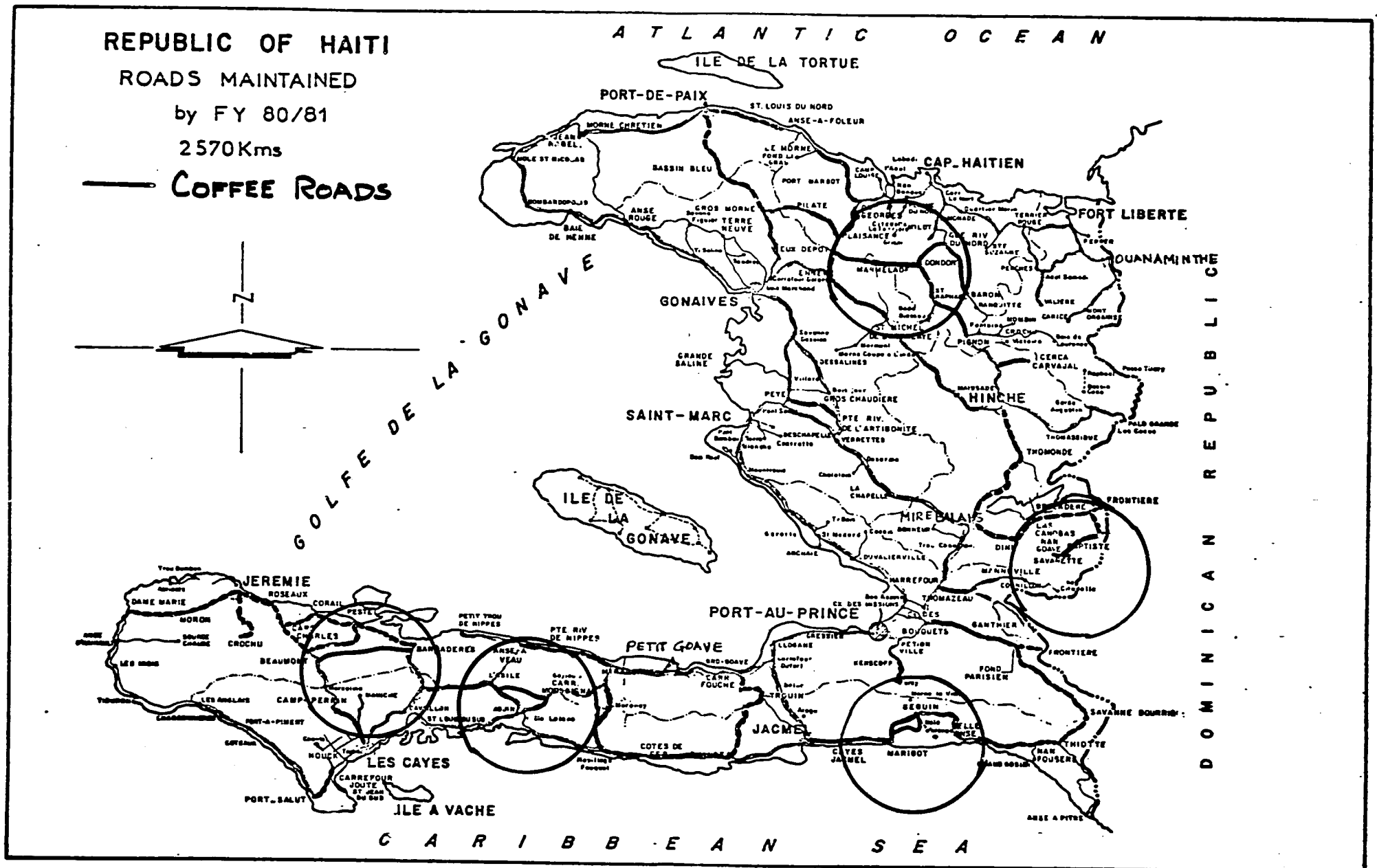
REPUBLIC OF HAITI
ROADS MAINTAINED
by FY 80/81
2570 Kms
COFFEE ROADS
N
ATLANTIC OCEAN
CARIBBEAN SEA
DOMINICAN REPUBLIC
GOLFE DE LA GONAVE
ILE DE LA TORTUE
PORT-DE-PAIX
ST. LOUIS DU NORD
ANSE-A-FOLEUR
MORNE CHRETIEN
BASSIN BLEU
ANSE ROUGE
BAIE DE HENNE
GROS MORNE
TERRE NEUVE
PILATE
PORT BARBOT
CAP-HAITIEN
FORT LIBERTE
OUANAMINTHE
GONAIVES
GRANDE SALINE
DESSALINES
SAINT-MARC
GROS CHAUDIERE
PTE RIV. DE L'ARTIBONITE
VERRETTES
HINCHE
CERCA CARVAJAL
THOMONDE
ILE DE LA GONAVE
MIREBALAIS
FRONTIERE
SAVANETTE
JEREMIE
ROSEAUX
CORAIL
DAME MARIE
MORON
CROCHU
BEAUMONT
LES ANGLAIS
CAMP PERRIN
PORT-A-PIMENT
PORT-SALUT
LES CAYES
CARREFOUR
ILE A VACHE
BARADERES
ANSE A VEAU
PETIT TROU DE NIPPES
PTE RIV DE NIPPES
PETIT GOAVE
GRAND GOAVE
CAMP FOUCHE
COTES DE FER
JACMEL
CAYES JACMEL
MARIGOT
SEGUIN
PORT-AU-PRINCE
DUVALIERVILLE
MARREFOUR
TROMAZEAU
BOUCHETS
PETION VILLE
FOND PARISIEN
SANTHIER
SAVANNE BOURRIQUE
THIOTTE
NAN FOUSERIE
ANSE A PITRE

INTRODUCTION

1. Auspices of the Evaluation

This evaluation was undertaken at the request of the USAID/HAITI Engineering Division. It was not identified as such, or scheduled, in the project paper (the Capital Assistance Paper, CAP)--which, however, called for annual evaluations, "preferably...near the anniversary date of the loan." The Loan Agreement was signed on July 30, 1974. The evaluation study began just after the fifth anniversary, in August of 1979.

2. Topics

The USAID/Engineering requirement was discussed in June as Group Seven (G7) was completing a previous evaluation. Prominent in the discussion was the fact that the Labor-Intensive Pilot Project (conducted by an engineering consultant firm) included in the Agricultural Feeder Road Project had not produced sufficiently useful data or analyses that might be translated into guidance for the optimum use of labor-intensive methods in other rural works. (See G7's Evaluation Study of the Feeder Roads Project, June, 1979.)

The present study picks up from the situation in June. It is evidence, of course, of a particular interest in the labor-intensive method on the part of USAID. Indeed, among all the questions we were asked to address, the one concerning implications of the labor method was among three to which we were to give greatest attention. The others were: How effective was the Government's support of the project? And, how effective was the technical assistance provided to the project?

3. Frame of Reference

Just as the evaluation was not part of a CAP-scheduled series, so also the questions to be addressed, and their sequence, do not mechanically follow the standard AID evaluation format (of the "Project Evaluation Summary"). Instead, Article I of our Contract "Statement of Work" (see Appendix), provided us precise guidance for the inquiry. We followed it, to the extent that our Table of Contents is simply a reordered paraphrase of the original questions.

4. Separateness of the Roads Activity

The CAP for the Small Farmers Improvement Project calls for the building or improvement of roads as one of four components of the project. The five roads in question (see map, p 1) are to provide access to coffee-producing areas and to Operational Centers which are being constructed as part of the project and which are generally located in villages not presently connected to the national road network. The roads are also intended to provide a means for the movement of fertilizer, technical assistance, and other agricultural inputs to the Operational Centers and to facilitate the movement of coffee from the producing areas and Operational Centers to export sites. In most cases, existing roads or trails serving these villages or coffee-producing areas cannot be used for vehicle traffic or can be used only at certain times of the year. In some cases, the most rudimentary footpaths provide the only means of access. But despite the logistical importance of this project component, the Evaluation Plan of the CAP (pp 133-5) makes no mention of the roads component of the project either in its listings under "Goal," "Sub-Goal,"

and "Purpose," or in the 18 indicators provided for appraisal of project progress. This may account for the fact that roads are scarcely mentioned, and they have not been in any sense evaluated, in any previous evaluations of the project.[1/]

One reason we mention this is that it goes toward explaining why it was necessary for G7 to develop its own analytic parameters and to seek new channels of information. Another reason is that the separateness of the roads activity was much on our mind as we went about our work. Separateness from other elements, in fact, translated into a virtual absence of documentation, commentary, analysis and other material applicable to the roads. Hence, a good deal of our work can be classified as primary (rather than secondary) research; and our findings and conclusions are largely original to us, we believe.[2/]

Finally, by way of introduction, we note that the budget ($675,000) for the roads element of the project consists of local currency only. No funding at all is provided by the U.S. dollar loan. The road budget for five years ($675,000) amounts to about one-third of the total GOH local currency contribution to the project overall. It amounts to just under 10 percent of the combined U.S./Haiti funding of the project.

[1/] A June 1977 evaluation looked primarily at the technological package offered by the project. A November 1976 report examined the credit aspect. In January 1979, a so-called "final impact evaluation" was done. Concurrently, with our own study, another is apparently being done, under the auspices of the USAID Agricultural Development Office, on extension and research.

[2/] Staffing of the team, also, was entirely by G7. No AID or GOH personnel joined in the study, as is called for by the CAP in evaluations that were to have been done (under its schedule).

With its relatively low budget and its remoteness from the mainstream of project planning and management, the roads activity presented itself as an orphan unlikely to survive or prosper. The extent to which this first impression stood up is the issue in much of what follows.

METHODOLOGY

Four discernible stages comprised this evaluation study: (1) background reading and planning; (2) data collection; (3) analysis and synthesis; and (4) write-up.

1. Background Reading and Planning

a. The Group Seven Team met in Alexandria, Va. and Port-au-Prince to discuss the project and generate the methodological framework and timetable. It is given in Figure 1.

b. A preliminary meeting was first held with the USAID Assistant Chief Engineer, and the Coffee Road Consultant Engineer in Port-au-Prince before the latter departed Haiti. Discussions with other Mission Staff, including the Agricultural Development Officer, were held upon arrival in August, 1979.

c. A meeting was held with the Chief Engineer to establish some relative emphasis to be given the factors stipulated in the Scope of Work.

2. Data Collection

a. Information was gathered by the following methods: file and document searches, personal interviews, direct observations, and a social survey.

b. Documents in English and French from the files of AID/Haiti and the Department of Agriculture, Natural Resources and Rural Development (DARNDR) were examined.

c. Fifty-two formal, semi-structured interviews were conducted in the Port-au-Prince area with 36 cognizant persons from various organizations. (For details see List of Interviews in Appendix). Interviews ranged in duration from 20 minutes to several hours.

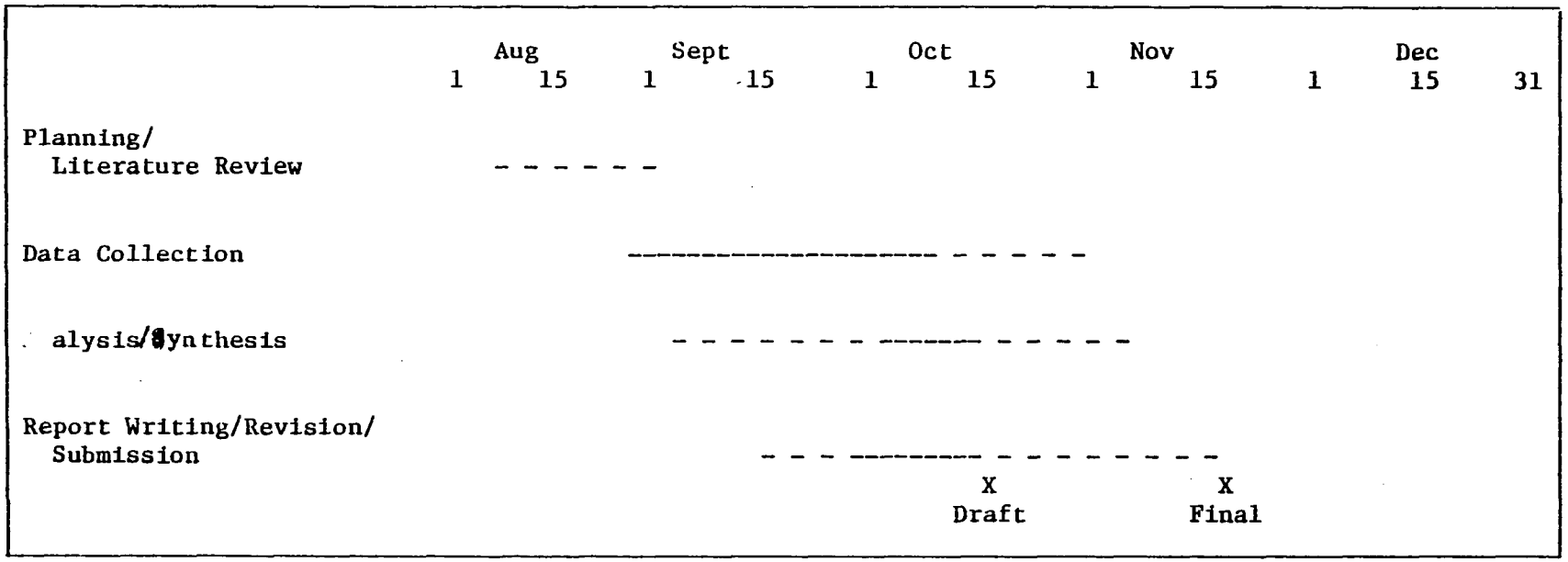

Figure 1 WORK SCHEDULE

d. With one or two exceptions, interviews were carried out in private. Tape recorders were not used by Group Seven. Although notes were taken, Group Seven does not ascribe particular statements or points of view to particular individuals. This allowed the interviewees to speak freely without fear of attribution, retribution, or social pressure. Respondents generally replied to questions candidly and seemed to offer their opinions freely.

e. Where appropriate, each individual was asked about his area of work, his estimation of various aspects of his own organization. This afforded a view of the organization from divergent perspectives, invaluable to understanding features and interactions.

f. To minimize subjectivity, quantitative and factual data were sought in order to buttress impressionistic information whenever possible. Questions were formulated so as to avoid leading the interviewees.

g. With three French-speaking members of the Group Seven Team and the fact that some of the interviewees spoke English, language was not a problem. Whenever needed, our only non-French-speaking team member was accompanied by our Research Assistant for translation/interpreting.

h. Six field trips were undertaken to examine the current status of the coffee roads. (See Fig 2.) Eighteen (18) work crews were observed in operation during the course of these visits.

i. In addition, a small-scale socioeconomic survey was carried out in Fond Jean-Noël (a village on the Pérédo-Macary Road). Fifty (50) local residents were interviewed in Creole by 3 trained, Haitian G7 interviewers. The sample was made up of:

5	local leaders
13	farmers
17	market people
15	road workers
50	total

Date 1979	Travellers	Place	Purpose
6/4	Davidson/Pettis	Pérédo-Macary	Inspection of road site and observation of work in progress
9/6	Davidson/Milord/ Jolivert	Baptiste-Savanette	" "
9/10/11	Davidson/Milord/ Jolivert	Dondon-Marmalade	" "
9/14	Davidson/Hodson/ Milord/Jolivert	Peredo-Macary	" "
9/18	Davidson/Milord/ Jolivert	Laurent-Beaumont	" "
9/19	Davidson/Milord/ Jolivert	Virgile-l'Asile	" "
10/2-5	Baptiste/Bastien/ Cadestin	Fond Jean-Noël	Socioeconomic field survey

Fig 2 FIELD TRIPS

The interviewers worked from nontransparent Interview Guides covering various socioeconomic topics. (See Appendix.)

3. Analysis and Synthesis

a. Data, impressions, tentative conclusions, and potential recommendations were all discussed and analyzed within the Group Seven Team to get a consensus and thus increase the reliability of our reported findings and suggestions.

b. We sought to verify all of our information before reporting it, within the time allowed.

c. Where indicated, we anchored our interpretations in two important reference works: Opportunities for Cost Reduction in the Design of Transport Facilities for Developing Regions, Institute of Transportation and Traffic Engineering (ITTE), Univ. of California, 1970; and Peasants and Poverty: A Study of Haiti by Mats Lundahl, Croom Helm: London, 1979.

4. Write-Up and Submission

a. Appropriate members of the Group Seven Team took primary responsibility for drafting particular sections.

b. Various other members reviewed, edited, amplified and/or commented as necessary.

c. Wherever appropriate, the evaluation results are presented under headings of Finding(s) and Commentary.

d. The report went through three typings, the first two in Haiti, the final in the Group Seven Office in Alexandria, Virginia.

e. The Draft Final Report was delivered to USAID/Haiti on October 11, 1979.

f. A meeting took place on October 12, 1979, in the USAID Mission to discuss the major findings and recommendations.

g. This Final Report is being submitted to USAID/Haiti, as specified.

EVALUATION RESULTS

I. Current Construction Practices

FINDINGS:

1. Road Design

The design requirements of a road[1/] are a function of several factors: (a) the weight and frequency of the traffic expected to use it; (b) the nature and supporting capacity of the soil on which it is placed (subgrade); and (c) the materials used for its construction (base and surfacing). Conditions normally vary so widely that there are no exact formulae for determining the required thickness of roads of the type being discussed here. There is, however, a wealth of experience, much based on research, which permits arrival at satisfactory empirical solutions.

The problem then is to assess properly these factors as they affect the coffee roads.

a. Traffic: On these roads, traffic can be expected to be minimal and consist largely of trucks and four-wheel drive vehicles with little two-wheel drive traffic. No formal estimates are available, but the number would probably be an exceedingly small number by any design standard. However, it is reasonable to assume that truck loads will approach the maximum vehicle capacity and capability taking into account the steep grades to be climbed. This suggests that 9000 lb-wheel loads (the usual maximum used as a basis for design) will probably be exceeded occasionally, if not frequently. This factor is reflected in the design of the roads referred to in this report.

1/ Technically, of the traffic-supporting parts of a road.

b. Subgrade: The nature and supporting capacity of the subgrade is probably the most difficult factor to determine. It often varies radically from location to location as well as with changes in moisture. While approximate values can be estimated by experienced personnel, accurate analysis requires extensive laboratory testing, a luxury not practical for low-cost roads.

In developing a "standard" for these roads, a method of assessment of the subgrade was adopted using a "pocket penetrometer." Readings of resistance to penetration of the subgrade were reportedly made at appropriate locations. Readings were correlated through a graphical approach (see Appendix) to determine the required pavement thickness for the conditions pertaining.[1/] We saw no evidence that the penetrometer is now in use to determine variations which might be appropriate in actual construction to reflect changing subgrade conditions.

c. Materials: Economical road construction of this type depends heavily on making maximum use of suitable materials locally available, i.e., rocks, gravel, suitable soils, etc.

Such materials are usually placed in layers or (sometimes) mixed. The most economically obtainable and least stable material is placed on the bottom. It is important to recognize that a considerable variety of naturally-occurring materials may be used satisfactorily if they are used properly and in the proper amount. "Properly" not only means economical usage of that which is available, but, just as importantly, gaining economic advantage by varying the thickness to reflect varying conditions.

For this project, a two-part "standard" was adopted using either 6" or 10" of hand-placed rock base ("Telford" base) on which is placed either 3" or 6"

[1/] For details, see "Final Report Labor-Intensive Road Program-Small Farmer Development Project-Haiti," (Undated); Prepared by: Hoskins-Western-Sonderegger, Inc.

of broken stone (macadam). This is to be held in place by applying a "surfacing" of mixture of lime, bagasse (sugarcane ash) and selected soil, all of which which hardens to provide a nonraveling surface.

The road design adopted for this project, when compared to a theoretical categorization, falls in between Type II and III as presented in Fig. 3.

2. Planning and Construction Sequence

a. An early activity consisted of determining where the roads were to be built. Once the general areas were determined administratively, it was necessary to determine exact alignments and the locations for the connections to the existing road network. Most existing roads are located in the lower elevations or follow natural valleys while coffee is usually grown at the higher altitudes. This means that the roads generally traverse mountainous terrain with substantial variation in elevation, often in the magnitude of two to three thousand feet. Such differences in elevation commonly involve substantial excavation, rock removal, switchbacks, and retaining walls as well as heavy vertical grades with resulting erosion problems.

b. Topographical maps were studied to determine suitable approximate routes, following which reconnaissance studies were reportedly made in the field. Once the routes were decided, field layout was undertaken. Where practical, existing trails or footpaths were followed, but alignment was normally controlled by the allowable vertical grade with 6% set as a limiting goal. Since deep cuts and high embankments are not practical in labor-intensive work, this means holding close to the mountainsides, following the irregularities while changing elevations vary gradually. The rate of change

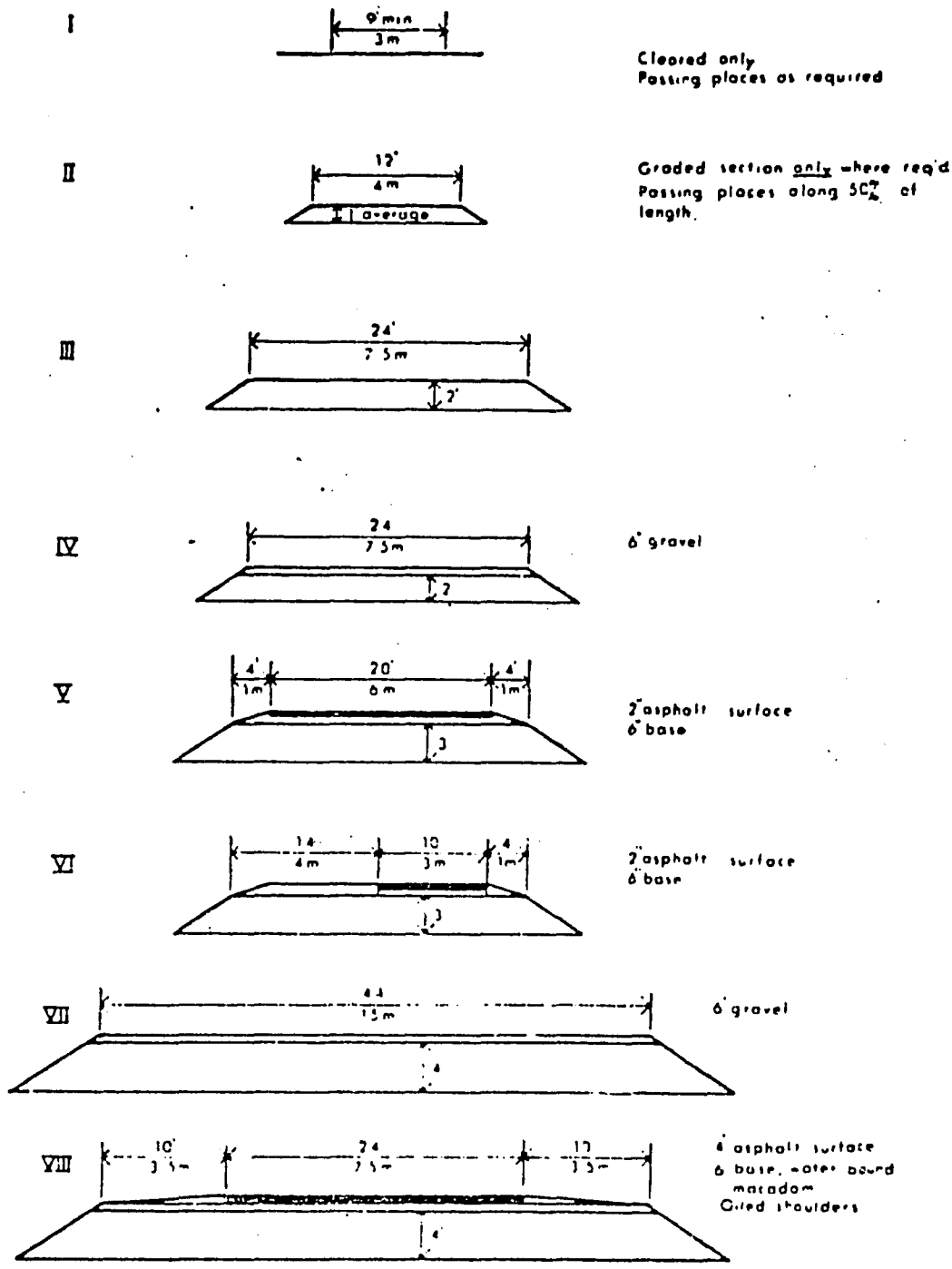

Figure 3. Typical Configurations for Roads with Two Traffic Lanes or Less

(Reproduced from ITTE, Univ. of California Report 1970, p.25)

in elevation was controlled by the use of the abney level (a light, hand-held surveying instrument used to measure vertical angles). Clearing undergrowth for lines (or the trial lines) of sight was a requirement necessary to obtain greater accuracy of reading. A foreman and about 10 laborers were used to clear growth and, generally, to assist the surveyors.

c. The next operation consisted of clearing and rough-leveling a 1-meter-wide "inspection" path to examine the terrain, the soil and the rock conditions. Changes in the alignment were made when found to be desirable. Two or three teams were used for this work.

d. Next, the 1-meter path is widened to a 3-meter road. This is intended to provide access by vehicles under good weather conditions, pending the construction of an all-weather road. In some cases, such roads have already served for up to 2 years and will undoubtedly serve longer before they are widened and surfaced. It is to be noted that little effort is directed toward stabilization of slopes or providing drainage at this stage of construction.

e. Many months or even years may intervene between the 3-meter widening and the time the road is widened to the ultimate 5-meter width. The 5-meter stage not only involves widening but also includes sloping the banks to minimize slides, building retaining walls, removing rocks, improving grades and other work in preparation for the placing of the surfacing materials. Our observations indicate that drainage at this point is considered only in the most obvious problem areas. Crews are dispersed along the road for this stage.[1/] Competition between the crews is apparently encouraged. It should be noted that the actual widening may vary from 5 meters somewhat in order to provide space for ditching or to avoid heavy rock outcroppings.

[1/] Reportedly based on project experience indicating better production this way rather than through concentration of all work crews in one area.

f. Following the widening, the "Telford" base is then placed. This is usually placed some appreciable time (months) after the 5-meter widening. It consists of first bringing the subgrade to the exact grade, alignment and width (within practical tolerances). Stakes and string lines are used to control the work. Short curves are established by using string for a radius. It is stated that instruments are used for longer curves. None were observed during this study.

After the grade and road edges have been established, rocks measuring approximately 6 inches (15 cm) are gathered from the roadside, having been saved and piled from the previous widening activities, or when not available closeby, carried from some more distance source. They are usually head-carried one at a time. They are then placed, first to form the road edges then to cover the space between. They are "placed" as closely together as practical (not cut) with the voids filled by smaller rock. The individual rocks may be hand-tamped for firmer seating or, on one road, an improvised hand-pulled roller is used.

This procedure results in a relatively solid, though slightly irregular, $6^{\pm}$ inch stone base, 5 meters wide. Each crew consists of "carriers" and "placers" with progress depending to a large extent on the availability of rock closeby. Not too many laborers can be utilized at one site for placing, so the practice is to have similar operations active at appropriate intervals.

g. After the base is laid, present plans call for placing a "macadam" cover of several cms of broken stone up to about 2 inches maximum size. The material is prepared by hand-breaking large stone with hand-held hammers. The stones are placed over the entire surface with a greater thickness on the middle

3 meters since that area will carry most of the traffic. This operation may occur soon after the placing of the Telford base or may be delayed. Immediate road usage will undoubtedly displace these stones unless they are "choked" to prevent displacement.

h. In order to bind the macadam stones and to provide a smoother riding surface, it is planned to cover the surface with a "choker" mixture of lime, sugarcane ash (bagasse), and soil. Some experimentation has taken place (reportedly on about 2 Kms) to determine proper proportions, but this phase of construction has not been undertaken otherwise. The best mix is said to have been determined, but results have not been recorded. During a recent inspection, a test pit was dug in the "best" experimental section to examine the pavement composition and the effectiveness of the choker. The pavement appeared stable and satisfactory. The choker material appeared to consist chiefly of plastic soil, but showed indications of foreign materials said to be the lime and bagasse. It had not hardened in the sense of being brittle. It is noted that other sections of the road which have not received the choker covering appeared equally stable either from roadside soil having been purposely added or from infiltration of soil from rains or other natural causes.

It should also be noted that this section has not yet been subjected to significant traffic.

The experimentation has been limited to the Pérédo-Macary road and primarily to the limited test sections consisting of about 2 Kms.

i. The final activity planned for these roads is the placement of drainage facilities. Reportedly, where required, this will consist of paved side ditches, paved run-off ditches and surfaced swales to allow cross drainage. There is no intent to build crossroad culverts, bridges, or paved fords.

The above sequence of construction may not always be followed strictly. Practical considerations of access, work conditions, etc, may favor undertaking later phases of work at some points before the preceding phase has been completed throughout.

3. Quality of Workmanship

The quality of workmanship could be best observed on the stone work on the Pérédo-Macary road. It was good-to-excellent. Grades and alignments were being carefully set and the stone well placed. Particularly noticeable were the dry-stone masonry retaining walls. They were substantial and well built as well as extensive. While the Telford base presented a well built appearance, one must be mindful that only hand-tamping was available for subgrade compaction. It can be expected that when subjected to heavy wheel loads, the base will become irregular with some base failures because of uneven subbase support.

The quality of workmanship on other roads was difficult to assess because work to date has consisted primarily of earth and rock removal.

4. Personnel Organization

The CAP specifies that hand labor or labor-intensive methods will be used for the construction of these roads to the "maximum possible extent." The program is under the technical direction of a chief engineer who has 2 "surveyor" assistants. Each of the 5 road construction sites (see map, p 1) is supervised by a foreman. The labor force consists of work crews of 1 chief and 19 laborers, each. Varying numbers of crews are employed for each road and all laborers

are locally recruited.[1/] There is presently a total of 25 crews employed. Each crew is assigned a specific task such as widening, drainage, breaking rock, placing rock, etc. A crew's assignment may be changed as conditions dictate.

We observed that, generally, there was a tendency for the laborers within any one crew to work too closely together, not leaving sufficient space for free movement of tools without interfering with each other.

5. Tools

The work to date has been accomplished with a very minimum of tools and is thus super-labor-intensive. The tools available include shovels, picks, hammers, sledge hammers, hoes, machetes, wheelbarrows, etc. Many are in good condition. Shortages are evident. Some laborers were observed using broken picks or iron rods to break stone. Others were using broken wheelbarrows as 2-man carrying-containers. Most stone is head-carried, one at a time. Foremen on all projects expressed the need for more tools, especially hammers, sledges, picks, and wheelbarrows.

6. Comparison of Construction Standards

A comparison of construction standards and methods of construction in Haiti as compared to labor-intensive road programs in Kenya and Honduras[2/] indicates

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1/ by the foreman.

2/ The Study of Labor and Capital Substitution in Civil Engineering Construction. World Bank Transportation Dept., September, 1978.

that Haiti's standards generally exceed Kenya's and Honduras' and the methods of construction are more labor-intensive.

Both the Kenya and Honduras standards call for gravel-surfaced roads whereas the Haitian standard is the much higher and more costly Telford base with choked macadam-riding surface. The Haitian-surfaced width is wider than the Kenyan (5 m. vs. 4 m.) and about the same as the average Honduran width. (These vary with terrain.) The maximum vertical gradient for Haiti is less (6% vs. 8% for Kenya and 8% to 12% for Honduras) though each permits higher grades for short distances.

It is interesting to note that Kenya experimented with alternate road designs before arriving at the one currently being used. There is no evidence of similar experimentation in the Haitian program.

Some differences in construction methods are significant. In both Kenya and Honduras, some use is made of mechanized equipment: trucks, power drills for hard rock, tractors and wagons. None of these is used in Haiti. Studies have indicated greater flexibility in the use of materials and cost reductions for longer hauls where mechanized (or animal-drawn) transport is available.[1/]

Both Kenya and Honduras place much greater emphasis on drainage at earlier phases of construction than does Haiti. This is good practice to which Haiti tends to give little emphasis.

While the Haitian roads are constructed in phases, i.e., widening, paving, drainage, etc., as described above, often with considerable time intervals between, the Kenyan and Honduran programs complete the road as one operation.

1/ Animal-drawn vehicles are rarely seen in Haiti.

The Haitian approach permits earlier access on a limited basis, but results in some repetition of work due to erosion or double handling.

COMMENTARY:

In making comments on the design and construction methods, it must first be borne in mind that there is no "hard and fast" or "right" method for designing this type of road. While grades and curvatures can be determined from the types of traffic anticipated, the low volumes and infrequency of traffic (as well as maintenance assumptions) do not lend themselves to normal design practices. Therefore, while empirical methods may provide indications, the final determination of how wide the road should be or how thick it should be under various conditions is largely a matter of experience and judgment.

A. Width: The determination of road width seems to have been arbitrarily decided in the CAP at 16 feet or by local custom at 5 meters.[1/] This width is adequate for low-volume 2-lane roads. The anticipated traffic, by most standards, warrants a 1-lane road. Based on the economics only, the 2-lane road seems excessive when it is recognized that a narrower pavement with adequate turnouts for passing could be built and would function with a very minimum of delay or inconvenience to traffic and at significantly-reduced costs.

This becomes especially apparent when observing the Virgile-L'Asile road which contains the only stretch of Telford base which has been subjected to traffic for any significant time. Most of the road is overgrown with weeds

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1/ Approximately equal.

and grass except for the two wheel tracks. The outer 0.5 to .75 meter on each edge serves no purpose in providing riding-surface for vehicles. The effort expended in this unused width could be used to better advantage elsewhere in the construction. To provide for the occasional needs of passing vehicles, extra width would normally be provided at all sharp curves and at appropriate intervals along tangent sections (say 250 meters). A width reduction would not be applicable to those roads which may generate appreciable traffic (say, in excess of 50 cars per day).[1/]

B. Thickness: Assuming that an adequate subbase had been prepared, the pavement thickness which has been adopted as "standard" would, by most criteria, be considered to be overdesigned for the anticipated traffic. But since there will probably be a minimum of recognition of actual subbase conditions, any overdesign will tend to error on the side of a better pavement. In addition, there are a number of factors involved here not common to more sophisticated construction which should be considered. For example, the Telford base consists of rocks about 6" thick. While this may be excessive under most conditions, it requires little or no more time or cost to carry and place, say, a 4" rock rather than a 6" rock, and the additional thickness provides that much

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[1/] With regard to this topic, Chapter II of Opportunities for Cost Reduction in the Design of Transport Facilities for Developing Regions states: "Generally roadway construction costs increase with increasing width. In mountainous or other rough terrain where excavation is a major cost, changes in road width have a substantial effect on total costs" and also "for single lane roads, intended for two-way operation, a 9-ft width can be used with passing places provided at frequent intervals."

insurance. And, the level of maintenance can be anticipated to be low, therefore, some additional "maintenance proofing" can be justified. We are therefore not inclined to fault this design standard.

What is questioned is the apparent lack of consideration for flexibility of design. As stated earlier, subgrade conditions vary appreciably from one point to another. Good engineering practice reacts to those changes by strengthening where required or reducing where permitted. Our site visitations have made it evident that the standard was not required on some rock-cut sections of the Pérédo-Macary road, but was inadequate on some of the more poorly-drained and poorer-soil sections of the Virgile-L'Asile road where some failures have occured after 1-1/2 to 2 years of limited usage.

C. Materials: Also pertaining to the design, or more accurately, the use of materials, we have been unable to detect any flexibility permitting deviation from the present standard. It is suggested that there are many sources of "bank-run" materials in Haiti (some used in the Feeder Road Program or as base for the North-South roads) which would be adequate for the coffee roads as an alternate to the Telford base, especially where steep grades are not involved. Another alternate in the vicinity of rivers could be the use of river gravel, mixed, if need be, with natural soil binders. Any alternative would, of course, depend on availability, and hauling distance, and would require changes in work procedure and tool usage. But planning such changes is but part of the essence of basic road engineering.

Guarded suggestions for considerations of such alternatives have been met with a staunch defense of the present standard and insistence that the alternatives would be short-lived when, in fact, if properly designed and constructed, they serve worldwide.

D. Drainage: The installation of drainage appears to be considered as a final embellishment to the road-building process whereas good practice dictates that at least the rough drainage be provided in the very earliest stages of construction. It can be argued that the need to provide early access to communities and the fact that some roads have experienced two rainy seasons without major drainage justifies delaying drainage considerations. Yet, it is evident that delay in installing the drainage has resulted in failures and deterioration especially where the Telford base has been in place for some time. This is particularly noticeable in cuts where no ditch has been provided and where the back slopes slough down onto the Telford area. Providing at least basic drainage at the 3-meter stage and substantial drainage at the 5-meter stage would extend the usage of the original roadway until such time as paving is placed or it would more adequately protect paving which has been placed by keeping the subgrade drier and minimize failures.

E. Choker: As was discussed, the "standard" anticipates a prepared "choker" to be applied to the surface to prevent or minimize stone displacement. In theory, this is a sound procedure. In practice, the need for a "manufactured" choker is questionable. Examination of the experimental choked section failed to indicate any substantial improvement over other sections which had been "choked" either by the intentional placement of natural soil filler or from the unintentional placement by natural silting. It is suggested, therefore, that the "choker" procedure be reexamined to determine if the use of selected soils spread over the surface could not replace the more costly and involved process of obtaining and mixing lime, bagasse, and soil.

F. Use of Tools: In general, the laborers make good use of tools, given the conditions under which they work and the condition of the tools themselves. As a practical matter, some requirements exceed the capability of the available tools. It is not productive, for example, to break large hard rock masses with hand tools. Neither is it productive to head-carry rock for long distances, nor move earth without wheelbarrows. The CAP proposes the use of hand-labor to the "maximum possible extent." It is not inconsistent with that principle to furnish well-designed hand tools or to provide a truck or a tractor with wagon for transporting rock or gravel over longer distances than is practical for head-carrying. Power-drilling would also seem appropriate on a part-time basis when substantial hard rock is encountered. In short, some flexibility in the labor intensiveness could be permitted thus increasing productivity without violating the labor-intensive concept.

G. International Comparison of Construction Standards: The Haitian design generally exceeds the Kenyan and Honduran designs in width, vertical grades and pavement standards. The Ministry of Public Works design officials, although not involved or consulted on the Coffee Road Program, strongly support the Haitian standard as the minimum which should be built under Haitian conditions. It is unclear whether their conviction is based more on technical requirements or pride in the quality and serviceability of the ultimate road.

II. Advantages and Disadvantages of Observed Construction Practices

1. Construction Sequence

FINDING:

The overall coffee road construction sequence involves providing a marginally-usable road at as early a stage as possible. Such early construction may exist for an extended time, without maintenance, until subsequent improvements for widening, surfacing, and drainage are provided.

Advantage: This procedure permits a limited amount of vehicular access relatively early in the construction schedule. It also permits some degree of access throughout a greater length of the road in the event the program should be terminated or be delayed indefinitely. Alignment or grade adjustments can also be made at various stages of construction with minimum loss of previous work.

Disadvantage: Building in stages means that either some needed aspects of construction are delayed and earlier deterioration results or that work is performed which subsequently may have to be reworked to fit the finished facility. An example is drainage.

COMMENT:

This is usually a trade-off. If completion of the project is reasonably assured on an uninterrupted schedule, it would normally be desirable to build the completed facility right along. If final completion is in question or if funding is in doubt, however, it may be more desirable to provide some minimum facility regardless of the limited service provided.

2. Drainage Installation

FINDING:

The installation of drainage has been given a low priority in the construction sequence. It was observed, for example, that on the Virgile-L'Asile road, where the Telford base has been subject to traffic for up to 2 years, that failures of the base were associated with poor drainage and weak subgrades.

Advantage: The only gain to delaying drainage work is to permit more mileage of graded surface at an earlier date.

Disadvantage: Not providing for drainage in the initial construction phases can result in serious erosion, interruption of usage, and repetition of work. In addition, it contributes to wet and, therefore, weak subgrades with resultant riding surface failures, rutting and pot-holing.

COMMENT:

It is a generally accepted principle that good drainage, installed as early as practical, is fundamental to good road construction. The practice is not adhered to and, apparently, not understood in this program. Evaluation of the construction procedures by a qualified drainage engineer would undoubtedly suggest specific remedial practices.

3. Degree of Labor-Intensiveness

FINDING:

The construction is totally labor-intensive.

Advantage: The total absence of mechanical equipment completely eliminates the need for logistics for fuel, parts, servicing, etc., and thus--except for financial and technical support--makes the work self-supporting within the local community.

Disadvantage: On occasion, conditions are encountered which are not practical to solve without recourse to a minimum of mechanized assistance. The total lack of equipment also makes otherwise viable alternatives impractical in the use of construction materials.

COMMENT:

In reviewing labor-intensive programs in other countries, it should be noted that some minimum mechanical equipment is provided as a practical compromise in the interest of better progress. Such minimums usually consist of tractors with wagons or trucks for hauling, and rock-drilling equipment when extensive hard rock is encountered.

4. Standardization of Design

FINDING:

A single road design standard is followed which provides for little or no adjustments to accommodate changing conditions.

Advantage: Design standards tend to insure uniform methods and quality of construction thus encouraging equality regardless of location or supervision: Standards tend to minimize engineering and technical supervision requirements.

Disadvantage: A rigidly-adhered-to standard ignores the natural variations of field conditions and, therefore, tends to cause uneconomical "over-construction" or failure-prone "under-construction."

COMMENT:

While basing construction on a standard is a practical necessity, the standard should provide sufficient flexibility to adjust to conditions as found--or, should be so interpreted. It should also permit or, indeed, encourage alternate designs when the economics indicate the need. The standard for coffee roads is not so interpreted.

5. Work Force Organization

FINDING:

The work force consisted of 20-man teams, including a team leader. Each road is supervised by a foreman. The teams varied from 3 to 7 for each road and were spaced out over the section of road being worked on.

Advantage: The teams' sizes are manageable, especially since each team is involved in only one type of activity at any one time. The foreman can supervise the number of teams because the work progresses or changes in nature very slowly.

Disadvantage: None was discerned.

COMMENT:

The organization and spacing of work crews appear to work successfully. The spacing of crews serves to minimize inter-crew discussions and improve production. It would appear, however, that if the number of crews were increased appreciably, more foreman-assistance would be required.

6. Compaction Equipment

FINDING:

Compaction of both the subgrade and the Telford base is extremely limited. Some hand-tamping was observed and a light hand-pulled roller was available on the project.

Advantage: The only advantage in not providing adequate compaction is not having to provide and maintain the necessary mechanical equipment.

Disadvantages: Adequate compaction cannot be achieved by the methods being employed. Pavements built without adequate compaction will be deformed and will experience at least local failures when subjected to modern truck wheel-loads. Maintenance requirements will be considerably greater than otherwise.

COMMENT:

Although quality will be sacrificed and maintenance requirements greater, it would appear difficult to justify providing mechanical compaction on an otherwise totally labor-intensive project. Compensation can be obtained to some degree by more attention to correction of weak subgrades and hand-tamping of loose soils in the layers (2 to 4 inches). Use of rollers like those found on the Pérédo-Macary project will also provide some benefits.

7. Construction Materials

FINDING:

With one minor exception, only construction materials which were on or immediately adjacent to the road project have been used. That exception was bagasse, used experimentally and in a limited amount.

Advantage: This practice eliminates the need for transportation and the purchase of materials thus tending to reduce costs.

Disadvantage: Using only those materials immediately available tends to restrict viable alternatives which could result in better or more maintenance-free construction.

COMMENT:

Three examples of procedures which could be improved with the use of cement, for example, are the construction of walls with mortar joints, the paving of crossroad drainage swales and steep grades with a granular cement mix; and the addition of cement to stabilize localized weak subgrade conditions. This would, of course, introduce the problems of cost and delivery of cement, but could substantially reduce future maintenance costs.

However, recognizing the present problems of providing tools and wages makes it difficult to impose yet another supply problem.

III. Costs and Achievements

1. General

In order to estimate the ultimate costs for the construction of the five coffee roads, data were obtained from DARNDR for the work completed to date (July 31, 1979). Since no road has yet been completed entirely and costs for sections of roads cannot be identified with particular sections even though completed, it becomes necessary to forecast total costs based on completed construction costs. The projections become more complex (and increase the margin of error) when the effect of differing terrain conditions on costs is taken into consideration.

The costs to date for each of the five roads are shown in Table 1. When reviewing the Table, the following should be noted:

Labor and direct supervision charges are identifiable separately for each of the five roads. These charges represent approximately 90% of the total charges to date.

Engineering services prior to July 1978 were provided by a Consultant. These charges (which are not available) are not included in the figures. However, they are not considered to be of sufficient magnitude to materially affect the results shown. Engineering charges since July 1978 are not identifiable by road site and have, therefore, been prorated to the various roads in proportion to the length of each road. They represent about 7% of the total charges to date.

Total tool costs have been prorated to each road in proportion to the labor and direct supervision charges of that road. They represent approximately 2% of total charges to date.

Table 1 COFFEE ROADS COSTS

	LAURENT -- BEAUMONT	VIRGILE -- L'ASILE	PÉRÉDO -- MACARY	BAPTISTE -- SAVANETTE	DONDON -- MARMALADE	TOTALS
Length, Km	35	12	22	21	15	105
Labor Costs	$115,596	$ 44,314	$113,421	$129,350	$ 10,049	$412,730
Engineering	10,370	3,457	6,600	6,285	4,400	31,112
Tools & Materials	2,965	1,112	2,912	3,315	254	10,558
Administration	138	138	138	138	138	690
TOTALS:	$129,069	$ 49,021	$123,071	$139,088	$ 14,841	$455,090
Cost per KM to date*	3,687	4,085	5,594	6,623	989	

NOTE: Numbers rounded

* Cost per KM to date reflects only percentage completion to date (see Fig. 4).

* Data as of July 31, 1979

Administrative charges are minimal at 1% and have been prorated equally to the five roads.

Some labor charges attributable to the Baptiste-Savanette road have been expended on the road from Belladère to Baptiste in order to provide access to Baptiste. The charges to the Baptiste-Savanette road will, therefore, be somewhat overstated.

2. Determining Percentage Completion

In utilizing the data in Table 1 to estimate final costs, it is first necessary to make an estimate of the percentage completion that these costs represent. This was approached in the following manner.

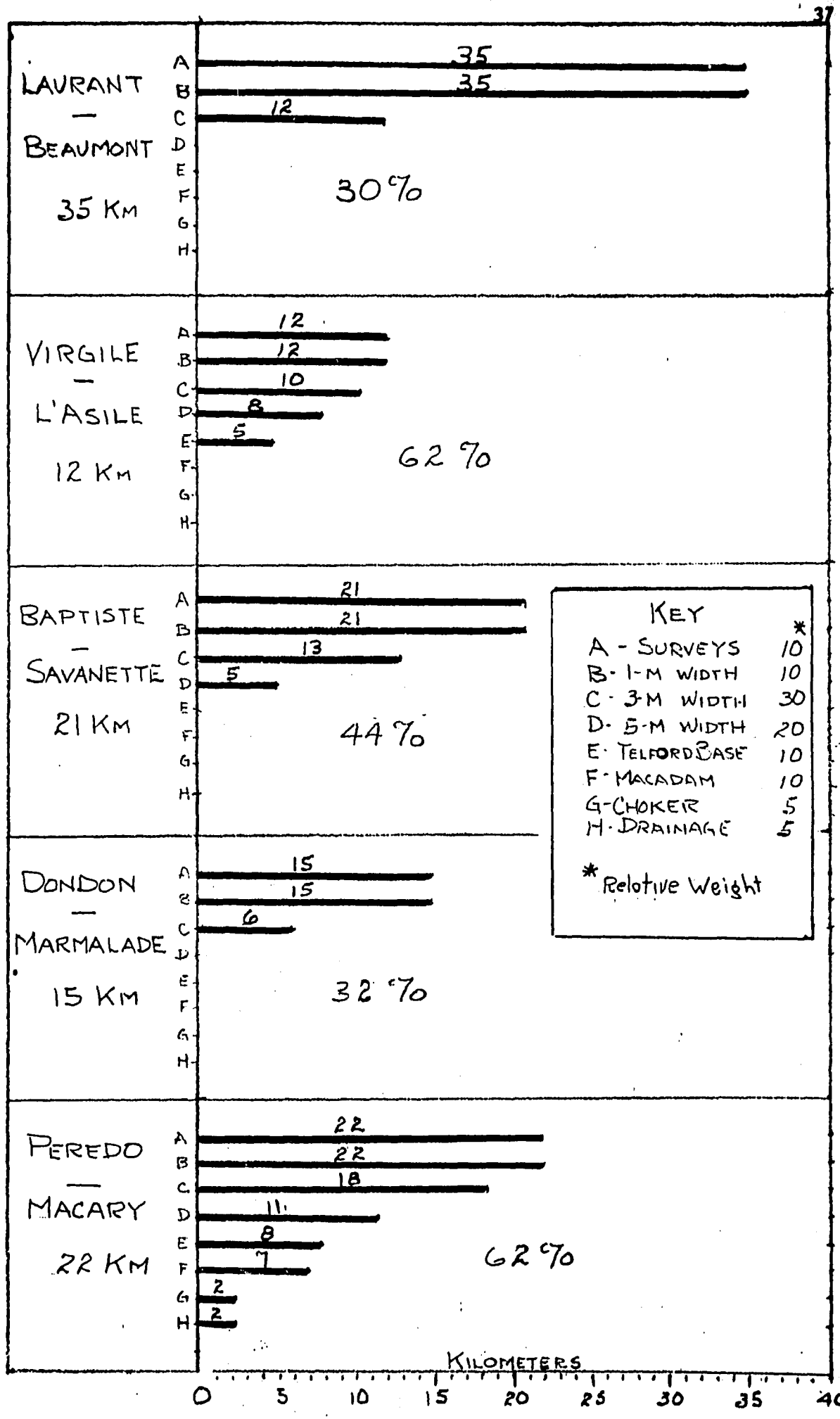
a. Data were available on the completed Kms of various phases of the work for each road (see Fig. 4). To utilize this data, it was necessary to give the various elements of road construction a relative weight reflecting the construction time and effort involved. This was done judgmentally, working with the Chief Engineer and is as follows:

	Construction Phase	Relative Weight
(1)	Initially determining alignment (surveys)	10%
(2)	Constructing 1-meter wide trace	10
(3)	Constructing 3-meter wide road	30
(4)	Constructing 5-meter wide road	20
(5)	Placing Telford base	10
(6)	Placing Macadam surface	10
(7)	Placing choker (binding) surface	5
(8)	Drainage	5
		100

These relative weights were then applied to the percentage of completed kilometers of each element as shown in Fig. 4 to arrive at an overall percent

FIG. 4
COFFEE ROADS
ESTIMATED COMPLETION STATUS

7/31/79



completion for each road.[1/] Those percentages are shown in Fig. 4 (i.e. 30%, 62%, etc.) and in Table 2 under "% Completion, Weighted Elements."

b. To elicit a second estimate of completion, the Chief Engineer (without knowledge of the above) was asked for his best estimate of completion of construction for each road. Those estimates are also given in Table 2. These two estimates were averaged to constitute a composite estimate.[2/] Ultimate cost estimates were then arrived at for each road, amounting to about $1,110,000 in total, or about $10,600 per Km.

c. The data for the individual roads were combined in Fig. 5, and using the same calculations, resulted in a 43% overall completion figure.

Total completion status for successive construction stages was found to be:

	Approximate % Completed
Survey	100
1-meter width	100
3-meter width	60
5-meter width	25
Telford base	12
Macadem	< 10
Choker	< 3
Drainage	< 3

COMMENTARY:

A. Note that the Virgile-L'Asile and Pérédo-Macary roads are judged a little over half complete, while Laurent-Beaumont and Dondon-Marmalade are less than one third done.

1/ The calculations may be expressed as:

$$\% \text{ Completed} = \sum_{\text{AtoH}} \left[\left(\frac{\text{km status}}{\text{tot length}}\right) \left(\text{Relat. Weight}\right)\right]$$

2/ The reliability (i.e., stability) of the composite judgment is greater than for either component singly.

B. The roads are 43% completed overall at a cost of $455,090, which is 67% of the funds originally budgeted (i.e., $675,000).

C. While that overage may not be excessive, we must comment that, based on our estimates, the ultimate cost will exceed the original budget by 64% (i.e., $675,000 to 1,110,000).[1/]

D. In order to see how our Haitian estimates compare with costs elsewhere, a review was made of other labor-intensive road costs as given in The Study of Labor and Capital Substitution in Civil Engineering Construction, (World Bank Transportation Dept., dated September 1978). The following comparisons may be of interest.

Location	Cost Per Km	Labor Rate/d	Man-Days Per Km
Kenya	$ 4,400	$1.00	1,500
Honduras - flat	6,500	2.00	2,300
rolling	8,500		3,100
mountainous	12,500		4,200
Haiti (estimated)	10,600	1.30	5,250 to 10,000 (say 8,500)

From these data, it would appear that our estimated Haitian costs are below those for the mountainous roads in Honduras. However, when adjusted by the difference in labor rates, that (earlier) Honduran figure becomes $8,125, which the Haitian estimate exceeds by 30%

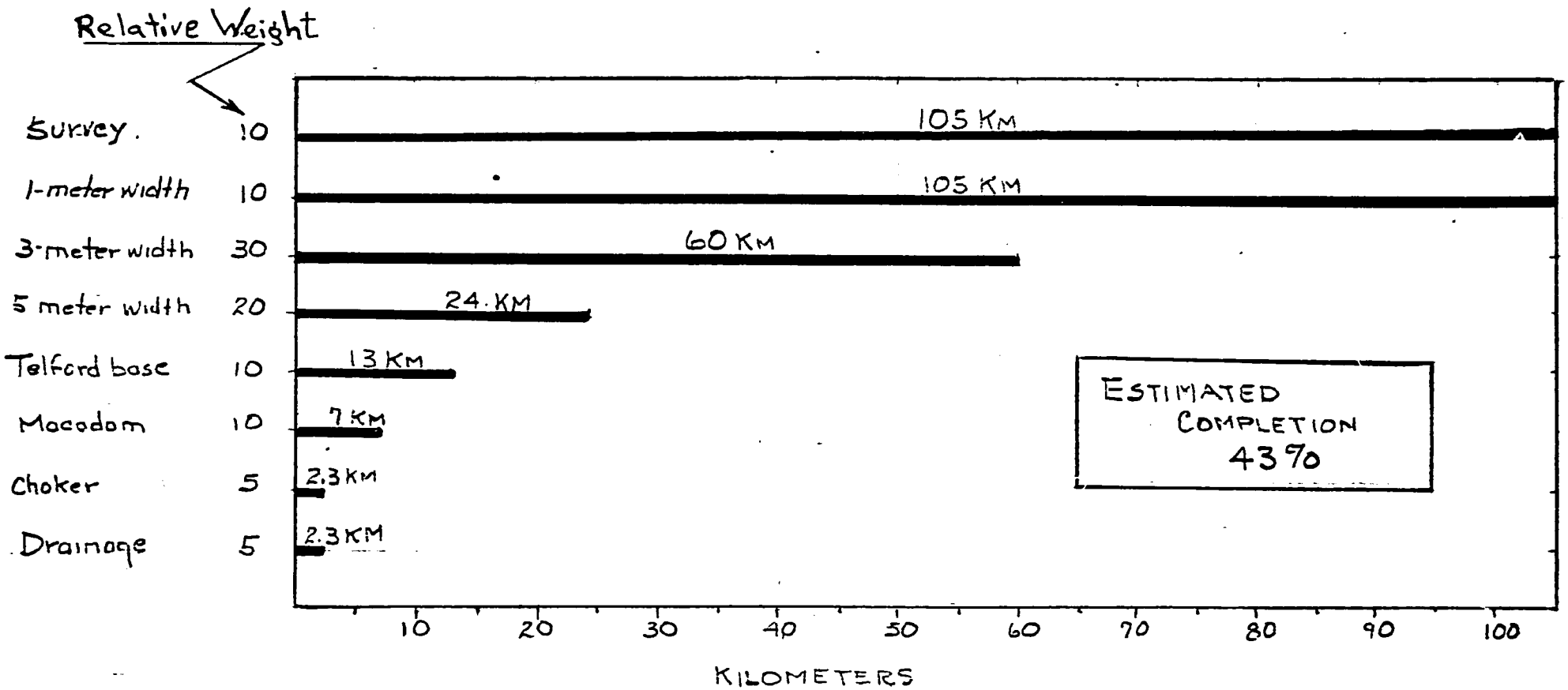
1/ Without any inflation factor, and assuming a constant $1.30/day labor rate.

TABLE 2 ESTIMATED ULTIMATE COSTS OF COFFEE ROADS

Road Name	% Completion Weighted Elements	% Completion Engineer Estimate	Composite % Completion	Cost To date	Estimated Ultimate Cost	Length Km	Ultimate Cost Per Km
Laurent - Beaumont	30	25	28	$129,069	$460,960	35	$13,170
Virgile - L'Asile	62	45	54	49,021	90,779	12	7,565
Peredo - Macary	62	45	53	123,071	232,209	22	10,554
Baptiste - Savanette	44	50	47	139,088	278,176	21	13,246
Dondon - Marmalade	32	30	31	14,841	47,874	15	3,191*
				$455,090	$1,109,998		

NOTE: Assumptions as follows:
(1) % completion is as shown under "Composite"
(2) Terrain, thus man days, remain similar to completed work
(3) No change in pay scale
(4) No substantial change in design to affect cost
* Dondon-Marmalade not considered typical because most work done to date on level terrain.

$$\frac{\$1,109,998}{105 \text{ Kms}} = \$10,571 \text{ average cost per Km}$$



COFFEE ROADS
COMPLETION STATUS

TOTAL 5 ROADS
105 KM

FIG. 5

7/31/79

It should also be noted that the estimated man-days per kilometer for Haiti appreciably exceeds that in other studies. This can be accounted for, in part at least, by a considerable difference in the level of design and construction. For example, while the Haitian roads are 5 meters wide and paved, the Kenyan roads are 4 meters and unpaved.

E. Comparing our "estimated costs to completion" with those presented by the Consultant Engineer in a Memo to the USAID Agricultural Development Officer (dated 4/30/79) yields much more divergent results than the above. See Table 3. The divergence is by a factor of 3.2 overall. We do not have a ready explanation to offer since we do not know the basis of his estimates; nor was the Consulting Engineer accessible for interview, having been reassigned.

TABLE 3 ESTIMATED COST COMPARISON TO COMPLETE THE FIVE COFFEE ROADS

Road	Source	
	USAID Internal Memo: 4/30/79	G7 Calculations
Laurent-Beaumont	$ 62,000	$ 332,000
Virgile-L'Asile	16,000	42,000
Pérédo-Macary	25,000	109,000
Baptiste-Savanette	45,000	139,000
Dondon-Marmalade	55,000	33,000
TOTALS	$203,000	$ 655,000

F. All preceding cost calculations and estimates were based on the existing labor rate of $1.30 per day. Just prior to this evaluation study a Presidential announcement was made to the effect that the new minimum labor rate would be established at $2.20 per day, effective October, 1979. It is not known if this rate will apply to labor engaged on the "Coffee Road" project but Table 4 has been prepared to reflect the possible $2.20 rate. Note that the cost estimate to complete the roads goes from $655,000 (Table 3) to $1,091,000 (Table 4), a 67% increase. Total ultimate costs would go from $1,110,000 (Table 2) to $1,546,000 under the new rate.

TABLE 4 ESTIMATED COSTS TO COMPLETE THE FIVE COFFEE ROADS ASSUMING INCREASE IN LABOR RATE FROM $1.30 PER DAY TO $2.20 PER DAY

Road	Increase Due to Labor Rate Change (rounded)	New Estimated Completion Cost
Laurent-Beaumont	$206,000	$538,000
Virgile-L'asile	26,000	68,000
Pérédo-Macary	70,000	179,000
Baptiste-Savanette	119,000	258,000
Dondon-Marmalade	15,000	48,000
TOTALS	$436,000	$1,091,000

G. Table 5 presents another comparative result, one on perceived achievement. We asked small samples of cognizant staff at USAID, IHPCADE, and DARNDR to rank order the four major coffee project elements in terms of their success

TABLE 5 PERCEIVED RELATIVE SUCCESS TO DATE OF COFFEE PROJECT ELEMENTS

Element	Average[1/] Rank Order	
	USAID[2/]	GOH[3/]
Fertilizer	1	2.8
Coffee Centers	4	3.5
Credit System	2	2.
Road Construction	3	1.

[1/] Mode; 1 = the most successful of the four
4 = the least successful of the four

[2/] 3 people, 4 rankings

[3/] 6 people, 7 rankings

to date relative to each other. Although these data are merely suggestive Table 5 would seem to indicate that USAID and GOH staff impressions agree only in the matter of the coffee centers. Both samples saw <u>that</u> element as the least successful. The GOH sample saw the roads element as the <u>most</u> successful while the USAID people considered fertilizer to be the best. Such limited overlap in preceptions of project achievement suggests either nonagreement on project purpose and goal or/and a lack of interaction or coordination between the two groups.

IV. GOH Support And Institutional Capacity

1. Institutional Setting and History

Our impression overall is that the Government did not make the roads element of the Small Farmer Improvement Project[1/] one of its rural development priorities. Nor did it do much about them. Indeed, the entire substance of the relationship between the GOH and this activity appears slim and occasional.

A clear understanding of the governmental factor is not for that reason less important to the evaluation study, and in respect to the implications of the project for other works it may be more so. What it[2/] means analytically is that we had to examine what "is not," in the institutional performance, in order to understand how the project nevertheless moved ahead. Elsewhere, we look for the explanation in institutions within the project localities that seem to have "supported" the activity. Here, we identify a number of qualities that characterize the central government's project role.[3/]

1/ The GOH denominates the project, "Petits Planteurs de Café," (PPC) Small Coffee Planters.

2/ i.e., the scaled-down relationship government-to-project. An interesting treatment of the topic of governmental nonperformance in general can be found in an excellent new book on Haiti, Peasants and Poverty-A Study of Haiti, Mats Lundahl, Croom Helm, London, 1979. See especially Chapter 7, "The Passive Government." There, Gunnar Myrdal's concept of the "soft state" is expanded to include the idea of inaction, of avoiding connection with an economic sector or social class--which appears to be the Government's tendency in the coffee road case. The problem is not new: in the 1890's, says Lundahl, "Presidents Hyppollte and Simon Sam finally undertook some repair work and new construction of roads...which, if it had continued, might have proved beneficial to agriculture." (p 299)

3/ Details omitted that are not essential to the principal findings.

a. General Responsibility

The GOH "acts through" two departments and an autonomous agency in the administration of the project: Agriculture, Natural Resources and Rural Development (DARNDR); Finance; and, the National Bank.

b. Specific Responsibility

Responsibility for the execution of the project was assigned in the first instance to two specialized agencies within DARNDR: The "Institut Haïtien de Promotion du Café et des Denrées d'Exportation" (IHPCADE)[1/] for (1) construction and operation of the local coffee centers; (2) construction of the roads serving the centers; and, (3) for procurement and distribution of fertilizer; and the "Bureau de Crédit Agricole" (BCA)[2/] for administration of credit operations.

c. Coordination and Overlap

The road element cannot be examined in complete isolation. It is to be noted that of the four elements of the project--the centers, the roads, the credit and the fertilizer--credit and fertilizer are necessarily the concern of both IHPCADE and the BCA, since it is fertilizer that is to be financed by the credit. One of the difficulties in the project is that these two agencies have had no natural means for joint or even coordinated action, despite overlapping and, in some matters, identical interests. As recently as September 17, 1979, the Secretary of Agriculture, apparently for the first time, created an *ad hoc* committee to deal with problems in the fertilizer

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1/ The Haitian Institute for the Promotion of Coffee and Other Export Commodities.

2/ Where French expressions are clear to English speakers, translation is omitted.

program, a committee including BCA and PPC representatives, as well as one from the IHPCADE.[1/] We are not mainly concerned here with the fertilizer and credit aspects of the project. But we note that the inability to achieve interorganizational coordination excepting in emergencies and, perhaps, under international pressure, has afflicted the coffee roads element as well. A case in point is the process of paying labor (see below). Another is the lack of coordination or even consultation with TPTC,[2/] which might itself have had the road responsibility.

d. IHPCADE: History and Character

The several changes IHPCADE has been through bear on how the project was administered (or not administered) and perhaps why the agency was ultimately taken off the job. Some bench-marks:

(1) An independent "Office National du Café" was created in 1946.

(2) An independent "Office de Contrôle et de Développement des Denrées d'Exportation"[3/] was created in 1950, presumably to do for other export commodities what the coffee office was set up to do for coffee.

(3) The "Office National du Café" was attached to the Department of Agriculture in September, 1952.

(4) In the Agricultural Division of the Department of Agriculture, a Coffee and Cacao Section was created in March, 1958.

(5) In November, 1958, the "Office National du Café" was made "autonomous," i.e., removed from Agriculture, to be placed under an

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[1/] By this time, however, IHPCADE no longer had administrative responsibility for any aspect of the project.

[2/] Public Works Transportation and Communications Department.

[3/] Control and Development Office for Export Commodities.

administrative council composed of the three secretaries (Agriculture, Finance, and, Commerce and Industry), and to be directed by an executive "troika" composed of the heads of the Office's three divisions. The decree making these changes is described in a published summary of it as "grouping" all the agencies concerned with coffee together with those concerned with other export commodities. The decree notes that "the multiplicity of agencies dealing with coffee and other export commodities is onerous for the Haitian Republic and has yielded no counterpart in productivity..."

But unfortunately, the language and provisions of this law are vague in the extreme as to how these agencies were to be brought together and how they were to function, individually or collectively. Indeed, even the change to the present more comprehensive title, as well as provisions to do anything toward implementing the objectives voiced in the 1958 Law, were set aside for another decade.

(6) In August 1968, the IHPCADE as such was created. The Law gives IHPCADE the principal GOH role in production. And it specifically authorizes IHPCADE to construct or finance the construction of "penetration routes" to centers of production of coffee and other export commodities.

(7) While the 1968 Law preserved the notion of IHPCADE's "autonomy," another Law 3 years later (1971) sent the pendulum in the other direction, and put IHPCADE back in DARNDR.

(8) The functions laid out for the original "Office," and later for the "Institute" in its present form, could not then include, of course, any reference to the activities of the project (which was created in 1974). Nor, however, has there been any subsequent revision of the responsibilities and modes of operation of the Institute in the sense of enabling it to handle what can only be described as radical changes in the volume and character of the

Institute's workload.[1/] Structurally or formally, the Institute would appear to have gone through the entire period of its project relationship (1974-78) without any accommodating changes on the project's account.[2/] The organigramme shown us in August, 1979 (see Appendix) leaves the strong impression that only IHPCADE's traditional functions are represented therein and that project functions were all external to the permanent structure. An AID interviewee goes even further to characterize the project as an entity so self-sufficient vis-à-vis IHPCADE as to share only a common address.

(9) The 1974 Loan Agreement indirectly puts the burden of initiative on the Department of Agriculture (specifically IHPCADE) to start up the road construction program. Although such initiative seemed lacking, the USAID provided an engineer, under contract with Hoskins-Western-Sonderegger (HWS).[3/] This Consultant engineer personally constitutes a principal project "institution." He had no GOH counterpart for a period of some 18 months--until July, 1976. And it was then necessary to pay this Haitian counterpart engineer through the same U.S. contract arrangement. Only 2 years later (July, 1978), when the U.S. Consultant engineer shifted over from an institutional contract to a direct AID personal services contract, did the Haitian engineering personnel shift to GOH employment.

1/ E.g., adding unprecedented activity in regard to coffee production, as opposed to "promotion" and "commercialization," and in road construction, not to mention massive and unfamiliar programs in credit and fertilizer.

2/ This, despite the fact that the yearly project budget amounted to $1.6 million while the average regular IHPCADE budget was approximately $.5 million.

3/ In order to comply with its agreement to supply engineering advisory services for the roads and centers elements of the project.

(10) Finally, in late 1978, comes the curious and poorly-documented transfer of Haitian personnel and all project responsibilities from the IHPCADE to a unit created for the purpose within DARNDR under the Director General of Agriculture: the "Petits Planteurs de Café" (PPC). IHPCADE which the CAP states had inspired and planned the project was now altogether out of it.

Regarding this event, we note, first, that opinions as to why the change was made, and under what impetus it was made at that particular time, did not come through to us as any clear consensus. Nor were we able to discover any staff work or argumentation for (or against) the change other than a tangential study-group report of October, 1978, which deals with the transfer of extension and research activity. (See Appendix.)

Rather, it seemed as if, in some rhythmic pattern, the time had come for yet another structural revision whatever the imperatives, and that the reasons, whatever they might be, could just as well be stated pro forma and after the fact. Indeed, the reason most often advanced had obtained since the inception of the project and, indeed, since the creation of the agency: i.e., that IHPCADE was not equipped for far-flung engineering projects nor for enormous logistical operations such as the project required of it because it had always functioned mainly in "staff" and regulatory matters. No explanation offered to us was time-specific or related to current matters.

We can then only suppose for example: that the end of the HWS contract required some response, since the Haitian engineering staff could no longer be taken care of there; or, that a sense of the awkwardness of the IHPCADE arrangement had been developing for a long time;[1/] and/or, that structural or

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[1/] Although nothing was said about it in a 1977 AID evaluation of the project. (See Appendix.)

personnel changes in the Department of Agriculture itself precipitated the transfer.

In any case, staff who had been associated with the project in IHPCADE moved physically and functionally and de facto[1/] to the DARNDR headquarters, taking with them all responsibility for the project. The IHPCADE Director General, however, keeps a role as counsellor to the project.

What is the significance of the shift? The potential or theoretical advantage of IHPCADE's autonomous tradition, if not its current status, is that it could act directly. Subjected now to the ordinary processes of the Department, the project finds itself just one among many claimants to service in a fairly large bureaucracy. On the other hand, the closer relation to an operating department, and the better definition of functions made possible by constituting a separate office exclusively to handle this one project, would seem to offer some advantages. How they actually worked out is more vital for other elements of the project than for roads since, in fact, road construction management never became an integral part of IHPCADE and is not now an integral part of the new PPC.

2. The Current Administrative Situation[2/]

We have indicated that GOH institutional and managerial participation in the project has been slender. But, what did, or does, that participation consist of?

[1/] We are not aware that any legal provision has been made for the change or, indeed, that executive orders or other memoranda exist which organize or record the change.

[2/] As of October, 1979.

a. People

For as long as the project came under IHPCADE jurisdiction, the Institute's Director General, with his many other responsibilities, acted as project officer. Thus, no full-time project officer was provided. An assistant "Project Coordinator" was designated, but his functions and authorities remained unclear (at least to us). What is clear is that delegation of authority was minimal and that a number of tasks set up in the project "design" were, for this or other reasons, unfulfilled (see below).

The PPC headquarters personnel at DARNDR who currently have full-time and significant functions number about nine:

The Section Chief (or Project Director)

The Engineer

The Accountant-Administrator

1 Assistant Accountant

1 Administrative Assistant

1 Stores Man

2 Secretaries

In addition, there are:

The Director of IHPCADE (as Counsellor)

3 "Attachés" (functioning part-time)

4 Subclerical Workers

In the field, a surveyor is still on the payroll, and for each of the five roads, a "controller" (or time-and-attendance man), visits from the nearest coffee center. He is responsible not to the engineer or site foreman but to the agronomist-director of the center, who otherwise has nothing whatever

to do with the road. Finally, there is a payroll man, an official belonging not to the project but to the Department generally. (In addition, but not here considered as headquarters personnel, there are the foremen, one on each road, who, as discussed elsewhere, are absolutely vital to progress on the project.)

Among all these PPC people, only the chief, the engineer, the accountants-administrators, and the secretaries can be said to have any relation to the road project. What relation? The chief says that his own time goes to functions that bear equally and without differentiation on the three elements of the project for which he is responsible (i.e., fertilizer, centers, and roads). For example, when he takes a field trip, he reportedly sees all of the project there is to see including the road in question. The other staff have a purely administrative, rather than operational, interest. Thus, apart from the engineer's visits, PPC's road activity is nominal.

b. Finance and Budget

(1) The Loan Agreement calls for a GOH local-currency contribution to the roads (of PL 480-generated L/C) totalling $675,000. Other than USAID grant funding for engineering services under contract (HWS) and for credit advisors, this is the only funding for the roads. The GOH contribution was to have been spent on the schedule shown below. Actual expenditures to date are shown in the second column.

(2) The main deficiency reported to us in the GOH's financial performance was occasional borrowing from the roads to pay for other, more favored, project elements, especially fertilizer transportation. In the net end-of-year outcome, however, the shortfalls apparent below seem to have been

Year	Planned Expenditures	Actual To Date
1974-75	$ 25,000	$ ---------
1975-76	75,000	19,195
1976-77	150,000	119,873
1977-78	175,000	137,894
1978-79	250,000	178,478
Totals:	$ 675,000	$ 455,440

a function of spending rates rather than of funds withheld or budgets reduced.[1/]

c. Work Activity and Deficiencies

The above personnel and budget contributions translate, in net effect, into the following "activity" or real and substantive GOH contributions to the road project:

(1) Financing of labor and direct supervision at site (approximately 90% of total road costs), and of engineering supervision and hand tools.

(2) Provision of engineering supervision. In effect, one man, traveling from DARNDR, inspects the various sites approximately once a month. (Even this modest support of the project became a GOH contribution only last year, as stated earlier. For nearly 4 years, the charge had been to AID

[1/] A question provoked by contradictory data arose too late for us to investigate: A June, 1979, internal AID memo advises, on the one hand, that GOH project (PL 480) funding would be reduced by $159,000. This entire cut would be applied to the roads elements of the project, and road crews had already been cut, we were told. But, on the other hand, actual budget spending figures as reported above ($178,478 for the year in question) would seem to deny this since a roads budget of $337,000 ($159,000 + $178,000) for 1978-79 far exceeds any that had previously been recorded or reported.

grant funding.) We note also that the engineer does not report substantively (but only administratively) to the Project Manager (Section Chief). Before the U.S. Consultant Engineer's departure in June, 1979, the project engineer reported to him. Now, he reports engineering observations to no one, officially. His reports to the Project Manager-Section Chief are of the time-and-attendance variety.[1/]

(3) One of the GOH local currency contributions to the overall project is an item called "frais" (expenses) paid to all PPC personnel and the IHPCADE Director. Most of them also receive a regular departmental salary. This doubling up affects all elements of the project except roads, however, since the only headquarters individual concerned fully with roads (the engineer) does not receive the departmental salary.

(4) Another and more controversial aspect of the financing picture has been delay in the payment of these "frais," which, for those who do not receive a department salary, constitute the only compensation. Day laborers at the coffee centers and on the roads are most affected. The impact on them seems to vary from difficult to nearly impossible, depending on the extent to which the individual concerned can maintain his family by subsistence farming or other means. (See Results Section VIII.)

(5) Delay of wage payment has a secondary consequence, i.e., the "factoring" or discounting of the delayed wages. Said to be a common practice in many wage-labor activities financed by government, it is a two-stage delinquency of government that makes it possible: first, the delay itself, and second, a failure to police exorbitant discount (i.e. interest) rates. The practice is no less reprehensible for being quasi-normal. And it may be illegal.

[1/] Unofficially and if he so desires, he can report to the engineer assigned by USAID/ENG as liaison to the USAID/ADO Project Officer.

Chapter V of the Labor Code of Haiti, dated October 6, 1961, provides that "full wages" shall be paid for each pay period; and that, at least in the case of piece-work, payment "shall be completed during the 15 days following the date on which the finished work is delivered." The statute also prohibits kickbacks for obtaining or retaining employment.

Moreover, the Law says, workers are to be informed of the wage conditions of their employment and of the particulars of any variations that may occur in any given pay period. One of the complaints the road workers voice is that they are in economic trouble because, believing what the project people had promised them, they did not anticipate not having money and hence could neither protect old income sources nor generate new ones.[1/] Thus, while the Code does not explicitly prohibit the practices alleged to be taking place in the coffee roads project, it can be inferred that the government is contributing to (if not participating in) a violation of the Law's broad intent.

(6) A great deal of time and effort on the part of some USAID and some DARNDR officials has gone into devising and pressing for an efficient method of getting the money out to workers reasonably on time. Delays run up to 4 months. Even according to the officials, January work was paid in June; May was paid about mid-September;[2] and June was to be paid a few days later. We can only note the problem as a deficiency in past "GOH project support," but report that a partial solution seems on the way to being put into effect.[3/]

1/ What is remarkable is that they nevertheless continue to work--a topic treated elsewhere.

2/ Workers report 1 October as the date of the May payment (See Results Section VIII).

3/ Using local paymasters for disbursement.

(7) One zone in which the project depends on the central government entirely is in the provision of tools. (See Sections I and III.) This area has amounted to only about 2% of the costs! A delivery was made to each site years ago. Another is badly needed. We fault the GOH for not doing more, of higher quality, more promptly.

d. Functional Contributions Omitted

Activities designed as GOH responsibilities but which the GOH has not carried out include:

--a formal IHPCADE/BCA agreement effectively coordinating their work;

--setting up an operating Project Coordinating Committee;

--preparation of time-phased activity plans;

--certain reporting, statistical, research and planning activities;

--effective participation in road site-selection and design.

e. Conclusions

At this point we can respond directly to questions as they are phrased in our scope-of-work instructions.

(1) GOH support of the project through IHPCADE, and later through PPC (both of the Department of Agriculture), has been far less than might be hoped. But the effects of nonsupport are far less negative than might have been feared (as documented in Section III of Results).

(2) The present organizational structure is, in our view, adequate for carrying out the project but only in the sense that little or nothing can be gained by tampering once again with the project's legal or organizational environment. On the other hand, and notwithstanding the site-centered character of the project's administration, the optimum completion of work

presently planned, and of work that would be undertaken if other road sections are added, means finding ways to provide more and better tools, and, to respond to certain engineering requirements that cannot be met on site (see Section I of Results).

(3) We do not believe that additional U.S. technical assistance is needed for these adjustments.

V. Effectiveness of Technical Assistance Rendered

FINDINGS:

1. The HWS consultant firm by amendment to an existing contract, was engaged in late 1974 to provide the services of one civil engineer to assist IHPCADE in accomplishing the planning, engineering, and construction of coffee centers and roads to be constructed in coffee-growing areas. The engineer was also supposed to train personnel of IHPCADE and the Ministry of Agriculture to assure continuation of the road-improvement program after departure of the U.S. Consultant.

2. In due time, the engineer arrived. It is said that the original emphasis and efforts were directed toward the coffee centers construction with road planning being a low secondary consideration. However, in these findings, we are only interested in the roads.

3. As mentioned in Section IV, during the first 18 months of the contract, and contrary to the understanding, the engineer was apparently assigned no IHPCADE or Ministry of Agriculture personnel for either training or assistance. As time advanced and after the locations for the coffee centers had been determined, he did obtain assistance from local IHPCADE agronomists in determining general location for roads consistent with the coffee needs.

4. It was not until after a meeting in July, 1976, (18 months from the beginning of the contract) when the lack of assistance was discussed that an effort

was made to correct the problem. This was done by rearranging the Consultant's budget to permit direct hire by the Consultant. About September, 1976, an engineer and an assistant (surveyor) were hired. Three foremen were subsequently hired and trained to stake out lines and grades from previously designated alignment and generally to supervise the construction, one to each road. The number of foremen was increased to seven, as likely candidates became available and were trained, but because of budget restrictions, not all were used as foremen.

5. Although the Consultant engineer was engaged "to assist" and "to train," all evidence indicates that he was, in fact, "the engineer," working essentially by himself prior to September, 1976, and with limited assistance subsequent to that date. All basic engineering determinations were his. Design was his and overall supervision was his. Surveyors (engineer assistants) did develop proficiency in establishing alignments and grades subject to review and modification by the engineer.

6. The first actual construction began in February, 1977 with the excavating of 3-meter temporary roads. By then, the "standards" had been determined and work proceeded on the basis of those standards.

7. The Consultant's contract expired in June, 1978, at which time the local engineer, the surveyors (now two), and the foremen were transferred from the Consultant's payroll directly to the Ministry of Agriculture as part of the Small Farmers' Development Program (PPC). The local engineer then (or subsequently) became Chief Engineer of the program.

8. The former Consultant Engineer then entered into a Personnel Services Contract with AID for other work, but as it was slow in materializing, he was informally assigned to advise on the coffee roads in addition to other duties. He remained in that relationship with the coffee roads until termination of the Contract in June, 1979. During that time, all indications are that he continued being the decision-maker even though performing in an advisory capacity.

9. At present, the Chief Engineer has two assistants (surveyors) and has a foreman for each of the five roads. He visits the work sites from his office in Port-au-Prince on occasion (reportedly once or twice per month). The surveyors are in the field available where they are needed.[1/] The foremen were observed on site on each road visited. An AID-employed Haitian engineer now reviews and reports on the work for AID.

COMMENTARY:

A. Clearly the engineering input has been essentially a one-man contribution: That provided by the Consultant Engineer while he was either assigned to or advising on the coffee roads and the coffee centers. The assistants provided to him after the first 18 months were undoubtedly helpful at a lower level of responsibility, mostly in the areas of field layout. After being trained, they apparently fulfilled the need as long as competent and aggressive engineering supervision was available.

[1/] One was observed on site. The other is said to be staying off work until he receives back-pay.

B. While the Consultant Engineer was directing the program, road alignments were determined and design standards were established. But these should be considered as guides requiring modifications as changing conditions warrant. There are no indications that this concept is understood or accepted as good engineering practice. In fact, it was stated that variation from the standard might only serve to confuse the workers. This might have some validity if the construction were a fast-moving operation. But it is not. There is adequate time to review conditions a few hundred meters in advance of work underway to determine if, for example, slight alterations of alignment would permit better grades or reduced earthwork, or, after grading, if the rock base could be omitted or should be increased. So much of this type of construction is based on experience and good judgment that practical deviations from a standard should be considered "standard practice."

C. Observations indicate a tendency to construct somewhat excessive grades and, in older work, not to have understood that soft subgrade conditions required corrective action before the placing of the stone base. (Newer stone base has not been subjected to traffic and has generally been placed on rocky mountainsides.) These types of problems are representative of those which occur and are not generally understood by the average foreman. They require initiative on the part of the engineering manager, the Chief Engineer, who, in this case, is the only one available to provide the needed guidance. Unfortunately, there is little or no indication of such initiative or guidance being provided.

D. As the program continues and more of the work is oriented toward paving rather than excavating, there is an opportunity to consider using more readily-available or more easily-handled materials for paving as alternatives to the present standard, especially on flatter terrain where erosion is less critical. Possible alternatives could include granular bank-run materials and river-bed gravels as well as mixtures of gravels and local binding material. Such materials have been used with success by others, the Feeder Road Program, for example. When this possibility was suggested,[1/] the response was one to the effect that the type of design has been decided on and that it is equal or superior to the Feeder Roads and, therefore, no consideration for change is worth entertaining. There seems to be no recognition of the fact that the coffee roads as a supplier of traffic to the feeder roads would normally not require as high a level of design as the feeder roads themselves. The concept appears to be one of providing a high-quality road, regardless of its probable level of service or cost.

E. It should be said that, in general, the foregoing to the contrary, notwithstanding, the workmanship of these roads is good to excellent. Dry-stone retaining walls and newly-placed pavements make an especially good appearance. This indicates an above-average level of technical competence at the foreman level. Our criticisms are directed toward some engineering economics aspects, use of alternative materials and reaction to changing conditions.

[1/] By the evaluators.

F. We have made inquiries of TPTC[1/] engineers in position of authority to determine the extent of communications between TPTC and DARNDR technical staffs with reference to the coffee roads layout, design or construction. We are advised that there was only one such meeting. It was short and unproductive. Thus, the technical resources of TPTC have essentially not been utilized.

G. In brief, it would appear that initially the quality of top technical assistance was adequate and continued so throughout the period of location and the development of standards and construction practices. Lower-level assistance was delayed some 18 months, but when brought on board and trained, was adequate to meet the need. However, once that plateau was reached and following a change in responsibility for engineering management (actual, if not organizational), there now appears to be little technical input to improve, adjust or modify. Rather, it is apparent that without some active engineering leadership, previous decisions and determinations will hinder adaptiveness and innovativeness.

1/ Ministry of Public Works

VI. Adherence to Project Design

The questions addressed in this section are: To what extent was the road activity implemented in accord with[1/] the project design of the Capital Assistance Paper; and, whether amendments (to it) are needed for the project to be carried out as planned.

1. Extent of Design

Concerning the first question, the obvious and comprehensive response is that design is virtually absent, that the CAP is almost devoid of planning or technical design for the roads elements of the project.

Roads are not mentioned at all in an 11-page Part One called, "Summary and Recommendations," nor in Part Two, "Problem Analysis and Assistance Strategy." In Part Three, "Description of the Program," 7 "overall goals" are mentioned, plus 7 "specific objectives;" but none of the 14 mentions or alludes to roads. "Project Design" and "Time Frame" are then discussed, still omitting roads. Not until "The Delivery System" is described do we get our first clue that roads will have anything to do with the project--and that reference (p 8), is a brief 3 lines, plus 1 word, saying that construction of about 100 Kms of road, to connect coffee centers to the larger road network and to the producing zones, is "included in the project."

The next reference appears on page 49 under Part Four, "Project Analysis," C. 2., IHPCADE Function, where 1 line says that IHPCADE has been authorized to construct roads. The next after that is page 88, devoted to

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1/ The question of the validity of the project design is discussed in Section VII.

the budget or "financial summary" of the project. There, with no more preparation, data, argument or justification than cited above, the CAP allocates precise annual amounts for the entire projected 5 years of the project. (That is the last mention of cost for the roads component, although we know that these cavalier estimates were the basis of the GOH's commitment in the Loan Agreement to the total contribution of $675,000.)

Still under Part Four, a page and a half (pp 103-104) give us a background (not a "design") on the Haiti road situation. Then, 3 paragraphs on page 105 tell us what "Road Work (is) Involved in (the) Present Project." Finally, under Four "H," the Implementation Plan, there are: a paragraph on Engineering Assistance to the Road Work; two paragraphs on Design Standards for Roads; one paragraph on Method of Constructing Roads; one on Road Building Materials and Tools; and one on Maintenance of Completed Roads (all totaling less than two pages).

That is the full scope of the design. We examine next whether plans as to its content were followed.

2. Specifications and Adherence to Same

a. Personnel and Leadership

The GOH was to have provided personnel for engineering leadership in planning, organizing, and supervising the road construction. These people would have had the support of U.S. advisory and training services. But (as mentioned in Section IV) for a year and a half, the personnel were not made available at all. When they were (July, 1976), the U.S. paid for them from a loan-supplementing grant. And then, at least until mid-1979, the "designed"

roles were reversed: The U.S. Consultant operated (directed), and the Haitian engineer supported.

AID's CAP obligation to provide engineer-consultant advisory services was not stated in a way as to require such service through the entire life of the project, and it has not done so. (The Consultant Engineer left in June, 1979.) But as a consequence, AID consulting services will not be available to "help" in setting up a "community-based" system or road maintenance, as called for in the design.

b. Organizational

A coordinating committee (also called "working level committee") was to have been set up as between the Department of Agriculture, IHPCADE, BCA and AID. Various committees have existed along the way. None can be said to have coordinated, effectively, in the sense used in the CAP.

It follows that no coordinated participation went into staff work and decisions bearing either on the technical design or the location of the roads. As far as we can determine, both these functions were performed by the U.S. Consultant Engineer alone.

The development of a "time-phased work plan" was prescribed by the CAP. We asked to see such plans and were told that they did not exist.

Annual reports were to have been made by IHPCADE (or the project element of IHPCADE) and later by PPC. We were not able to locate any.

Certain research, statistical, baseline, and other technical staff works that were to have been undertaken, were not.

c. Physical

We are satisfied that, however selected, the location of the roads

is satisfactory and in basic conformity with the expectations and larger purposes of the CAP and the Loan Agreement. True, in at least one location, the coffee road did not in itself establish the wanted connection to the larger road network (and it was necessary, under non-coffee road auspices, to improve the section making the connection). And in another case, there is reason to wonder whether the main impetus for building the section was not its value as a connecting link in the national network, rather than its value in strictly coffee project terms. But that seems secondary so long as the design purpose was served, as it was.

On the other hand, equipment was to be rented to "supplement hand labor when required," (CAP, p 107). We know of no instance in which that occurred.

"A quantity" of hand tools were to have been procured under the loan. The CAP does not indicate who was to procure the tools; they were to be distributed by IHPCADE. This was done, once, without replenishment to date.

There are slight variations (5 to 10%) in the matter of designed length of roads, as against what is now being constructed, and in designed vs. actual road width (the 5-meter standard in use being slightly more than the designed 16 feet).

Departure from design is more evident in surfacing. Specifications now considered standard substantially exceed what might have been done under the CAP plan to construct the "cheapest all-weather roads possible." We are not saying that this excess overdesign was unwise, only that it is a fact.

d. Community and Method

The "maximum possible use of labor-intensive methods" was planned, as was the "maximum use of hand labor." Project implementation has complied with this plan to the extent, in fact, that "maximum" became "total," or

"exclusive." This is one of the most labor-intensive projects we know of.

The communities near the road sites were "expected to complement" the project effort. They have done so in the sense of providing land, free (it is reportedly taken, uncompensated, by right of eminent domain), and labor at $1.30 per day. But the communities, or the individual members of the community, did not "complement" the project by "donations of cash or labor services," as the CAP cryptically called for.

e. Implementing Agent

IHPCADE, along with the BCA, was to have implemented the project according to design and agreement. There is some question as to whether IHPCADE was ever truly involved in the project, or whether a discrete project unit was simply thrust into its physical premises (see Section IV above). In any case, the project was later unceremoniously removed from IHPCADE and sent to PPC at the Department of Agriculture.

COMMENTARY:

A. The fact of the entire project having been shifted to another office in the final (designed) year of the project--and this virtually without benefit of executive, legal or legislative orders and authority, let alone a design revision--is surprising. It calls in question whether there was any significance in "design" at all, in connection with institutional responsibilities.

B. Otherwise, and apart also from the unplanned role of the U.S. Consultant Engineer, departures from (the scant) design were neither serious (nor unwise).

C. The second question we were to address in this part of the evaluation study, whether design changes are now desirable, calls for a preliminary clarification of terms. Reportedly, the project has been "extended" for a year without formal revision of the design or of other basic documents. There is no necessary logic in revising the 5-1/2 year-old CAP document. (PP and CAP revisions are made by AID, we surmise, as a matter of institutional convention rather than legal or regulatory necessity.) On the other hand, whether the CAP is changed or not, fresh, clear and firm plans are needed, at least with respect to:

(1) GOH budget commitment to the project's roads element: Note that some $200,000 of the GOH's roads commitment for the 5 years now ended ($675,000) remains unspent. Yet the GOH has transferred or withdrawn some of its L/C project support, thus contradicting intergovernmental agreement. This affects not only the roads but the success of other project elements to the extent that they depend on roads.

(2) Reliable arrangements for paying labor on time: Here, interagency and intergovernmental coordination mechanisms might be invoked.

(3) Designs, plans or, in any case, decisions, as to certain technical design matters: Possible variations in surface specifications at different places, for example.

(4) "Design," or basic planning, decisions with respect to possible extension of the Coffee Road Program to all or some part of the additional 155 Kms roughed out in early stages of project thinking.

(5) Design or plans with respect to road maintenance: This has been a neglected item of planning. It was alluded to, but just barely, in the CAP. Now it must be worked out, and it is now possible to do so on the strength of a much greater understanding of, and a better working relationship with, the communities that have supplied the labor for construction.

(6) There are "design" factors, to be fed back into the project, that will have been generated in connection with the relationship between this project as model and other planned projects as beneficiaries of the precepts (labor-intensive methods, etc.) developed from the model. That is, the attempt to use the coffee roads experience as a model for a wide variety of other rural works imposes on it certain research and measurement responsibilities not now in the design.

VII. Validity of Project Design

In the foregoing we say that departures from project design (i.e., the CAP) do not seem to have made the project markedly less successful than it would otherwise have been. We also say that, insofar as roads are concerned, project design was nearly absent. In the present section we deal with design in the larger perspective of whether, scanty or not, and followed or not, it was a sound one, i.e., whether it was appropriate to the physical and institutional realities surrounding the project.

In this context, we think the design was deficient.[1/] The deficiencies did not result in project failure because, fortuitiously, the individuals implementing the works were somehow able to assemble the elements of partial success.

As to our approach here, we do not try to sort out the questions, "How much more successful would the project have been if its design had been more complete?" (see Chapter VI above); or, "How much of a failure would the project have been if the consulting engineer had not 'kept it on track'?" Our standpoint is less particular, seeking general design precepts applicable to similar road projects and even to rural works other than roads.

[1/] The political and diplomatic circumstances in which the CAP was prepared should not be overlooked, of course, in extenuation of our stronger points of criticism. It was not until late 1973 that discussions began with a view to renewing an AID relationship, after the decade in which U.S. economic assistance was withdrawn from Haiti. The present project, Small Farmer Improvement, was only the second to be prepared under the renewed U.S./Haiti understanding. The date of the CAP is May 21, 1974, indicating that the time pressures must have been considerable. We can also suppose that the technical design aspects would, therefore, of necessity have received less than full attention. Lundahl (op. cit., p 312) notes the same problem, at the same historical period. He says, "The...agricultural sector lacked projects [in 1974] that were sufficiently prepared to be candidates for international financing....The international organizations have had to "hunt" projects themselves."

1. The Project Entity, Its Location and Relationships

a. Projectization-Separation

This CAP fully "projectizes" (i.e., packages) the four activities of U.S. assistance to Haiti's coffee sector. A differentiation has usually been made, in economic development assistance, between "program" and "project" activities. The former is a matter of supporting or helping out in a government's regular program in a given sector, by actions or resources related to ongoing activities of the host agencies concerned. The latter comes on the scene, bag-and-baggage, carves out new territory, stands apart, and has a "beginning and an end." In theory, the project eventually integrates with regular, parallel, activity of the government in that sector; in practice, often the two never get together.

The coffee road activity and, to some extent, the coffee project as a whole, seem to us in some degree divorced from corresponding government programs. Putting it another way, the project seems to rest on tenuous institutional footing. This is perhaps due to design misconceptions of what the institutions, IHPCADE in particular, would be capable of.

b. IHPCADE

Consider, for example, that IHPCADE was touted in the CAP as having the institutional capacity, the personnel experience and background, and, indeed, the generating role in planning the project such as to make it the logical choice to implement it (along with BCA). But actually, IHPCADE played virtually no part at all in the road activity, and later the project was transferred *in toto* and *intact*, to another agency.[1/]

[1/] As we detail in Section IV.

Questions that come to mind are: Was the CAP appraisal of IHPCADE simply wishful thinking? Was IHPCADE chosen simply on appearances? Who else works on coffee? Why was it later possible to shift the project out of IHPCADE with scarcely a ripple of institutional reaction, scarcely a document to support the move, and scarcely any apparent effect on the project, on IHPCADE or on the Department of Agriculture?

c. Location of No Consequence

The answer, we suspect, is that the project was a "project," i.e., quite independent of regular government activity. Its budget was four times that of IHPCADE's, and entirely distinct, in source and spending process. It had its own work schedule; its own decision-making processes; and its personnel, and were paid supplements that set them apart, that seemed to signal that project personnel were engaged in an international and not a national activity.[1/]

d. IHPCADE and Roads

If the whole project (other than the credit element) was housed in IHPCADE on the strength of dubious design assumptions, what of the particular case of locating road construction there, or anywhere in the Agriculture Department? True, IHPCADE had been given the legal authority to finance or construct "penetration" roads, in 1968, but we are not aware that it had ever exercised the authority. Standing in the background, TPTC now finds it normal and desirable that it should have (and should have had) responsibility for the coffee roads.[2/] Was the design assumption at the time of CAP writing that TPTC would not accept them or attend to them based on inadequate inquiry? If one were looking for symmetry, the absence of it might be striking in that BCA is into credit (for the project), but TPTC is left out of roads.

1/ Coffee center directors are said to resent being "saddled with dual functions (project and nonproject) even though they receive dual pay.

2/ See Section X.

e. Intra-Project Relationships

The CAP is deficient and puzzling in its failure to establish any conceptual or operational connection between the roads elements of the project and the three other elements. One would suppose that there was some reason for treating the roads as part of the larger project, rather than as a project in its own right. But none is suggested, other than a phrase here and there scattered through the 148 pages of text.

No, the roads are largely ignored in the design document, as in the Loan Agreement. Perhaps the explanation is that the loan does not finance the roads. (GOH local currency does.) If that is the reasoning of the CAP's drafters, it is a poor one. AID doctrine, and enlightened donor-institution thinking wherever found, premises that local and international funding should be combined and coordinated, else the project will lack integrity and viability.

f. Technical Specifications

The CAP calls for the design of roads to be "the cheapest all-weather roads possible[1/] to accommodate local traffic" and that the "roadway will be 16 feet wide, including shoulders and ditches."

These two stipulations, i.e., "all-weather" and "16-feet wide," although desirable, serve to negate or, at least, counteract the low-cost criterion.

An "all-weather" road, by definition, means that the road shall be provided a surface which permits travel without delays under all conditions of weather.

The width requirement of 16 feet, in effect, insures two-way traffic at all points on the road regardless of whether the frequency of traffic

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1/ We interpret this to signify "low cost" on an absolute basis.

dictates that need. In short, the stipulation for a relatively high level of service dictated certain design considerations which would of necessity affect the cost of construction.

2. Prescriptive Omissions

It might have been helpful if the CAP had made more of a point of suggesting how, and by whom, certain things could be done. For example, the CAP speaks of training farmers and of developing the community, i.e., the rural connection, generally. But it does not support the notion with any specific ways of going about it. Similarly on the question of tools. The activity was to be labor-intensive "to the maximum extent possible." But if so, what tools and how many were optimum? How could those decisions be reached? Was there a "tools-strategy" to maximize motivation and productivity?

If such prescriptions could not be made during the drafting, for lack of data or time--or, if it were undesirable to make them in the attendant danger that it would tie project administrators' hands into the future--then could not the CAP at least have flagged such questions and suggested possible means of working them out?

This question takes on special interest now when the roads activity is being seen by some as a possible model to guide other rural works (that may be very different in purpose but perhaps similar in method). And in the transfer of lessons from models, small details, such as wheelbarrows vs. heads to carry rock, can be very important.

Precisely the same point (the need for more detail) could be made in the

matter of budgeting or cost projections. The GOH obligation to provide a given amount of money ($675,000) rests on very slender data or justification.

3. Tone and Strategy

The design paper generates a tone of optimism--of a kind that may be necessary in such documents, considering their role in gaining funds for the proposed activities. But the tone is nonetheless misleading when the same document is considered in its role as a blueprint for the work itself. Thus, now, at the end of the 5-year project term, the roads are less than half complete.[1/] Perhaps in a document less afflicted with the "no problem" syndrome, more realistic projections would have come forth.

Finally, we find no conception of "strategic" relation between the project and rural development generally. As a point of criticism, this is perhaps unfair hindsight, considering that in 1974 "rural development" did not have the prestige and priority it got later as the New Directions gained momentum. But we also sense that the document lacks unity and coherence, i.e., it is weak in "theme." It lacks strategy on its own terms, leaving aside the evolution of U.S. development policy. And despite that the roads are understood to have several purposes in addition to servicing the coffee centers, the CAP says nothing about what these contributions or connections might be.

[1/] Other project elements are also behind schedule.

VIII. Socioeconomic Implications

Our field survey of 50 villagers in Fond Jean-Noël yielded a few interesting results which we present below. We caution the reader that these must be viewed as suggestive, rather than conclusive in nature.[1/]

FINDINGS:

1. Crops Grown[2/]

	% of Respondents Mentioning (N = 15)
Bananas	73 %
Corn	53
Coffee	47
Sorghum (millet)	40
Peas	33
Yams, Breadfruit Trees, Coconut Palm Trees, Chinese Yam	less than 10

These results indicate that this region is certainly not one producing coffee exclusively, with only about half the sample growing any. Beyond the above, no apparent change in crops cultivated now vs. 2 years ago (i.e., before the road) was reported.

1/ The sample is modest in size and nonrandomly selected, making generalizations to the entire village population somewhat risky.

2/ Based on responses by 15 road workers.

2. Difficulty of Life[1/]

Response	% of Respondents (N = 30)
Harder now than 2 years ago	10 %
The same now as 2 years ago	47
Easier now than 2 years ago	43
	100

By better than 4:1 life is seen as easier than 2 years ago.[2/] Most, if not all, the reasons for this positive shift may be seen to be road-related:

Reason	% of Responses[3/]
Better prices for local produce	35 %
Faster road transportation	20
Increased buying power	20
Lower unemployment	15
Ease of exchanging local produce	10
	100

Interestingly enough, one of the three villagers who saw life as harder now, also gave a road-related reason: "Selling (here) is more difficult now because of better prices elsewhere."

3. Travel Time[4/]

Two years ago, it reportedly took a whole day (and longer in rainy season) to go to Jacmel or Port-au-Prince. Now it takes about 3 hours to Jacmel and 5 or 6 hours to Port-au-Prince.

1/ Based on interviews with 13 farmers and 17 market people.

2/ I.e., before the road construction began.

3/ By those saying life was easier now.

4/ Based on responses by 13 farmers and 17 market people.

4. Frequency of Travel[1/]

Most respondents report traveling 1-3 times per month now. Forty percent say they travel more often now than 2 years ago; Thirty percent say less.

5. Travel Destination[1/]

Now, the most frequently mentioned destinations from Fond Jean-Noël are to:

Jacmel	25%
Marigot	24
Pérédo	17
Port-au-Prince	15
Cayes-Jacmel	10
Kenscoff-Pétionville	6
Croix des Bouquets	4
	100 [2/]

6. Travel Purpose[1/]

Response	% of Responses
Buying and selling	49 %
Visiting	36
Health	10
Other	5
	100

[1/] Based on responses by 13 farmers and 17 market people.

[2/] Rounding error disregarded.

Thus, commercial travel is about half the total.[1/]

7. Local Salary Scale[2/]

We sought to determine whether the 6 gourdes 50 ($1.30) per day being paid the road workers was high, average, or low by local standards. Reportedly the going wages are:

	Wages per day (gdes)
Coffee picker	2.50
General Laborer	3
Wood Cutter	5
Wood Sawer	10

8. Delays in Road Work Salaries[3/]

All 15 of our sample reported that the last pay they had received was on October 1, 1979, for the month of May, i.e., 4 months late.

1/ What is meant here is travel by respondents, of course. The survey was not designed to measure travel by outsiders. But their influx is mentioned as a benefit under paragraph 10 below. We suspect that the outsiders might well include "revendeuses" or "Madams Sara"; that is, itinerant marketing go-betweens, women who stock up at farm gate and resell in towns such as Jacmel and Port-au-Prince. As the women are fully informed on effective demand in the markets, they not only facilitate the outlet of goods but convey information to producers on what crops are best to grow. (See discussion of the marketing chain in Chapter 4, Poverty and the Market, in Mats Lundahl, Op. Cit.)

2/ Based on interviews with 5 local leaders.

3/ Based on interviews with 15 road workers.

9. Coping with Salary Delay[1/]

The following methods of adapting to delays in pay were mentioned:

Solution	% of Respondents Mentioning
Income from garden (farm)	35%
Discount/Factoring of salary	26
Loans	22
Credit purchases	9
Help from relatives	4
Hire out as farmhand	4
	100

10. Perception of Road Project[2/]

Four of our five respondents were quite positive in their attitude to the road, one was somewhat more neutral. The major benefits of the road to date were seen to be these:

Benefit	No. of Respondents Mentioning (out of 5)
Rapid transport of sick people	5
Transport of produce	3
Income other than farm	3
Ease of exchanging products	2
More visits by outsiders	2
Lower death rate	1

1/ Based on interviews with 15 road workers.

2/ Based on interviews with 5 local leaders. This question was asked late in the interview to minimize response bias.

When asked for the biggest problems or disadvantages of the road project, these responses were given:

Disadvantage	No. of Respondents Mentioning (out of 5)
Damage to tires by rocks	1
Psychological disadvantage regarding the relations between the people of Fond Jean-Noël and Marigot[1/]	1
None	3

COMMENTARY:

A. Even minimizing response bias[2/], the clear impression from these data is that the road has had a positive effect on life in Fond Jean-Noël, and is well perceived by villagers and village leaders.

B. As opposed to 2 years ago (i.e., before the road), life is now seen as easier; local produce can be sold at better prices; travel time to Jacmel or Port-au-Prince has been significantly reduced; trips are taken more frequently; sick people can be helped more easily; an alternative income source exists; and more outsiders can visit Fond Jean-Noël.

C. With regard to road work itself, the daily wages (6 gourdes 50) seem to be roughly within the range of going rates of a general laborer (3 gourdes) and a wood sawer (10 gourdes).

1/ There has been and exists now an economic rivalry between Fond Jean-Noël and Marigot (a somewhat larger community on the southern coast). The psychological disadvantage is paradoxical: because of Fond Jean-Noël's increased economic potential (vis-à-vis Marigot), this respondent felt that the Marigot community (which is more powerful than Fond Jean-Noël's) might now react in a self-protective way to the detriment of Fond Jean-Noël.

2/ Our field interviewers did not know that the central focus of the research was the road, nor were most of the sample asked any direct questions concerning it.

D. Reports on long delays in receiving salary seem to be accurate. Farm income, factoring (of the salary) and loans are predominant ways of coping with the delays.

IX. Baseline Information Needs For Road Project Evaluations[1/]

As contained in the previous section and as the Agency has frequently discovered, no conclusive description of socioeconomic results of development interventions can be made unless prior conditions are known.[2/] All too often, social scientists or development specialists must try to describe a change situation of which the "before" measures are poorly known, if known at all. Sometimes, such an occurrence is unavoidable. More often, however, the baseline measures could have been determined.

Although there was the intention and some effort to obtain such data for the Haiti Feeder Road Project, it was not carried through. The G7 evaluation that was done (in June, 1979) came up against the problem directly. Even if feeder-road improvement had been further along, G7 could not have determined with any rigor what changes had taken place as a consequence of the improved roads.

With regard to the coffee roads, the CAP in May, 1974, specified (p 129) that BCA carry out a "farmer baseline study." In September, 1978,[3/] a report entitled, "Haiti Baseline Profile of BCA Small Farms" was produced for USAID/HAITI. It illustrates a serious practical problem with the data not entirely overcome by use of the word "baseline" in the title. To-wit:

1/ This section was drafted by A. H. Niehoff, California State University at Los Angeles.

2/ As a minimal condition.

3/ The fourth year of the original 5-year loan agreement.

> Interpreting the data for the different number of loan groups is very difficult because of the ambiguity on the fiche (sic) themselves as to the time period of reference for the data.[1] In many cases where the dates of reference are clear, there are both data for before and after situations mixed. The best context for testing before and after impacts of the project is not inside the fiche data set, but by comparing the BEFORE fiche with the AFTER data from the survey now in process. Until that analysis is completed all inferences drawn from an examination of the fiches sorted by number of years in the program should be viewed as tentative at best. In the face of the ambiguity as to whether the fiche data on multiple loan borrowers are predominantly BEFORE or AFTER BCA participation information, this paper will present data interpretations based on the assumption that the information is mostly AFTER. This assumption is based on the fact that there ARE significant differences between the three year repeaters which would be surprising to explain as a simple preselection bias, i.e., that farms which continue are a distinct group before initial participation. While this assumption may be true, it is very possible that just the opposite is actually the case; therefore the interpretive notes based on time in program data should be seen as raising issues rather than resolving them.

In addition to this data quality problem, the report includes a serious conceptual weakness[2] in stating:

> The data should be seen as providing an acceptable baseline for a few basic characteristics which can be used to indicate project impact when compared with later surveys.

Simple before-after comparisons <u>without control or comparison</u> data never permit any definitive statement regarding the impact (or lack of impact) of an intervention.

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[1] A review of the dates on the fiches for multiple year borrowers indicates that in most cases the fiches (sic) are undated. In those cases where there are dates there are both <u>before</u> and <u>after</u> dates, with a larger number of fiches with dates indicating that they were filled out before participation. There is, however, the possibility that the date of beginning the program may have been put on even if the fiche was filled out later to complete an incomplete file since there is evidence that as the program proceeded there was an attempt to improve and update files.

[2] Particularly in light of the preceding.

The foregoing is to underline the difficulties and the need to carefully plan and implement baseline studies if their information is to be of any use to the development community.

Whether feeder or coffee roads are involved, we suggest the following approach before construction, reconstruction, improvement or intensive maintenance begins. Then, when the time for impact evaluation arrives, some hypotheses of intervention effect will be testable.

1. Select 5 to 10 areas where new roads or road improvements are planned. Because some changes in road designation will probably be made subsequently, err on the side of more rather than fewer. Substitutes will thus be available. We will work on the assumption that six intervention areas will be studied.

Designate an equivalent number of areas where no road improvements are planned. These should be as topographically and economically similar to the intervention areas as possible, but with low likelihood of fallout effect (positive or negative) from improved roads. This second group will constitute the control.[1/]

Both intervention and control areas should be selected by persons very knowledgeable of local socioeconomic conditions throughout the country. Such designators could be either Haitian or foreign social scientists, or Haitian officials who have wide knowledge of rural areas preferably from direct experience.

[1/] The term "control" is being used here despite the lack of random assignment of areas to treatments which strict scientific rigor would require.

2. Assign two to four social science researchers who have had previous experience in ethnographic studies in Haiti. A mix of Haitians and foreigners would be desirable.[1/] Most desirable would be three field workers and one project supervisor. The latter should have had considerable experience in field work, especially supervisory, developmental problems. Knowledge of Creole would, of course, be imperative for the field workers though the supervisor might get by with standard French. Also, all persons should have had experience in collecting both observational and verbal data, and of the latter, both guided and structured.

(Steps 1 and 2 might be reversed so the knowledge of the ethnographers could be more fully utilized. That is, the selection of communities would be done in consultation with them after they were assigned to the study.)

3. Arrange a coordination and orientation period of about 1 week's duration, to designate responsibilities, describe the study design, familiarize staff with purpose of study, review methods, and agree on research schedule for data collection, analysis, synthesis, and write-up.

4. Begin field work in six road areas (three intervention and three control), each ethnographer to study one of each. Estimated duration, 2 to 4 months. Several approaches for collecting data are possible at this stage:

a. By referral contact, attempt to locate and interview key informants. These should be formal and informal local leaders such as priests, teachers,

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[1/] A good possibility for field workers are the several young American anthropologists who have had recent field experience in rural Haiti. They are relatively easy to get on short-term studies due to the poor employment situation in academia in the U.S. The several G7 is aware of (including two members of our Adjunct Staff) are quite knowledgeable in the beliefs and behavior of rural Haitians.

civil leaders, and influential persons. They may be assumed to be knowledgeable about local conditions. In general, teachers probably constitute the most useful key-informant type in a rural peasant community. They can serve as cultural brokers since they are at least minimally acquainted with research needs while also having some understanding of the rural peasant's life. Moreover, they tend to have fewer biases than do other types of influential people in a local community. Thus, their information will generally be more objective.

Through guided interviews, information should be gathered on local socioeconomic conditions which might be influenced by improved roads. The questions herein submitted cannot be considered totally comprehensive though we feel the basic ones are included. Except for a few demographic questions, we will not include items unless we can hypothesize that improved transportation will influence the particular condition. Thus, the theoretical question to be asked will be, "Will condition x be increased, decreased, or changed in an indeterminate direction because of the influence of an improved roadway?"

Demography

a. What is the road area being studied (identification and limits)?

b. What are the general topographic conditions of the area?

c. What type of road exists currently?

d. What is its viability in all weather conditions?

e. Approximately how many people will be influenced directly (along the road)?

f. Approximately how many will be influenced indirectly (back from the road)?

Technology

a. What are the basic tools of production: Agricultural? Nonagricultural?

   Hypothesis: Increase.[1/]

b. What power machines are in use for: Agriculture? Transportation? (Trucks, buses, taxis, etc.) Other? (Cement-mixers, pumps, generators, etc.)

   Hypothesis: Increase.

c. What modern practices are followed in agriculture (fertilizer use, improved seeds, improved techniques)?

   Hypothesis: Increase, decrease.

d. For what purposes and how much are donkeys used for transport?

   Hypothesis: Decrease.[1/]

e. For what purposes and how much is human labor used in transport?

   Hypothesis: Decrease.

f. What other technologies are used, and how much for transport (boats, bicycles)?

   Hypothesis: Decrease.

g. What kinds of nonproduction goods are used which are obtained from outside the community: Household construction? Personal belongings: (transistors, clothing, plastic goods, buckets, lamps, flashlights, etc.)? Furniture and household goods: (beds, tables, cutlery, tableware)?

   Hypothesis: Increase.

[1/] Throughout this listing the increase or decrease hypothesis must always be considered in comparison with the control data.

Economics

a. What is the basic fare to nearest trade center? By bus? By truck? By other means?

   Hypothesis: Decrease.

b. How many commercial vehicles arrive and depart each day? To nearest trade center? To Port-au-Prince?

   Hypothesis: Increase.

c. How many transportation entrepreneurs serve the community?

   Hypothesis: Increase.

d. How many and what kind of businesses operate in area?

   Hypothesis: Increase.

e. How many markets exist in area and how frequently do they operate?

   Hypothesis: Increase.

f. What goods and how many are shipped: to nearest trade center? To Port-au-Prince?

   Hypothesis: Increase.

g. What proportion of marketing is controlled by women?

   Hypothesis: Decrease.

h. What is value of land along road?

   Hypothesis: Increase.

i. What kind and how many residential buildings are along road?

   Hypothesis: Increase.

j. How many people bought or sold land in last year?

   Hypothesis: Increase.

k. What kind and how much was produced for sale in markets (local or distant)? Crops? Livestock? Other?

   Hypothesis: Increase.

Social Structure

a. What kind of cooperative societies exist (with what function, membership, and frequency of action)?

   Hypothesis: Increase.

b. What kind of government services exist? (Agricultural, financial, medical, educational)?

   Hypothesis: Increase.

c. What kind of nongovernment services exist?

   Hypothesis: Increase.

d. Do people go to facilities in another town for medical, educational or other nonmarketing needs? Which?

   Hypothesis: Increase.

e. By what means of transport do children get to school?

   Hypothesis: Increase in numbers if road is used.

f. What other social and religious events do people spend considerable amounts on? (Baptisms, weddings, churches, funerals, fêtes, voodoo)?

   Hypothesis: Increase, although probably with a considerable time lag.

g. How do people spend most of their leisure time? (Traveling, drinking, sleeping, other)?

   Hypothesis: Increase.

Values

Which of the following would people be most likely to increase if they had more time or money: (Put in rank order.)

Investment in land		_____
Investment in other commodity		_____
(If other, what most often?)		_____
Ritual expenditure:	funerals	_____
	voodoo	_____
	church	_____
	other	_____
Pleasure expenditures:	travel	_____
	drinking	_____
	other activities	_____
	what?	_____
	not doing work (leisure)	_____
Social activities:	weddings	_____
	additional wives	_____
	other (if other, what?)	_____

Other Conditions

There is no way that all questions about the culture of a given community can be hypothesized in advance of field research. Therefore, the field workers should be sensitive for factors not listed, to be learned through observation; informal discussions with locals, and from the key informants.

b. Although almost all social science studies must depend on verbal information for much of their data, it is imperative to remember that observational information is more desirable. Language is a marvelous and thoroughly human device for transmitting information, but it can just as well be used for deception. So, the best policy is to use language for information when other methods are difficult or impossible and the probability of bias is low. But whenever, there is an option, reliance on observation is preferable. There are several such observational approaches that should be incorporated into a baseline study, as follows:

(1) Do observational survey of the roadsides and indicate the following on a map:

Location of residences.
Location and identification of businesses.
Location and identification of other types of structures which might be modified, increased or decreased.

Hypothesis: Increase or improve.

(2) Do an observational study of road activity. At a given location, count the types of vehicles, animals and people traveling. Probably this should be done for several hours on several different days. The times should be designated in advance and followed exactly so the same kind of survey can be done in the "after" studies.

Hypothesis: Increase.

(3) Do a survey at several time points of travelers, by foot, donkey, or vehicle. As a minimum, each should be asked where he/she was coming from, where he/she was going, what the mission was (to buy or sell something, to go to a clinic, to visit a friend or relative, other). If buying or selling something, what?

Hypothesis: Increase.

(4) Do a survey of local markets, noting types of items and prices for key items. These should include food, clothing, luxury and other goods. Also, sex of vendors should be tabulated.

Hypotheses: Increase in numbers of imported goods.
Decrease in numbers of females.

5. Also, gather pertinent data at this time from local records available, i.e., church, land recorder, tax office, court cases. In all instances, however, data should only be gathered if change can be hypothesized to be a consequence of improved road conditions.

6. Design a questionnaire, field workers to combine preliminary data and make up a standardized instrument for all communities. It should be based on responses to the questions of Groups 4a and b. It should also be designed for individual responses and put into codable or clearly comparative response formats. Examples: Question Technology could be modified to read: Which of the following practices do you follow in farming?

a. Use of fertilizer _____
b. Use of improved seeds or plants _____
c. Row cultivation _____
d. Other new procedures _____

Or, Social Structure - d. Do you or your household members go to any of the following in town: _____? or, _____?

a. Medical clinic _____
b. Dentist _____
c. Agriculture office _____
d. Credit union _____
e. Other (if other, what?) _____

7. On the basis of a rapid census, administer questionnaire to selected informants. The total range of socioeconomic levels should be sampled in proportionate numbers. It is suggested that 30 to 50 heads of households in each road area be contacted. Since each field worker will be doing one improved and one control road area, he will do 60 to 100 questionnaires total. So, if there are three field workers, 180 to 300 questionnaires will be completed.

8. Each field worker is then to shift to a second set of communities and repeat the procedure under Surveys, Information from Records, and Administer Questionnaire. The same questionnaire will be used so it will be unnecessary to do Nos. 4 (Guided Interviews) and 6 (Questionnaire Design) again. Of course, before administering the questionnaires or doing the surveys in the new communities, the local leaders should be contacted and proper rapport established. This phase should require less time than that spent on the first set of communities because Phases 4 and 6 will not be needed. We estimate 2 months being required. Another 180 to 300 questionnaires plus the data from surveys and records.

9. An additional source of data could be obtained during or just after the questionnaire interviews. A selected number of heads of households could be

requested to keep a weekly budget. This might include data on income, expenses and subsistence goods produced and/or consumed. A range across socioeconomic levels should be obtained. They should probably get some form of remuneration.

10. The data should be processed and a report written. We would suggest it be subdivided by subject and each part allocated to a different field worker. The summary/conclusions section would be written by the field supervisor. We would suggest this take no more than 2 months. The entire project then would require 6 to 8 months.

11. It is obvious that a baseline study has value only if there is follow-up. We recommend, therefore, that follow-up studies in the same communities be concretely planned at the time of the baseline study. Thus, 6 months and/or 1 to 2 years <u>after</u> the roads were improved, the same surveys and questionnaires would be administered. The elapsed time and number of such follow-ups would depend primarily on the needs of AID and the Government of Haiti, but it is apparent that too quick a follow-up will register only a small amount of change. Nine months would seem to be the absolute minimum and 1 year more desirable as the minimum interval.

12. We repeat, the general format of the analytic hypotheses should <u>not</u> take the simplistic form: "After" measure is significantly greater (or smaller) than "Before" measure. Rather, it should incorporate the control data so as to "partial out" other possible causal factors.

Hypothesis: Intervention ("After" - "Before") is significantly greater/smaller than the Control ("After" - "Before").

X. Ministerial Responsibility for Coffee Roads

1. Normally, the planning and building of roads in Haiti falls within the jurisdiction of the Ministry of Public Works and Communications (TPTC) with road maintenance being a responsibility of SEPRRN, a semi-autonomous arm of TPTC. The coffee roads are a unique case, being under the jurisdiction of the Department of Agriculture (DARNDR).

2. To supervise the construction of the coffee roads as well as some other construction activities, the Department has a staff described elsewhere in this report. The Department has no other road-building function or facilities, nor does it have a prior history of road-building responsibilities. The question, then, arises as to whether these "coffee roads" should be constructed under the Department of Agriculture as the appropriate agency or under TPTC.

3. Normally, good road planning and construction (as well as maintenance) require an organization of some depth and experience in road-related activities. That is, it has or should have a variety of specialists available who have knowledge of the various components that enter into the final product, such as location, pavement design, materials, and drainage, to name a few. Rarely can all these be found in one person. It makes little difference that in this case the roads are labor-intensive and intended to be low cost. In fact, these constraints underline the need for solid theory and techniques to assure that the final product will give satisfactory performance.

4. In this case, although the one-and-only project engineer still involved had the benefit of previous experience in the road-building organization, i.e., TPTC, that in itself cannot substitute for the resource depth and spectrum available in a road-specialized organization. In addition, there is no opportunity to apply combined judgments to road-building decisions which, in this type of construction, may sometimes outweigh purely technical considerations. We are advised that neither specialized nor general advice has been sought from TPTC for this work, the short joint meeting discussed elsewhere to the contrary, notwithstanding.

5. TPTC officials strongly oppose assignment of road-building responsibilities to others. They make the point that the nation's road system cannot be properly developed under multiple responsibility with differing standards, procedures, etc. They also point out that if TPTC is to be responsible for the maintenance (through SEPRRN), it should logically also control the planning, design, and construction phases. There seems to have been no determination regarding the responsibility for maintenance when these roads are completed. Using the Community Councils is sometimes mentioned. This seems logical, but early experience seems to indicate that they cannot be maximally effective without some technical direction and other assistance.

If SEPRRN becomes effective in working with Community Councils as proposed in the SEPRRN Phase II Project, then it could follow that SEPRRN, being the maintenance organization, should provide the maintenance through the Community Councils. Otherwise, SEPRRN could provide maintenance directly. In any case, it is difficult to see the logic of the Department of Agriculture maintaining a few roads in a system otherwise maintained by SEPRRN.

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p. 99, para 7 ".....the roads element of the loan should be under the organization responsible for the nation's road system, not some other organization with tangential interests." 99

6. The PPC engineer concurs that road building, in general, might be better served under TPTC, but suggests, and with some validity,[1/] that TPTC has not been completely capable of handling the programs for which it is already responsible and that such a small program as the Coffee Roads might well be lost among the others. TPTC officials reply that, if identified and funded, the size would not be an adverse factor.

7. With clear hindsight, we tend to agree that were we now in the project design phase (1973-1974), the roads element of the loan should be under the organization with tangential interests. But we are in 1979 and 43% of these roads are built. If at issue is only the 57% incompleted coffee road work of this present project, shifting that responsibility to TPTC at this time is not indicated in our view.

8. If, however, this coffee roads project is precursory to a programmatic effort of labor-intensive rural public works throughout Haiti (viz. secondary and tertiary road improvement and--subsequent--maintenance), for which we assume TPTC would have responsibility, then shifting the remainder of the coffee road work to them now, would serve as a "warm-up" or "shake-down" exercise for the larger program ahead.

9. A strong caveat needs to be considered. The choice of ministries is multifaceted. Posing the question in terms of ministerial responsibility is a bureaucratic convenience. The more meaningful substantive question must refer

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1/ See previous G7 evaluations of TPTC and SEPRRN.

to the issue of organizational posture vis-à-vis labor intensiveness: from "lethargic" to "enthusiastic." These three questions: the bureaucratic, the substantial, and the temporal may be visualized as in Fig. 6.

"Lethargic" may be defined essentially as lack of commitment.[1/] "Enthusiastic" is to label the ideal organizational condition wherein labor intensiveness is energized, where internal organizational propellents exist (i.e., leaders, supervisors, and reward systems), where the concept is, in a word, potentiated.

10. If labor intensiveness remains in the lethargic mode, it will make little difference whether projects are in Cell 1 or 2,[2/] in our view. If the choice becomes one between Cell 2 and 3, we would favor the latter. If the choice is between Cell 3 and 4 (a happy circumstance), we would be inclined toward Cell 4. As stated above, choices among Cells 5, 6, 7 and 8, are academic.

1/ As for example, the TAMS-TPTC stance concerning the La Vallée Agricultural Feeder Road and the IHPCADE posture regarding these same coffee roads.

2/ I.e., in one Ministry or another.

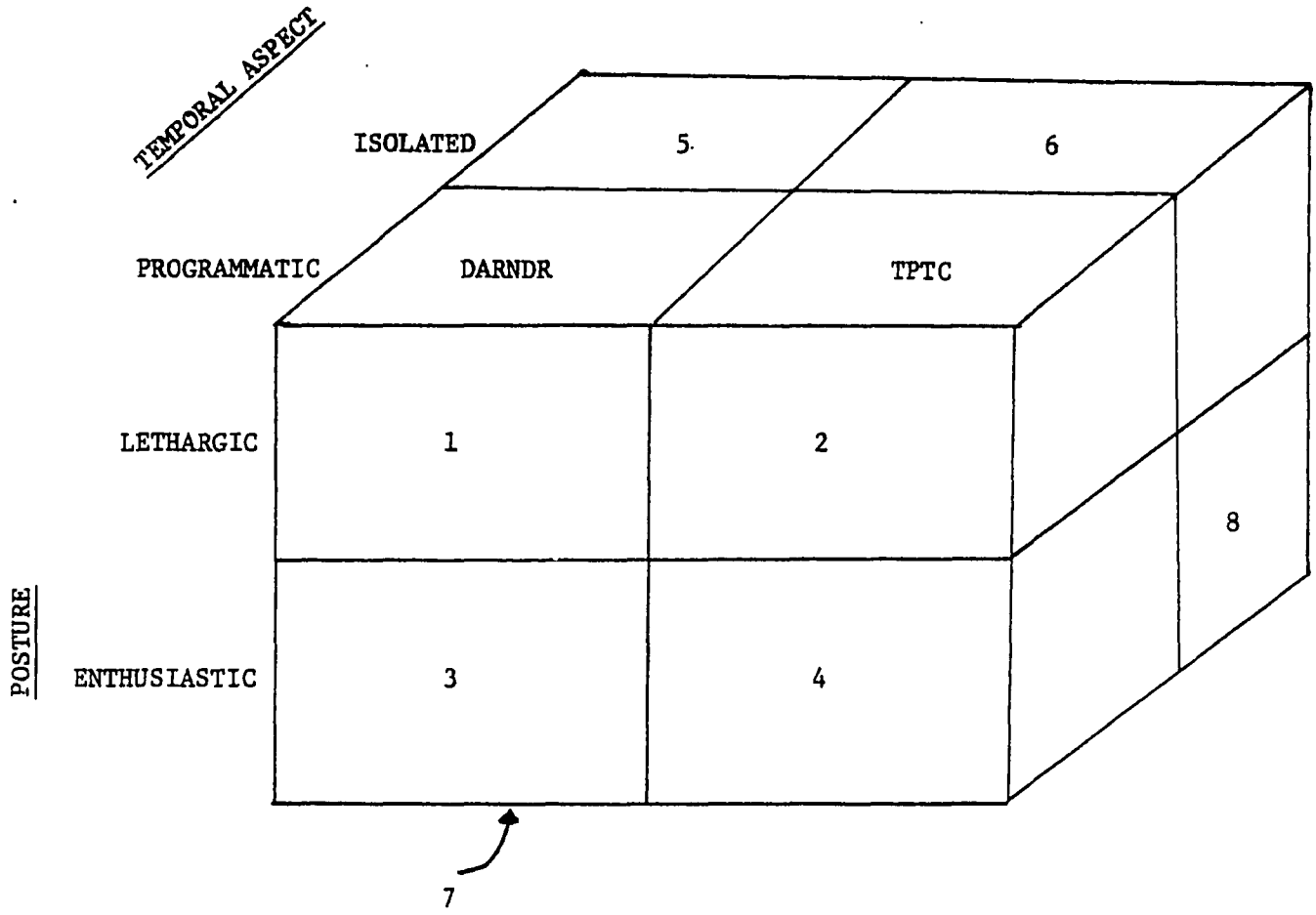

Figure 6 Temporal and Postural Factors Regarding Labor Intensiveness and Bureaucratic Choice

XI. Implications of the Coffee Road Experience for Other Rural Works

A. Introduction

The "coffee roads" are known widely for the labor-intensive method of their construction. This is one of the basic elements of the "experience" of the project. But it is only one. And even that one must be analyzed as a particular case if it is to be understood in a general sense. Projects using the labor method are like human personalities: every one shares certain general characteristics, and each one is also unique in some respects.

To begin, we state the following four-part orienting principle: (1) It is particularly important in considering the labor method to try to understand it "as it really is," i.e., on its own terms and in its own milieu; (2) It is ancient, pre- and anti-industrial, and awkward for the modern administrative mind. Being so "different," we relate to it, at first, only as a necessity--because rationally we think we must, but not because we like it; (3) Thus, an acceptance of its inner realities, and an appropriate adjustment of administrative behavior, is not easy; (4) Labor-intensive projects will fail (as many already have) unless the development agent makes such an adjustment and unless those concerned (the villagers, the laborers) are persuaded he has done so. Another type of understanding is also necessary: the villagers must become familiar with the true motives and methods of the capital city (central government) authorities.

Our method in trying to extract from the coffee road experience some "implications" useful in other more or less similar projects is, first, to break the experience down into its pertinent parts. Second, we consider what

some of the other projects might be, and their scope. Third, we raise ordinary observations (of the coffee roads) into, hopefully, valid principles or, in some cases, to action possibilities.

It would be foolish to attach too much precise lesson-value to the single (coffee road) case. On the other hand, it would not have been useful to the Mission if we had narrowed our outlook to what could be scientifically established. The balanced result is a set of broad observations, close to the mark, we believe, but still wanting refinement and corroboration in further approaches (see E below).

B. Description

1. The Parts:

a. What the project did, physically, is carve out short but difficult roads through rocky untracked territory. The roads stick to contour lines on steep hillsides or cut up the hills, gently, with multiple hairpin turns. Occasionally, they run at ease in the plains. Enormously difficult preparations (land clearing, excavations, leveling) were required before the equally rugged surfacing operations began. (Details were given above in Sections I and II of the Results.)

b. Where and When. Road sites are not far away at any point from mountain villages. The roads are supposed to connect coffee centers both to the national road network and to coffee-producing areas. This may be the official plan and, to some extent, the result. But the stronger community motive, we believe, is to connect villages (not just farm areas) to the outside world, even before (or, if it came to that, in lieu of) the coffee center connection.

Very important to note also that construction meanders along at its own pace. There are no hard and fast schedules and arbitrary output expectations.

c. Who are the laborers in the labor-intensive effort? There is a tendency to think of the "labor-intensive method" as if it were an abstraction rather than a group of live people at work.[1/] In any case, the people who are building these particular roads are: poor; mountaineers; mostly farmers of very small subsistence activities (the coffee cash crop being a secondary interest, as compared to growing food); and living in or having strong community ties to villages remote from government technology, capital, interest, and money--such as Pérédo, Macary, Fond Jean-Noël, Baptiste, Dondon, Marmalade, L'Asile, Beaumont, and so forth. (See Section VIII for further details.)

d. How? The "how" is The Method (described in engineering terms in Section I above). It is, first of all, "one hundred percent labor-intensive"--meaning, more precisely, that no power or energy other than that of the human body is present on site. (To clarify a point obscured by the phrase "100 percent labor," there is capital on this job in the form of the ubiquitous Abney level, plus wheelbarrows and other hardware and hand tools. The wheelbarrow, and also the "Pettis-Vibro" roller-compacter, could be considered machines or capital equipment, but they generally are not, in Haiti.)

Second, the capacities of the human back and hand are augmented primarily--indeed, almost exclusively--by the simplest of hand tools such as hammers, picks and shovels. (The "intermediate" tools such as wheelbarrows

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1/ The French expression "moyennant une forte intensité de main-d'oeuvre," seems particularly abstract.

are notable for their rarity.) Not only are the tools simple, they are old and worn out and many are broken or without handles, some 2-1/2 years after work began.

Third, a carefully worked-out division of labor exists among the crews, which specialize in different phases of the construction sequence. (Again, refer to Section I.)

Fourth, materials are all local. This does not obviate transportation needs. Rock (for the Telford base, the macadam level of surfacing, drainage canals, retaining and other walls, etc.) is carried at distances which raise the issue of possible mechanized or animal substitution, or supplement, for the human head.

Fifth, the doing of the work, as stated earlier, is directed constantly on site by a chef d'équipe (team leader). The team he has charge of numbers 19 men. Along any of the 5 road sections of the project, which will all average about 25 Kms in length when completed, there may be at a given time anywhere from 3 to 7 teams at work. Each of the (five) sections has a foreman whose jurisdiction and responsibility is the whole section and all its teams.

Three of the project foremen are local men who were promoted from team leader status. Two others were discovered outside the region where they now work and are brought in via Port-au-Prince. (Team leaders, on the other hand, are all from nearby villages or habitations.) Foremen have an important, but not final, voice in selection of team leaders. Selection of the rest of the men is also largely a foreman and team leader prerogative, although Community Councils and other influences and desires no doubt guide them. We somewhat got the impression that rotation of the benefits of employment was a

precept, in a local manpower policy. There is rotation, in any case, as individuals leave to tend to other duties, mainly the crops on their own land.

Finally, among this list of things that touch or have direct connection with labor: The fact that they work from 7:30 a.m. to 3:30 p.m.; that most (perhaps all) go home at night, walking as little as 5 minutes or as long as 2 hours (or, 4 hours round trip); and, that their rate of pay is 6 gourdes 50 (U.S.$1.30). (The logistics of paying have been spotty at all the sites of this isolated project, as noted elsewhere. Thus, and considering that the factoring, discounting and loan-sharking that are made possible and necessary by delayed payment of wages, are common practices, the effective rate of pay must be noticeably less than the official quotation.)

2. Qualities and Perspectives

Given these parts of the "method," what are its dynamics, what fuels and drives it? And does it have connections with the outside world?

a. Layout (Design) and Leadership. Necessarily, project decisions as to site selection, road alignment, and construction design had been made before the work began.[1/]

In this project the design or "layout" man happens to have been an expatriate. He would not have had to be; nor would any expatriate engineer have sufficed. There was an idiosyncratic fitness about the person involved, deriving from qualities peculiar to him of: character, personality, experience, and, ultimately, leadership. We do not imply that no one else could have done

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[1/] We distinguish analytically between the project that is the labor itself, intensively at work, and inputs to that project of a planning, engineering, or catalytic sort.

this work. We do mean that the idiosyncratic, the individual human case, is likely to be a major factor in the progress of any labor-intensive activity.

In any case, this man "walked and walked," as he put it, and "talked and talked." His aim in walking was to obtain the professional, technological, engineering data necessary for the road trace (alignment) and the construction design. He talked in order to insure community participation and backing vis-à-vis the particulars of the road's location and its physical specifications.

In addition to working out a suitable physical plan, and to engaging the communities in an interested and reciprocal relationship, this "point man" (directly or not) also built up the local structure of labor supervision and organization by means of which the work is now proceeding. In this function the two key elements were, we believe: (1) identifying the various tasks involved in the job and classifying them in a way such that the "division of labor" could be made and the tasks and teams could be matched; and (2) the initial selection of team leaders and foremen.

b. Location. We underline that the project sites are isolated from the outside world. (To this day, some cannot be reached at all by wheeled vehicles unless favorable weather and vehicle conditions happen to coincide.) No characteristic of the project is more important than its isolation, both to the project itself and as to implications it may have for others. Once the outsider reaches one of these roads, he senses that the communities, the people, are trying more or less desperately to break out of their isolation and join the mainstream of the national society and culture.

c. Administration and the Capital City. The impression we have reported (in Section IV, GOH Support), that the project received very little

attention from either of the agencies supposedly in charge of it (successively, IHPCADE and PPC) is recalled now and reviewed as if we were standing inside the project and looking out toward Port-au-Prince. As the laborer sees it, what contact does the project have with, and what does it seem to get from the capital city? What is the central government's role here? The answer is brief: It provided the layout man (now gone); it provides follow-up engineering visitations, maybe once a month (apparently just to see if all "goes well"); it pays salaries, occasionally; and it provides the tools, or once did so. That is all.[1/]

This observation may be taken as criticism by some. We have become accustomed to a certain style of central government participation in Third World development. In the capital city, one finds planners, administrators, technicians of all sorts, brains, ambition, organization, money and bureaucracy. Over the years, development became inconceivable unless packaged as a "project" or "program," inevitably designed outside the "target" area. Despite legislative pressure to seek guidance from the "felt needs" of the "rural masses," it is generally the felt need of the engineer in charge of the project, or of the technocrat who designs, programs or coordinates it, that is decisive in what the project will consist of and what resources will be expended in it.

So, when we discovered that this was not "how it was" in the orphaned coffee roads, we supposed that the project was foundering. We were pleasantly surprised when we found it alive and consequential[2/] (see Section III

[1/] Mats Lundahl quotes Roland Wingfield as saying that, "To the vast majority of the Haitian masses, the notion of the state is an abstraction beyond their comprehension." (Op. Cit. p 345).

[2/] Even if meandering.

Achievements and Section VIII Socioeconomic Implications). And then we began to suspect that the genius of the project was, precisely, its freedom from central administration[1/] or, its remarkable (perhaps inadvertent) trust in "the people." Where we found the dynamic of the project was in the community. And we could, paradoxically, congratulate the government for its wisdom in refraining from interference or even excessive attention.

3. Recapitulation of the Essentials

a. Community motivation, (individual, social, psychological, economic), has been of a high order. This is not a rare phenomenon in Haiti's rural society, we surmise, but it is not universal. If the success of labor-intensive work depends on it, plans must be held in abeyance until the potential for community motivation is realistically ascertained.

We note what seems, from a village perspective, a condescending tendency on the part of outsiders to fault the project for an excess of quality over necessity. The assumption here (in the CAP, for example) is that minimum is best, that a purely functional standard is good enough for peasants; that with the traffic foreseeable, only this surface, or that sidewall, is justifiable, and it would be unnecessary and unwarranted to put more than the minimum of workmanship, beauty, or design capacity, into the work.

1/ Lundahl remarks "...the common policy of practically all Haitian governments with respect to improvements in the agricultural sector has essentially been one of laissez-faire." And he continues, "At best ad hoc measures have been undertaken in response to exceptional...changes in the external environment...within which agricultural policy has to be decided," a remark which could well be applied to the U.S. interest in initiating the roads work, which seems to exceed that of the GOH. (Op. Cit. p 355).

In the present case we found many of the roads to be of high quality, including in some places attractive-to-beautiful workmanship reminiscent, say, of a Roman viaduct. The lesson is vital: The villagers building the road want the road, are enormously proud of it, take endless pains with it--and, if all this were not possible, might not build it at all. Without the alleged "excess of quality" (or, at least, without some opportunity for pride, aesthetic or emotional drive), villagers might well refuse government inducement or prodding to work (and it is their work, of course). In this perspective, design standards, quality, etc., must be measured against a new yardstick.

b. The Uniqueness of Each Case. We have mentioned "idiosyncracy" of leadership as a reality in labor-intensive activity, along with the particularity of community motives and capacities. Obviously, where two factors in a formula are so highly individual, the results will necessarily be highly variable.

Is it then futile to try here to generalize while simultaneously knowing that each project is unlike any other? No, what we are really getting at is the overriding need for planners carefully to note and be guided by precisely what is going on in a given "labor pool," before making assumptions as to how it might best be used. The successful experiences do not lend themselves to xerographic copying. Leadership qualities cannot be so specific across projects as to make one personnel profile the universal answer. Ultimately, it is not "method" at all, but the human animal (in its stubborn individuality) that we deal with when we undertake labor-intensive projects.

c. Self-Sufficiency. In the near-total absence of administrative support in this (partially successful) project, it might seem that we are

logically bound to conclude that isolation is a condition of good labor-intensive activity. And, we wondered what the chain of events would have been if just one gasoline engine had been introduced in the project for any function at all. Not difficult to speculate on the links this would instantly have created--the elaborate logistics and administrative interdependencies--links that would have altered the basic nature of the program.

We do not maintain, however, that machines and engines are antipathetic to good projects just for the reason that they would create the technological, administrative and financial connections that are absent in this project. If in reality, such links are common in most rural societies and in the ordinary labor-intensive program, then the main lesson here is simply that the optimum connection is not always the most elaborate connection. The balance in this matter should not be taken for granted but should be worked out carefully with the community, with sensitive appraisal of its possible effects.

C. Potential Projects and Official Preparations

We turn briefly to the other side of the question, activities appropriate for labor-based methods on which the coffee experience might shed some light. A word also on official attitudes and preparations.

Developing or applying detailed rules to the potential works is beyond our aim here. One of the things we recommend doing later on is to refine labor-method precepts, such as those articulated here, and to move them along into the category of operational guidance. (See E below.)

1. Background

Labor-intensive programs aimed at reduction of under- and unemployment were a priority in plans for the UN's Second Development Decade. In its turn, Haiti gave the idea a prominent place in the 1976-81 Five Year Plan. Haiti also participates in the International Labor Office's regional approach to the question. In 1976, a GOH interagency task force prepared a study and a preliminary program, in the regional context, for labor-intensive works aiming at the construction of an economic and social infrastructure. (See Appendix.) The document later served as foundation for a joint UNDP/ILO/Haiti project, now current, which proposes to establish an institutional structure in the GOH for planning and guiding the implementation of labor-intensive projects in the rural sector. Thus, we note, the concept is altogether a familiar one in the GOH and, presumably, in the international organizations working with the GOH. We briefly visited with various offices in Plan, TPTC and the Department of Agriculture (Irrigation, Soil Conservation, Afforestation, etc.) and found alertness to the concept, if not necessarily to the action it implies.

One comment on these plans and programs is that they do not always take as their central purpose the benefit of the rural sector and the rural population (i.e., the workers doing the work). Important official purposes, in contrast, are: slowing rural-urban migration; building a physical infrastructure; increasing food and export-commodity production, and so forth.

Another comment: In the interest of clarity in thought and planning, we suggest that the term labor-intensive project can be misleading. The issue is one of labor-intensive method, in any project. (This does not, of

course, apply to labor-intensive activity where the main purpose is relief or income distribution and in which the design and raison d'être are dictated by the method.) The distinction is more than semantic: worldwide there is a risk that the method will be mistaken for the substance, supporting a host of misconceived initiatives.

2. Programs

USAID has in view, at a preliminary planning stage, a rural works program including (illustratively) $7.5 million for secondary and tertiary road rehabilitation and maintenance and $2.5 million for rehabilitation of small irrigation systems (projects averaging about $110,000 each).

The organizing principle of this USAID package is public works, or engineering, though not of a sophisticated type, of course. The last item on the engineering list, irrigation systems, is also to be found in the agriculturally-oriented PDAI (projet de Développement Agricole Intégré, or, Integrated Agricultural Development Project). Indeed, the irrigation element in the two programs--that is, the type of irrigation scheme to be undertaken--is exactly the same. But, in the PDAI context the schemes are seen merely as the downstream end of interconnecting resources management and production activities--which include: erosion control through check dams, terraces, revegetation, and afforestation; water storage; perhaps fish ponds, and so forth. All are feasible with very high proportions of labor investment as compared to capital, and many cannot be done any other way.

Also on the AID planning shelf are: revamping current feeder road maintenance activities, and current feeder road construction work, so as to

put them more in the labor-method mold. Next, having taken an interest in the coffee roads, we would not want the possibility of an extension of that program (to the other 155 Kms that have been in mind) to be overlooked. Going on to do these other coffee road sections might nearly simulate a laboratory or controlled experiment, comparing results under conditions very similar to those in the present work, excepting for the presence of the original "point man."

CARE's Food for Work programs (100 percent labor intensive, by definition) have included, at one time or another, such activities as road construction, irrigation, potable water provision, rat control, terracing, nurseries, classrooms, latrines, low-income housing, dispensary construction, community centers construction, and other basic building renovation.

The UNDP program mentioned above is outlined in the Appendix. It breaks down into two parts: land improvement/soil conservation, and roads.

We conclude that there is variety and scope for labor-intensive work in Haiti. It would appear, indeed, that virtually all rural development here must of necessity use that method. It is not a question of identifying works appropriate to the method, therefore, but of making its precepts and procedures as well known to central government administrators as they perhaps already are to the villagers themselves.

D. Precepts, Criteria, Strategy

Combining what we have abstracted from the coffee road experience with pertinent views and analyses from outside that case, we arrive at a few central propositions. These can be considered as preliminary input to the development

of policies and guidelines in the matter. The topics break down into tactical level considerations and the larger or more vital questions of "strategy."

1. Tactical Level Considerations

a. Technical

(i) Trained enthusiastic, and sensitive outside staff must be made available, at some point in the preparation and initiation of a project, to insure that the community (or other project agent) is proceeding on physically and technically sound assumptions. This may call for an architect, a soils analyst, a surveyor, or some other mid-level technician, who would advise once or periodically, but not remain with the project. (The staff person might also be an "engineer's aide," a "superintendent" type of worker, a water-master, a foreman, even an engineer.) This item of "capital city connection" seems a minimum necessity in any but the rarest type of local project.

(ii) The technology is simple but it must be rationalized. Thus, wheelbarrows may substitute justifiably for head-loading, in certain distance and terrain conditions. Hand tools can serve a double function: (1) to do work and (2) give labor-intensive projects a needed boost in status, prestige, charisma, pride. To do the latter, tools must be furnished that are of high quality and well designed. Broken surplus items will not do the job.[1/] As to maintenance, someone could be given the specialized function of tool and

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[1/] Admittedly this "solution" gives rise to the problem of tools control so that they do not disappear.

equipment maintenance and repair. (We saw little of that on the coffee roads.) Provisions making it possible to repair handles (of picks, shovels, etc.) might yield a high return. Local iron-workers (blacksmiths) might be sought out to make and/or repair metal tools.

(iii) Portage of materials accounted for perhaps a third of the cost of road surfacing in the coffee model. Not necessarily in this project, but in others where isolation is already bridged, wheeled and powered vehicles may be cost-effective and also consistent with the labor method, i.e., desirable within some optimum labor-capital balance.

The mix, or balance, issue is a fundamental one in all labor-method discussions. But, the only point essential here is that the balance has not been usefully expressed at the theoretical level[1/] and, consequently, in Haiti as in many places, it will have to be intelligently sought case by case.

(iv) Concerning skills, villagers themselves will generally contribute more than sheer manpower: They will have, or be taught, or otherwise acquire, the indigenous skills needed in the activity. There is a training issue here, where, again, a balance must be found between the time and effort going into training and the employment or value, under the local circumstances, of the skills developed. It would be an imbalance, say, to train a mason for 3 months for a local job that might only last for 6--unless something practical were in view for the use of his skill thereafter.

(v) Recalling the absolute necessity that a community want a project, rather than merely accept it for the cash it may bring in, we note the

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[1/] Except to some extent in the recent World Bank Report, "The Study of Labor and Capital Substitution in Civil Engineering Construction," Washington, September 1978.

tactic suggested by the coffee road consultant: that government planners take their cue on the question of community interest from whether an activity has already been initiated, "spontaneously," (by the community). If so, they would offer to step in to monitor or interject sound technical guidance. Discrimination between genuine as opposed to sham and opportunistic community councils may also be facilitated in this manner.[1/]

b. Administrative

The government does have a role, no matter how important community initiative may be. Only the authorities can choose, in different places and circumstances, between capital formation as a goal in labor-capital substitution, rather than employment generation or emergency relief. Only the government can make the economic calculations that may be (but are not always) necessary, e.g., cost/benefit, budget and tax implications, the recurring cost factor, and so forth. Government would also consider the development of skills and their possible mobilization for use elsewhere.

The government may usefully perform the negative function of preventing ill-considered projects. Communities, with or without PVO or food inducement, have often launched road projects that cannot but fail, lacking drainage, say, or having slopes so steep a laden-down woman might be able to negotiate them but not any vehicle yet developed.

Perhaps most important: if cash compensation has been promised as part of the project plan, the government service concerned must insure prompt payment of the wages, else the project and possibly the entire program could go sour.

[1/] Reportedly, some have been known to spring up like mushrooms at the merest hint, for example, that a food-for-work project was in the offing, one conditional on the existence of the council as implementing agent.

Having noted these functions, we reiterate the main point that the government should restrain itself in labor-intensive activities and keep to a low profile. Any excess of interest, solicitation, and direction can affect the community interest, and misrepresent what is needed/wanted/possible in and from the community.

c. Spatial Tactics

We mention here just a few of the many issues related to location that are raised by labor intensiveness in Haiti.

Generally, the mountains or highlands are more apt for the method than valleys and lowlands. The highground is more rugged. Machinery is less easily introduced. Fewer roads give less access to maintenance and logistic facilities (garages, fuel outlets). Labor mobility is reduced--a desirable factor in the use of the method in Haiti--as is wage competition from capitalized enterprises (factories, services) and government. (See the "mountain-strategy," below.)

It is important, and probably essential, in Haiti, that the work activity be within walking distance of the workers' habitations. The need for encampments is eliminated. Food and other supply problems are minimized.

The closeness to home has other reasons. The capital created (road, irrigation system, erosion control, community facility) will serve the very workers who made it--insuring a motive at least as important as the wage benefit.[1/]

1/ Again quoting Lundahl: "According to the 1864 Code Rural the peasants had the obligation to perform labor when local roads were to be repaired. This law had not been enforced before the American occupation of 1915, however,...but now the Americans revived the corvée. The road gangs were kept under Gendarmerie protection, and the peasants were roped together during the work and were brought outside their home areas in contradiction to the law." (Op. Cit. p 336, Emphasis added.) It seems that the "passive" or "soft" state of today is incapable of getting labor to perform in the rural areas except through voluntary participation. And it is now all the more important, though not required by law, to recruit free labor close to home.

In Haiti, there is a contradiction between the fact of lowlands being less apt for the labor method and the fact that technically, physically and economically, one of the most desirable labor-method activities is irrigation, all of it apparently in the low places. Scores of small irrigation systems are candidates for rehabilitation in programs running into several millions of dollars. To date, they have been chosen on economic and technical grounds. But as they are all automatically labor-intensive, the planning emphasis now might well be to inquire into which schemes, in which locations, give promise of being relatively more successful in use of the labor mode.

d. The Community

At all costs, the community character of the works must be maintained if the labor method is to be productive. Here and throughout this section, we have in mind mainly the capital formation (infrastructure) goal of the works, rather than employment for its own sake or for food or money distribution. However they may be represented in the activity, the community's interest, discipline, motivation, and sense of responsibility are simply indispensable.

e. Time and Rhythm Factors

The labor method is seen in Haiti as drawing primarily on farmers, or farm laborers, for the execution of rural works. As a grand economic strategy, this seems sound enough and in any case we accept it as a given.

It imposes certain conditions, however. Crops must be attended to by men working seasonally or intermittently on the project concerned. There will also be labor turnover as projects move onward as, for example, in road construction. Highly variable recruitment conditions will exist, conditions

specific to given seasons, places, crops and even individuals recruited. For these and other reasons easily imagined, the precept is suggested that: in labor-method activities, the project does not create the labor conditions but, rather, the labor conditions create the project.

Pursuing this principle, the usual time and schedule considerations that apply to public sector work are largely irrelevant. Deadlines are no longer the sole criteria of sound administration. The stretch-out or even the acceleration of work progress will be largely a decision of labor, not management. The general or national interest is maintained in such situations by a ceiling on the total of money the central authority is prepared to commit to the activity, whenever it may be performed. Thus, the labor project will have labor's rhythm, not that of the familiar development project.

Under this circumstance, the first challenge to central government managers will be to adjust to inexorable new conditions. The alternative would be to set up project schedules and to meet them by importing labor when, because of the predominant economic rhythm of the locality, sufficient local labor cannot be easily fed into the schedules. But, in our view, this procedure would destroy the community nature of the work and ultimately undermine rural development altogether.

2. Strategies

Boiled down, the preceding discussion comes to three considerations of overriding primacy in the Haiti context.

a. Laissez-faire. Government must make a deliberate attempt to

curb its proprietary and managerial instincts.[1/] The ideal stance is that of the benign grandfather (rather than the ever-present father): To supply guidance, good tools, the needed materials, funds, plus goodwill and recognition, but letting the community take it from there.

b. Rural Development Strategy. When planning for the labor method, it is probably not enough to speak of general or technical/sectoral needs (e.g., soil conservation). To mobilize the method effectively and achieve self-perpetuating momentum, we submit, it is important to think of it as serving a larger economic strategy, political-social goals of dimensions capable of inspiring. We are aware of three such possible concepts:

(i) The integrated upstream/downstream, resources management/production, concept;

(ii) A "mountain strategy" which would establish dispersed centers ("cellules") of development in the highlands and train a corps of, say, 100 highly-motivated "agents animateurs," as keystones of a large-scale rural development;

(iii) The political philosophy or ambition of undertaking "nobly proportioned" enterprises such as to mobilize the energies and mass participation of the rural population. We have no immediate sense of the merit of these

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[1/] We have said above that the GOH was all too inclined toward laissez-faire in agricultural programs. This does not mean that, when it does enter a situation, it does not interfere, or prevent useful things from happening, or overmanage and overdirect. All these common government (any government) tendencies are perhaps tolerable in some sectors but are fatal when the labor method is used--as it is in essence locally propelled. Moreover, although labor methods may imply supervision-intensive at the first level, that must not be extrapolated to the superordinate strata.

strategies, but we do think that generous hopes are vital in creating a new sense of action, a new élan.

c. Leadership and the Layout Man. Also at this highest level of importance, we include a factor already mentioned, the layout function--or, rather, the combined factors of leadership and technical "layout." We believe the crucial importance of having an effective "point man" cannot be overstressed.[1/] He must have the essential personal qualities, and he must inspire confidence in his technical capacity, i.e., in tracing out or designing the project, whatever it may be.

If planners were allowed to consider only one issue in planning the use of the labor method, it should be: how to describe, recognize, select, and obtain the people needed in that role. We have said the matter cannot be reduced entirely to science, but that does not mean that wisdom and manpower experience will be useless in such a personnel search.

E. Further Preparations

This section has tried to suggest the nature of the labor-intensive method and how it might be used to best advantage. Finally, a few thoughts as to what next steps may be desirable in order to bring the subject to the operational level.

First, due consideration might be given to continuing with the coffee roads program (the additional sections) as a new and more "controlled" pilot project.

Second, AID's prior experience with labor-intensive work should be exhumed and analyzed. In addition to the Feeder Road Pilot Project at La Vallée, there

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[1/] He need not be the director of the project.

are (at least): the mid-1950's "Rice and Bean" road project at Acul du Nord-Gallois, near Cap Haïtien; the Plaisance-Pilate "servizio" road project, about 1960; the so-called Dondon-St. Raphaël road (actually, to either side of Dondon), also about 1960 and also "servizio"-sponsored; and the Chantal irrigation scheme west of Les Cayes.

Checking back over available experience suggests a third approach, a literature search, to broaden the perspective and, whether or not it proved enlightening, at least to give the Mission confidence that it was aware of all that has been recorded on the subject.

Fourth, the Mission should stay in close touch with the Département du Plan, which is becoming more active in the matter and which, in any case, has responsibility for it at this stage. (Later, the implementation of labor activity will devolve on the operating agencies.)

Fifth, as implied under "strategies," above, it will be increasingly important to visualize the labor method in the context of a rural development strategy, and U.S. objectives in that regard. Hence, the topic might be given more emphasis, or more explicit attention, in both field and Washington program reviews.

Finally, the task of describing labor-method precepts in direct relation to potential projects should proceed apace, whether in-house or with outside help.

RECOMMENDATIONS

The following suggestions are listed under two headings: project specific and labor-intensive general.

PROJECT SPECIFIC:

With regard to the existing Coffee Roads Project, Group Seven suggests the following:

1. That laborers be supplied with adequate hand tools at the earliest practical date and that provisions be made for stocking and issuing replacements as required. Once properly supplied, additional distribution could be on a replacement basis with broken tools or handles repaired by a local craftsman.

2. That USAID exert maximum pressure to meet coffee road payroll obligations within a reasonable time following the obligation (say, 1 month).

3. That a policy be adopted and implemented which recognizes varying subgrade conditions and adjusts pavement thicknesses or corrects subgrade to insure uniform pavement support.

4. That greater emphasis be placed in providing drainage, both longitudinal and transverse, at the early stages of construction. (Suggested: At least rough longitudinal ditching where indicated at the 3-meter phase, and essentially complete (though not paved) ditching at the 5-meter stage, prior to paving.)

5. That consideration be given to alternative paving materials for the roadway where such materials exist, are more easily obtained, or can be more economically placed, than the existing standard. This would necessitate alternate standard pavement designs to reflect the use of other materials.

6. That the present intent to coat all macadam surfaces with a mixture of lime, bagasse and soil be reexamined to determine if it offers any significant advantage over selected soils alone.

7. That road maintenance be recognized as a need immediately upon completion of any segment of road (say, 1 Km) and that it be formally assigned. Whether maintained directly by SEPRRN or through community action, we suggest serious consideration of the system whereby one or two individuals, preferably ones previously involved in the road construction, be provided with appropriate hand tools and assigned responsibility for routine maintenance for a specific short section of road (say, 1-3 Kms). Unusual maintenance conditions would require appropriate additional support from SEPRRN.

8. That an analysis be undertaken to determine the various elements of construction to permit rational consideration of alternative materials or methods.

9. That USAID focus promptly on what its position would be if the GOH favored a continuation of the Coffee Roads Program, both for completion of present plans for 105 Kms approximately (together with maintenance arrangements) and for additional sections totalling a possible 155 Kms. (We did not examine the latter issue and make no recommendation about it. On the other hand, nothing we heard seemed to argue against the continuation. Arguing for it, among other things, is the value it may have in further development of the labor-intensive method.)

10. That if the present 105 Km project is to be the beginning of a larger, programmatic effort, responsibility for roads be shifted to TPTC.

LABOR-INTENSIVE GENERAL:

Concerning the application of labor-intensive approaches in other Haitian rural works, we recommend the following:

11. Consider how to structure a possible coffee road extension program in a way as to maximize its value in refinement of labor-intensive methods (e.g., a pilot test of payment per unit of road achieved rather than per day).

12. Contrary to the coffee road experience, furnish labor-intensive efforts with imported, high quality, well-designed hand tools which will not only permit getting the job done faster and better but, perhaps, more importantly, may correct somewhat labor intensiveness' deficit in prestige and status vis-a-vis equipment-based approaches.

13. AID experience with labor-intensive work is greater than the Mission may realize. The various cases should be looked at for possible lesson value and for "literature" they may have produced (project reports, end-of-tour reports. etc.).

14. Therefore, carry out a literature search on the topic in Haiti with worldwide supplements from Washington sources.

15. AID, with GOH cognizance, should begin to organize its ideas as to a strategy of the labor-intensive method, covering such things as: the optimum role of Government and of technical assistance; standards in various design matters; cost guidelines; position in regard to scheduling of given projects, and, phasing of sector programs, and so forth. This would serve important archival, as well as future project design, functions.

16. Conscious and systematic communication on the topic should be maintained between the USAID and the GOH (at present, the Plan Department, plus selected other services mainly in TPTC and Agriculture). USAID might also initiate contacts on the subject with other international agencies.

17. Within the Mission, a single person should not be given the labor-intensive assignment (except perhaps as an information resource depository) since it may touch on everyone's work. Rather, everyone should be invited to consider the topic in their analytic and planning approach to any potential project.

18. The labor-based method should be counted as an element of both national and rural sector goal strategy in all future high level policy deliberations.

DEFINITIONS

Abney level:	A hand-held surveying instrument used to measure vertical angles.
Alignment:	The route or location of the road. May refer to general or detailed.
All-weather road:	A road so designed to permit travel under all weather conditions. Refers primarily to surfacing materials.
Bagasse:	Used in this report to describe the ash of burnt sugarcane.
Bank run or Run of bank:	Pertaining to materials in the hillside or bank (may be pit) which can be excavated and used "as is" for construction.
Base (Telford):	A natural or prepared construction material placed on the subgrade intended to provide strength to the road by spreading the load: Usually rock or gravel, but may be other. "Telford" as used in this report means a base consisting of rocks placed side by side.
To choke or Choking Material:	Filling the voids of the macadam with fine-grained material to prevent displacement. Added benefits of material: has binding or cementing qualities. May be natural or prepared.
Dry wall:	As in "dry-wall construction" meaning the rock or stone is placed and fitted to form the wall or other structure without mortar for binder.
Grade:	The rate of change in elevation of a road, measured in %, i.e., 5 ft difference in elevation in 100 ft horizontal = 5% grade.
Macadam:	Used in this report to describe a layer of broken rock placed on the base to provide a more even surface and to add strength.
Penetrometer:	An instrument used to measure resistance to penetration (in this case, the ground) thus an indication of load-carrying ability.
Plastic soil:	Usually clay soil which becomes soft and sticky when wet, hard when dry. When properly combined with other soils, useful in developing stabilized mixtures.

Raveling:	The displacement of materials due to tire action.
Retaining wall:	A wall constructed to retain or support roadsides where the terrain is unstable or too steep to be self-supporting.
Subgrade:	The natural earth prepared for placement of the various materials making up the road structure.
Swale or Dip:	A low place constructed in the road to permit water to drain across.
Switchback:	Sometimes called "hair-pin" curve. Used in locating alignment on steep terrain to gain or lose elevation.
Trace:	Used in this report to denote the rough path marked and leveled to mark the proposed road alignment.

SOMMAIRE

A. Cette étude a pour but l'évaluation des performances aussi bien que la préparation de la composante routes (105 Kms) du Projet PPC à la date de la l'échéance des 5 ans de l'Accord de Prêt, c'est-à-dire août/septembre 1979. Des investigations sur les besoins socio-économiques de base devaient être entreprises aussi bien que sur les implications qui s'avéreraient à d'autres projets ruraux recourant à la main d'oeuvre intensive.

B. Les opérations conduites sur les 5 routes utilisent de la main d'oeuvre intensive, c'est-à-dire sans machines et sans voitures. En effet, un minimum d'outils manuels sont disponsibles jusqu'à présent.

C. La force de travail comprend des brigades de 20 travailleurs chacune (un chef d'équipe et 19 travailleurs). Il existe 3 à 7 brigades qui travaillent sur chacune des 5 routes.

D. Les étapes successives de la construction de chaque route sont les suivantes:
(1) Faire un levé du terrain;
(2) Etablir un sentier ayant 1 mètre de large;
(3) L'élargir à 3 mètres;
(4) L'élargir à 5 mètres;
(5) Poser la base Telford (pierres de 15 cms.)
(6) Poser un macadam de pierres cassées sur la base Telford.
(7) Couler un mélange pour lier le macadam; et
(8) Creuser des fossés.

E. Quant aux méthodes de main d'oeuvre en général, les standards haïtiens dépassent ceux du Kenya et du Honduras.

F. Bien qu'il n'y ait que 2 Kms de chaussée qui ont été complètement achevés jusqu'ici, dans l'ensemble, les routes sont achevées à plus ou moins 43% (lorsqu'on associe la distance et l'étape de construction atteinte). La qualité du travail sur la route la plus avancée a été jugée bonne à excellente.

G. Les dépenses jusqu'à présent totalisent $455,000, c'est-à-dire, 67% du budget original. Les dépenses projetées par le Groupe 7 excèdent de plus du triple (3.3) celles envisagées par l'ingénieur conseil américain (c'est-à-dire, $661,000 vis-à-vis $203,000).

H. Le soutien du projet par le Gouvernement d'Haïti a été de loin inférieur à ce qu'on s'attendait tandis que les effets de cette indifférence ont été moins dommageables que l'on ne le craignait.

I. L'organigramme actuel est adéquat pour l'achèvement du projet. Une assistance technique supplémentaire de la part des Etats-Unis n'est pas nécessaire pour procéder aux ajustements nécessaires.

J. L'ingénieur conseil a représenté à lui seul l'assistance technique en génie grâce aux charactéristiques personnelles de cet ingénieur. Cette assistance technique paraît avoir été adéquate au point de vue technique (sauf en ce qui concerne le drainage) et a été très efficace en dépit du minimum de soutien de la part du Gouvernement d'Haïti. (Voir les Sections V et XI des Résultats.)

K. Les écarts principaux par rapport au projet initial sont:
   (1) Le renversement des rôles envisagés pour les ingénieurs du Gouvernement d'Haïti et pour l'ingénieur conseil américain; et
   (2) Le dépassement des standards prévus par le Capital Assistance Paper (CAP) pour la construction de routes "de toutes saisons au moindre coût possible."

L. Selon nous, le projet initial était inapproprié a maintes réalités physiques et institutionnelles d'Haïti. Ceci peut se comprendre dans une certaine mesure étant donné des circonstances politiques et diplomatiques dans lesquelles le CAP a dû être préparé. De-plus, les routes du café sont en train de se construire malgré l'absence d'un document de projet solidement élaboré.

M. Des résultats socio-économiques positifs tels que dégagés d'une enquête sur le terrain qui a eu lieu dans un village de province, semblent pouvoir être attribués au projet routier.

N. Un plan de recherches est fourni aux fins de collecter des données socio-économiques de base nécessaires aux futurs projets routiers.

O. Quant à savoir si le projet des routes doit rester sous les auspices du DARNDR ou doit être transféré aux TPTC, cela dépend de 2 autres questions:
   (1) Est-ce que la construction des routes constitue un projet isolé ou s'agit-il d'un début de programme de travaux?
   (2) Est-ce que l'approche de la main d'oeuvre intensive va être dynamisée par de vrais responsables et par des politiques authentiques qui se consacrent au véritable développement rural d'Haïti?

P. Les implications pour d'autres projets de main d'oeuvre intensive en Haïti se tournent autour de 3 thèmes:
   (1) L'attitude de "laissez-faire" du Gouvernement d'Haïti;
   (2) Une stratégie de développement rural capable d'inspirer le dévouement; et
   (3) L'individu qui convient pour remplir des fonctions de chef/coordinateur.

Q. Dix-huit recommandations sont présentées.

RECOMMANDATIONS

Les suggestions suivantes se trouvent sous 2 rubriques: "Projet spécifique" et "La Main d'Oeuvre en Général."

PROJET SPECIFIQUE:

En ce qui concerne le projet caféier actuel, le Groupe 7 suggère les points suivants:

(1) Fournir aux travailleurs aussitôt que possible des outils adéquats;
Obtenir que les pièces de rechange soient toujours en stock et disponibles selon le besoin et, qu' à la suite de la distribution initiale, toute distribution d'outils supplémentaires s'accomplisse au moyen d'un système de remplacement.
Un artisan local doit réparer tout outil cassé.

(2) La AID doit faire pression pour assurer que les obligations financières se rapportant à la feuille de paie soient effectuées dans un mois (par exemple) après l'echéance de l'obligation.

(3) Une méthode doit être adoptée et mise en application qui tienne compte de la nature du terrain naturel, soit en variant l'épaisseur du revêtement soit en améliorant le terrain naturel pour obtenir un support uniforme pour le revêtement.

(4) On doit accentuer davantage l'importance de la construction de fossés longitudinaux et transversaux dès les premières étapes de la construction. On encourage au moins des fossés longitudinaux rudimentaires au point où la route est élargie à 3 mètres. A l'étape de 5 mètres de large, creuser des fossés presque finis - quoique non-pavés - ceci avant le revêtement.

(5) Expérimenter des matériaux différents pour le revêtement des routes là où les matériaux existent déjà et sont d'acquisition facile et plus économique que le standard actuel. Ceci exigerait des méthodes de calcul de chaussée différentes des methodes actuellement utilisées.

(6) La méthode actuelle de revêtir toute surface macadamisée d'un mélange de chaux, bagasse et de sol doit être examinée de nouveau pour déterminer si elle est supérieure à l'emploi de sols selectionnés.

(7) L'entretien des routes doit être consideré essentiel dès l'achèvement d'une section (d'un Km, par exemple) et cet entretien doit être officiellement délégué à la SEPRRN ou à la communauté. Il est recommandé qu'on considère sérieusement un système d'entretien dans lequel 1 ou 2 individus (de préférence ayant déjà participé à la construction de la route) soient équipés d'outils et reçoivent la résponsabilité de l'entretien routier d'une section spécifique courte de la route, par exemple, 1-3 Kms. Tout entretien plus important exigerait un soutien additionnel de la SEPRRN.

(8) On doit entreprendre une analyse pour déterminer les divers éléments de construction dans le but de considérer logiquement de nouveaux matériaux et méthodes de construction.

(9) La AID doit déterminer rapidement quelle serait sa position éventuelle si le Gouvernement d'Haïti désirait continuer le projet des routes caféières en ce qui concerne l'achèvement des (plus ou moins) 105 Kms actuellement envisagés (y compris l'entretien) et des routes additionnelles totalisant peut-être 155 Kms. (Le Groupe 7 n'a pas examiné cette recommandation là-dessus.) D'un autre côté, le G7 n'a rien appris qui conteste la continuation. Au contraire, en faveur de cette continuation, on peut mentionner l'encouragement qu'elle peut apporter au développement ultérieur de la méthode de la main d'oeuvre intensive.

(10) Dans le cas où le projet actuel de 105 Kms est le début d'un programme plus étendu, la responsabilité des routes doit être transférée aux TPTC.

LA MAIN D'OEUVRE INTENSIVE EN GENERAL

En ce qui concerne la méthode de la main d'oeuvre intensive appliquée à d'autres projets ruraux en Haïti, nous suggérons les points suivants:

(11) Considérer comment structurer l'extension éventuelle du programme des routes du café dans le but de maximiser et de perfectionner les méthodes de travail à haute intensité de main d'oeuvre: par exemple, un projet pilote de rétribution à la tâche plutôt que par jour.

(12) Contrairement à l'expérience des routes du café, fournir à la main d'oeuvre intensive suffisamment d'outils importés, de haute qualité, bien adaptés qui permettront de réaliser la construction plus vite et de manière plus efficace - et même plus important - ceci contribuerait au prestige du projet vis-à-vis des projets hautement mécanisés.

(13) L'expérience acquise par la AID avec les travaux à main d'oeuvre intensive est plus grande que le personnel de la Mission ne le pense. Ces différentes expériences devraient être examinées pour les leçons qui s'en sont dégagées et pour la littérature qu'elles ont engendrée: rapports de Mission, etc.)

(14) Dès lors, mener à bien une recherche sur ce sujet ici en Haïti suppléée par des sources de Washington, D.C.

(15) La AID (le Gouvernement d'Haiti étant mis au courant) devrait systématiser ses idées quant à la stratégie des méthodes de travail intensif. Cette systématisation traiterait des sujets tels que: le rôle optimal du Gouvernement et de l'assistance technique; les critères en matière de design; les directives en matière de coûts; le calendrier de projets spécifiques et les phases des programmes du secteur et ainsi de suite. Ceci s'avérerait très utile du point de vue des archives aussi bien que du point de vue de la préparation de futurs projets.

(16) Des échanges d'informations sur ce sujet doivent être systématiquement entretenus entre la AID et le Gouvernement d'Haïti (actuellement le Départment du Plan et d'autres services tels que les TPTC et le DARNDR). La AID pourrait aussi prendre l'initiative de contacter d'autres agences internationales à ce même sujet.

(17) Dans la Mission, la responsabilité du projet de main d'oeuvre intensive ne doit pas être attribuée à une seule personne (sauf peut-être en tant que collecteur d'informations) puisque le projet intéresse tout un chacun. Au contraire, chacun doit avoir l'occasion de jouer un rôle dans la plannification et les analyses de tout projet éventuel.

(18) La méthode de la main d'oeuvre intensive devrait être retenue comme un élément de la stratégie à la fois au niveau national et au niveau du secteur rural lors des futures déliberations sur les politiques de développement des authorités.

APPENDIX

1. STATEMENT OF WORK
2. LIST OF INTERVIEWS
3. FIELD TRIP INSPECTION REPORTS
4. FIELD SURVEY INTERVIEW GUIDES
5. POCKET PENETROMETER CHART
6. IHPCADE ORGANIZATIONAL CHART
7. TRANSFEREMENT DES FONCTIONS DE VULGARISATION ET DE RECHERCHES DE L'IHPCADE AU DARNDR, October, 1978
8. EVALUATION OF THE HAITI SMALL FARMER COFFEE PROJECT, June, 1977
9. PROGRAMME DES TRAVAUX D'INFRASTRUCTURES ECONOMIQUES ET SOCIALES A FORTE INTENSITE DE MAIN-D'OEUVRE, March, 1976
10. UNDP-GOH PROMOTION ET EXECUTION D'UN PROGRAMME SPECIAL DE TRAVAUX A HAUTE INTENSITE DE MAIN D'OEUVRE
11. ASSESSMENT REPORT ON THE HAITI SMALL COFFEE FARMER PROJECT AND THE BUREAU DE CREDIT AGRICOLE, CUNA November, 1976
12. INTERNAL USAID MEMORANDUM, April, 1979
13. INTERNAL PPC MEMORANDUM, May 1979
14. INTERNAL USAID MEMORANDUM, June 1979
15. COFFEE ROAD EXPENDITURES 1975-1979, September, 1979

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ARTICLE I - STATEMENT OF WORK

A. The contractor will evaluate the actual implementation of the coffee road construction project to date and make recommendation as to what possible improvements, if any, could be made. The contractor will address but not be limited to, the following specific task:

1. Review current construction practices of the coffee roads and prepare relevant recommendations or suggestions for improvement.

2. Review and analyze the cost of the road projects to date and project the ultimate unit cost per km.

3. Review the advantages and or disadvantages of the type construction observed.

4. To what extent has the program followed the design of the project paper? What changes or amendments seem appropriate to insure the Project is carried out as planned?

5. To what extent has the GOH, through IHPCADE, supported the project? Is the present organizational structure adequate to carry out the Project? Is additional technical assistance needed to continue the program and is so what kind?

6. How effective was the Technical Assistance provided to date in administration, training and effective management?

7. What are the implications of the coffee road experience for other potential labor intensive public works projects in Haiti?

8. On balance, should the responsibility for coffee roads remain in the MOA or be shifted to TPTC?

9. What, if any, socio-economic results can be attributed to coffee road construction to-date?

10. Analyze baseline information needs for road program evaluation.

11. Review the merits and appropriateness of the road component in the project design."

LIST OF INTERVIEWS

Date (1979)	Name	Title	Place	Interviewer(s)
6/6	Barnabus Mosley Chuck Pettis Gene George	Proj. Officer, Ag.Feeder Rds/AID US Coffee Road Consultant IDI Engineer/AID	AID/Eng	Fiks, Davidson, Hodson
6/7	Chuck Pettis	US Coffee Road Consultant	AID/Eng	Fiks
8/17	Tibor Nagy Polly Harrison Gene George Scott Smith Louis Morales Muriel Jolivert Gerald Neptune	Chief Engineer/AID Reg. Soc. Science Advisor/AID IDI Engineer/AID Chief, PDC/AID Proj. Officer/Coffee Project/AID General Engineer/AID Chief, Agriculture/AID	Saliba	Fiks
8/17	Allan Furman	Acting Dir./AID	Saliba	Fiks
8/17	Gerald Murray	Anthropologist	G7	Fiks
8/20	Polly Harrison	Reg. Soc. Science Advisor/AID	Saliba	Fiks
8/22	Louis Morales	Proj. Officer/Coffee Project/AID	Saliba	Fiks
8/24	Lucien Duvivier	Sous-Secretaire d'Etat/DARNDR	DARNDR	Fiks, Hodson
8/24	Tibor Nagy	Chief Engineer/AID	AID/Eng	Fiks
8/27	Bertin Dadaille	Dir. General/IHPCADE	IHPCADE	Fiks, Hodson
8/27	Polly Harrison	Reg. Soc. Science Advisor/AID	Saliba	Fiks, Niehoff
8/28	Paulin Justafort	Project Manager/PPC	DARNDR	Fiks, Davidson, Hodson
8/28	Allan Furman	Acting Dir./AID	Saliba	Fiks, Niehoff
8/28	Allan Furman Polly Harrison Glenn Smucker Ira Lowenthal	Acting Dir./AID Reg. Soc. Science Advisor/AID Anthropologist Anthropologist	Saliba	Niehoff

8/29	Tibor Nagy	Chief Engineer/AID	Hotel Splendid	Fiks
8/30	Polly Harrison	Reg. Soc. Science Advisor/AID	Saliba	Niehoff
8/31	Pierre Milord[1/]	Ingénieur/PPC	AID/Eng	Davidson, Hodson, LaBell
9/1	Pierre Brisson	Ag. Program Specialist/AID	G7	Hodson
9/4	Paulin Justafort Raymond Joseph	Project Manager/PPC Asst. Comptable/PPC	DARNDR	Davidson, LaBell
9/4	Jean Brisson	Conseiller au Ministre/DARNDR	DARNDR	Davidson, LaBell
9/5	Paul Fontilus Raymond Joseph	Comptable Administrateur/PPC Asst. Comptable/PPC	DARNDR	Davidson, LaBell
9/5	Garald Neptune	Chief, Agriculture/AID	Saliba	Davidson, Hodson
9/7	Paul Fontilus Raymond Joseph	Comptable Administrateur/PPC Asst. Comptable, PPC	DARNDR	Davidson, LaBell
9/11	Louis Morales	Proj. Officer/Coffee Project/AID	Saliba	Hodson
9/13	Paul Fontilus	Comptable Administrateur/PPC	DARNDR	Hodson
9/13	Scott Smith	Chief, PDC/AID	Saliba	Hodson
9/14	Georges Pierre	Pérédo-Macary Foreman	Pérédo-Macary	Davidson, Hodson
9/17	Paul Duret	Chef, Section Vulgarisation/PPC	DARNDR	Hodson
9/17	Paul Fontilus	Comptable Administrateur/PPC	DARNDR	Hodson
9/19	Paulin Justafort	Project Manager/PPC	DARNDR	Hodson
9/20	Fritz Etienne Gérard Jospitre	Ingénieur en Chef/TPTC Dir., Service Organisation et et Méthodes/TPTC	TPTC	Davidson, LaBell

1/ Lengthy interviews were also held en route to and from road sites. (See Field Trips)

9/20	Paulin Justafort	Project Manager/PPC	DARNDR	Hodson
9/24	Louis Morales	Proj. Officer/Coffee Project/AID	Saliba	Davidson, Hodson
9/25	Tibor Nagy	Chief Engineer/AID	AID/Eng	Hodson
9/25	Jack Sparks	Water Resources Engineer/Harza	AID/Eng	Hodson
9/25	Paulin Justafort	Project Manager/PPC	DARNDR	Hodson
9/25	Larry Holtzmann	Director/CARE	CARE	Hodson
9/25	Larry Holtzmann John MacNamara	Director/CARE North Haiti Rep./CARE	CARE	Hodson
9/26	Louis Morales	Proj. Officer/Coffee Project/AID	Saliba	Hodson
9/26	Wilfrid St. Julien	Directeur, SAT/TPTC	TPTC	Davidson, LaBell
9/26	Louis Morales	Proj. Officer/Coffee Project/AID	Saliba	Hodson
9/26	Gerald Neptune	Chief, Agriculture/AID	Saliba	Hodson
9/26	Bertin Dadaille	Directeur Général/IHPCADE	DARNDR	Hodson
9/27	Lucien Duvivier	Sous-Secrétaire d'Etat/DARNDR	DARNDR	Hodson
9/27	Marcelin Serge	Chef, Service d'Irrigation/DARNDR	DARNDR	Hodson
9/27	Jean Brisson	Conseiller au Ministre/DARNDR	DARNDR	Hodson
9/27	Bertin Dadaille	Directeur Général/IHPCADE	DARNDR	Hodson
9/28	Lucien Brisson Yves F. Guéry	Dir., Section Sol et Forêts/DARNDR Conseiller/DARNDR	DARNDR	Hodson
9/29	Jean Brisson Gérard Lohier	Conseiller au Ministre/DARNDR Chef de Programmation/DARNDR	DARNDR	Hodson
10/1	Bertin Dadaille	Directeur Général/IHPCADE	DARNDR	Hodson

10/5	Pierre Lobstein Raoul Baptiste	International Labor Office/UN Chef, Service des Ressources humaines de la Direction de Programmation économique et sociale du Dept. du Plan	UN/Haiti	Hodson
10/9	Wiener Verdier	Former Asst. Project Coordinator/IHPCADE	IHPCADE	Hodson

FIELD TRIP INSPECTION REPORT: Baptiste-Savanette

E. Davidson - G7

SEPTEMBER 6, 1979

Depart PaP at 6:30 a.m.
Arrive Baptiste at 12;30 p.m. approximately

Location	Odometer Reading	Converted to Kms
Start Baptiste	63.8	0
Cross Stream	65.6	2.88
Picture #1. Typical 3 M	66.6	4.48
Change 5 M	67.7	6.24
Workers of ditching	70.6	10.88
End 5 M & end of excavated section	72.0	13.1
	8.2 miles	13.1 Kms

- No finished ditching accomplished.
- No subgrade prepared for placing stone.
- Difficult in most instances to differentiate between 5-meter and 3-meter completion because of overgrown conditions, avoidance of rock on sides, etc.
- Road usable for 8.2 miles (13.1 Km) at which point workers engaged in making 3-meter wide road. This on steep mountainside (high grass & some shrub) above Savanette. Switchback conditions for appreciable distance at this point and beyond. The 1-meter trace was difficult to identify, but seemed to be known to foreman and his assistant?
- Some grades appeared well in excess of 6% with steep switchbacks. Most of distance traversed, relatively level.

Baptiste-Savanette continued

IMPRESSIONS: More attention to drainage on original 3-m at critical locations would assist, pending the 5-m construction. The 5-m construction should receive more adequate drainage pending the paving work.

NOTE: There seems to be no consideration to varying the base thickness to recognize varying subgrade conditions - rather- continue with the "standard," regardless.

The approach road from Belladère to Baptiste is exceedingly difficult to travel. Average speed ± 5 mph. More difficult than the Baptiste to Savanette road being built.

Two crews (2 x 20) working on the Belladère-Baptiste section (scheduled for Feeder Road program) in order to provide access.

One crew (1x20) on ditching (or is it maintenance to keep it passable?) on the Baptiste to Savanette section. Others were on the forming of the 3-meter section ahead on the Baptiste-Savanette road. Total:100± men.

Forman stated he had adequate tools except needed more sledge hammers.

SEPTEMBER 11, 1979

3

FIELD TRIP INSPECTION REPORT: DONDON to MARMALADE

E. Davidson - G7

The Dondon-Marmalade project starts at a river-crossing at the edge of Dondon. It was possible to ride (4-wheel drive) for the first 2.9 miles (4.6 Kms) on a 3-meter road most of which appeared to follow an established footpath on relatively level ground. Very little excavation had been required.

At the 4.6 Km point, the road enters an earth/rock cut on steep grade which could not be driven because of grade and washing. The 3-meter width extended on to a total of 6 Kms from the beginning through light-to-medium earthwork.

The work ahead indicated heavier earthwork.

Present status:

Survey - 15 Km

1 meter - 15 Km

3-meter - 6 Km

Comments: Most of the work to date has been through exceptionally light excavation. This shows up in the low-labor cost per Km. Present and future work will be through somewhat heavier excavation. Some grades appear too steep and it appears that more attention should have been given to road alignment. During the site visit, there were discussions to this effect. Unfortunately, to correct or modify would require weeks or months.

This indicates a need for higher levels of supervision.

It would appear that greater attention should be given to drainage at the 3-meter width stage. This would permit greater usage pending the return (2 or more years) to the 5-meter width stage. Selective drainage could be done without duplication of work.

Workers had not been paid for the months of June, July, and August. They expressed great dissatisfaction because they had depended on the money to buy seeds, hire workers for their farms, etc.

The foreman claimed he needs twice the tools which are available to him. At the time of inspection, each man had a tool, but no rock work was in progress. The foreman pointed out some large rock conditions he was not equipped to handle. (That was the main reason for the blockage at Km 4.6.)

During the inspection, a discussion arose concerning a relocation to avoid traversing so many garden areas. The Chief Engineer seemed to concur.

A land owner was quite vocal about the taking of her land without reimbursement.

The Dondon Coffee Center was visited. It is located on the Dondon-Grand River Road - not on the road project. Buildings appeared to be 90%± constructed, but abandoned for some time - perhaps months - no doors, windows, etc. - only shells. One building is reported to have been used to store fertilizer. Coffee plant nursuries appeared well kept. Area resembles a ghost town.

FIELD TRIP INSPECTION REPORT: PEREDO-MACARY*

E. Davidson - G7

SEPTEMBER 14, 1979

*actually, Fond Jean-Noel

DEPART Port-au-Prince at 6:30 am

ARRIVED at start of road at 10:00 am (approximately)

OBSERVED:

Location	Odometer	Km
Start of project	52.9	0
Start of Telford base	54.3	2.2
End of Telford base at Fond Jean-Noel	57.9	8.0
Continued Inspection on 3-meter section	59.7	10.9

Advised that remainder of route constructed to 3-meter width except for approximately 2 Kms on easterly end.

From Km 0 to Km 2.2, the road is relatively level and unpaved except that some improvements have been made to assure usage of that section. The Telford base started at Km 2.2 and continues with some gaps to Km 8 at Fond Jean Noel. This segment includes steep grades, curves, switch-backs and much dry wall construction. The Telford base has been placed on approximately 90% of the length. Some lesser percentage has received the smaller broken rock topping (Macadam). According to the Chief Engineer and the foreman, Georges Pierre, the choker material (lime, bagasse, and soil mixture, referred to in the June 1978 Report) has been limited to the small experimental areas. This seems to be at variance with the report

PEREDO-MACARY continued

furnished earlier stating that 10% of the road has been so treated.

A test pit was dug through a completed section. This showed the voids between stone and rock well filled with a plastic mixture which appeared to be mostly local soil although there was visual evidence of foreign material said to be bagasse. The roadway surface at this point was sufficiently smooth and the pavement appeared stable.

At another point closeby which had not been choked with the prepared mix, waste from a slide was being used to stabilize the surface of broken rocks by filling the voids. The question must be raised as to whether a "prepared" coating can be justified. There are indications that the local soils (with some selection) would be adequate. This suggestion is reinforced by observing that some areas, by accumulation of dirt, etc., have obtained satisfactory surfaces without any direct effort to do so. In any event, prepared surfacing has not occurred because there are no vehicles to transport bagasse from their sources.

Laborers were active with no evidence of wasted time. The quality of work was good-to-excellent - especially the construction of dry walls.

Tools appeared inadequate for the work, too small, poor condition, wheelbarrows without wheels converted to 2-man carrying containers, etc. Tools were also said to be inadequate in number.

During this last week labor was paid for the month of May (3 months late). It was said that the June pay would be made within a week.

An inspection was made for about 2 Kms beyond the end of paving (Fond Jean-Noel). This has been constructed to a 3-meter width some 1½ years ago. It is on a slightly rolling plateau. The road is mostly overgrown with grass and weeds with occasional washes, rocks, etc., but

is being used for animal and pedestrian footpath. It contains little in the way of drainage. The 3-meter width is stated to continue to within about 2 Kms of the end which was purposely left unexcavated supposedly to prevent usage by a logging operation which would damage the work while it was under construction.

It is to be noted that status report of May 1979 of completion on this road on a Km basis exceeds that measured by the odometer on this inspection. This may have occurred for a variety of reasons, one being that odometer readings are being compared against percentage of completion estimates. It should be noted that the bulk of construction has occurred up the mountainside where construction time was greatest (excavation, walls, etc.). We are, therefore, inclined to accept the status report as being more representative of the real status of the work.

FIELD TRIP INSPECTION REPORT: LAURENT-BEAUMONT

E. Davidson - G7

SEPTEMBER 18, 1979

Actual visitation of the road was abandoned after arriving within sight of the road when the second flat tire occurred and the jack broke. It was deemed not advisable to continue without spare tires or jack.

Point reached - about 29 Kms north of Cavaillon and near Baradères.

In discussion with Chief Engineer, it was learned that while reports made available to us indicated the entire length of road (35 Kms) had been excavated to the 3-meter width, this was in error. He estimated only slightly over 10 Kms.

This was verified by Muriel Jolivert who visited the site in July and measured 11 Kms.

We are now estimating 12 Kms as per September 1, 1979.

Since no work more extensive than 3-meter widening has taken place, the failure to actually traverse it is not considered to affect the findings, conclusions or recommendations of the Evaluation.

NOTE: Subsequent to above report, we have been advised that laborers were not working at time of planned inspection and have stopped work because of not being paid.

FIELD TRIP INSPECTION REPORT: VIRGILE-L'ASILE

E. Davidson - G7

SEPTEMBER 19, 1979

This road was entered from the paved road at the Virgile end.

Km 0. to Km. 4.5

This section existed as a road? trail? prior to the Coffee Road Program. It has been and is being subjected to truck traffic. Terrain is flat to slightly rolling. Drainage poor.

Entire work force (3 teams) engaged in placing rocks in mud holes and ruts to keep the section passable. Has not been graded or "constructed."

Km. 4.5 to Km. 9.4

The section had been widened with the Telford base placed and macadam(?) placed, some sections now being 1½ - 2 years old with about 0.3 Kms more recently placed.

The older section was overgrown to the extent that the limits of the 5-meter Telford base was generally not evident without close inspection. Generally visible were the two wheel tracks. The majority of the Telford base was intact but irregular; however, significant areas had been rutted and displaced from wheel loads. This usually occurred at locations of poor drainage and poor subgrade conditions. In addition, very little longitudinal drainage existed and side cuts had sloughed on to the base as a general rule. There was no evidence of maintenance.

Net result: Fair to poor riding surface with frequent total failures. Surface overgrown, little or no drainage.

Km. 9.4 to Km. 10.3

Partially excavated 3-meter roadway. No obvious work beyond this point, but the overgrown 1-meter path was probably known to foreman.

VIRGILE-L'ASILE continued

COMMENTS:

This road having been exposed to truck traffic for 1 - 2 years clearly establishes the need for greater recognition of adjusting construction to meet subgrade conditions and proper preparation of subgrade before placing the Telford base. Also, the need to provide good drainage during early construction stages and not delaying until last or later phases. More sloping or "lay-back" of slopes would prevent over-silting of riding surface.

It was also evident where riding surface was intact and reasonably well drained that the voids in the Telford and macadam are "choked" through usage and that the proposed "choking" with the prepared mix is probably superfluous.

Dissatisfaction expressed by labor on delay of wages. Were paid on 14th September for May. Have not been paid for June, July, and August. There is a source(s) (?) who makes loans. Will lend $10 for $15 in return.

Need more tools, especially wheelbarrows and picks.

Field Survey Interview Guides 1/

(4)

Les Notables principaux

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1. En general, quel est le salaire actuel d'un travailleur inexperimente? (par example, pour celui qui coupe ou qui scie le bois) a Fond Jean-Noel?

2. Est-ce qu'il y a un Conseil communautaire? Quelles sont ses fonctions?

3. Sais-tu de quelle facon on a choisi les laboureurs qui travaillent les ro

4. Combien d'argent reçoivent-ils par jour?

5. Le projet routier, comment marche-t-il?

6. Quels sont les plus grands benefices et les plus grands avantages jusqu' à present? Et les plus grands problèmes et inconvenients jusqu' a present?

1/ All interviewing done in Creole

Fermiers/~~Femmes de Marché~~

1. La vie qu'on mène à Fond Jean-Noël depuis 2 ans, est-ce qu'elle devient plus difficile? Plus facile? Ou, est-ce qu'elle reste à peu près la même?
   (Si R = plus difficile ou plus facile, il faut demander pourquoi? Dans quel sens?)

2. Voyages-tu plus souvent qu'il y-a 2 ans? Ou bien, voyages-tu moins souvent qu'il y a 2 ans? Ou, voyages-tu aussi souvent que jamais?

3. En général, où as-tu voyagé il y a 2 ans? _____

   _____

   _____

   Combien de fois par mois? _____

   _____

   _____

   Dans quel but? _____

   _____

   _____

4. En général, ou voyages-tu ces jours-ci? _____

   _____

   _____

   Combien de fois par mois? _____

   _____

   _____

   Dans quel but? _____

   _____

   _____

5. Il y a 2 ans, combien a coûté un voyage de Fond Jean-Noel

à Pérédo? _____ vis-à-vis d'aujourd'hui? _____

à Macary? _____ vis-a-vis d'aujourd'hui? _____

à Jacmel? _____ vis-a-vis d'aujourd'hui? _____

à Port-au-Prince?_____ vis-a-vis d'aujourd'hui? _____

(Si on indique le prix des billets, il faut demander le suivant:-

Le voyage prend combien de temps ces jours-ci?

Le voyage a pris combien de temps il y a 2 ans?)

Les Travailleurs

1. Où est ta maison?

   A quelle distance du chantier est la maison?

   Comment as-tu trouvé ton travail?

2. Est-ce qu' il y avait plus d' hommes qui cherchaient un travail que de travail?

3. Pourquoi est-ce qu'on t' a choisi?

4. Combien est-ce qu'on te paie?

5. As-tu besoin de l'argent pour vivre?

6. As-tu déjà reçu ton salaire pour le mois d'août? juillet? juin?

7. C'était quand la dernière fois que tu as reçu ton salaire? et tu l'as reçu pour quel mois?

8. Est-ce que tu es propriétaire d'un terrain près d'ici?

9. Qu'est-ce que tu cultives comme récoltes ici?

10. Qu'est-ce que tu as cultivé comme récoltes il y a deux ans?

11. Comment te débrouilles-tu sans ton salaire?

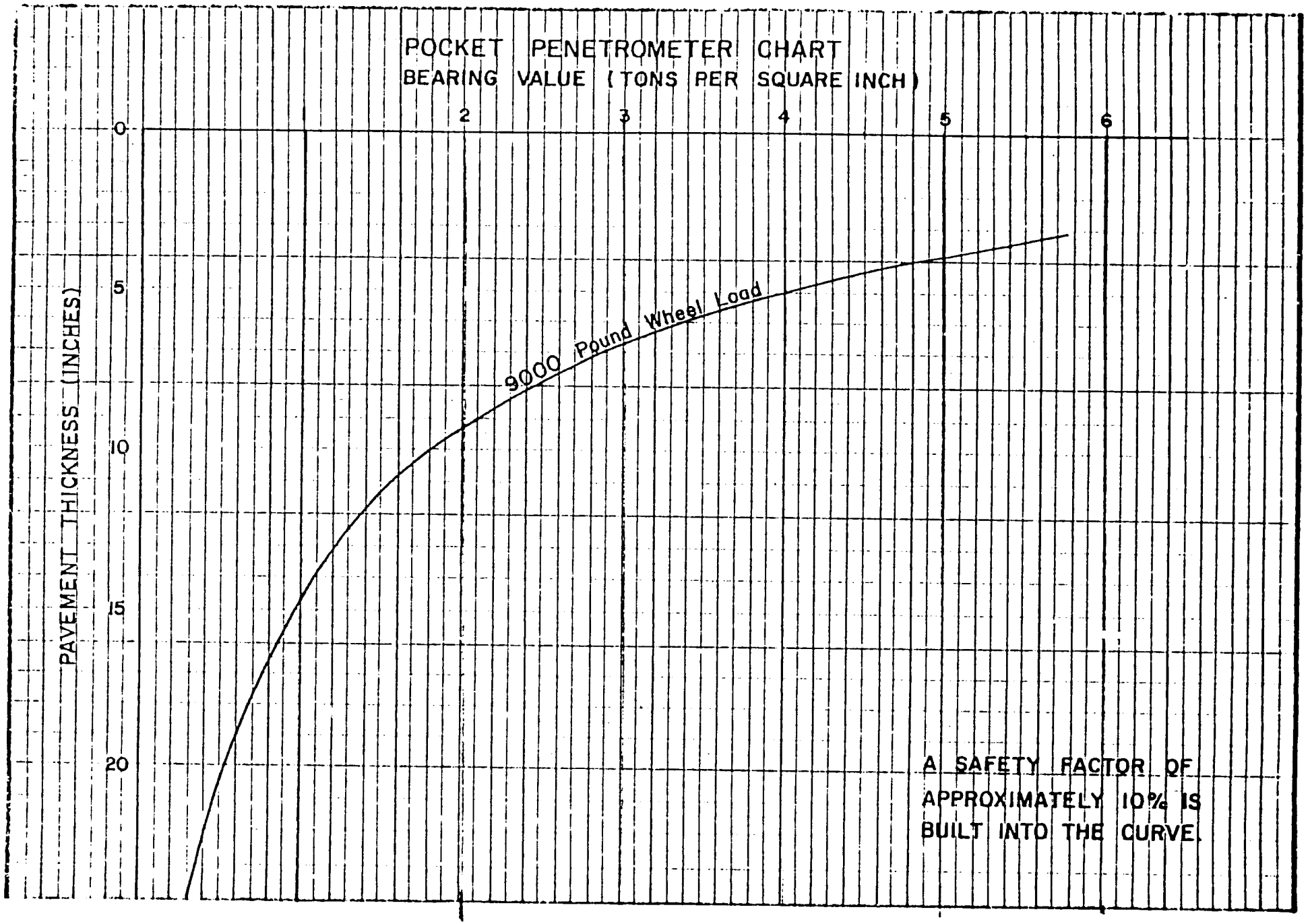
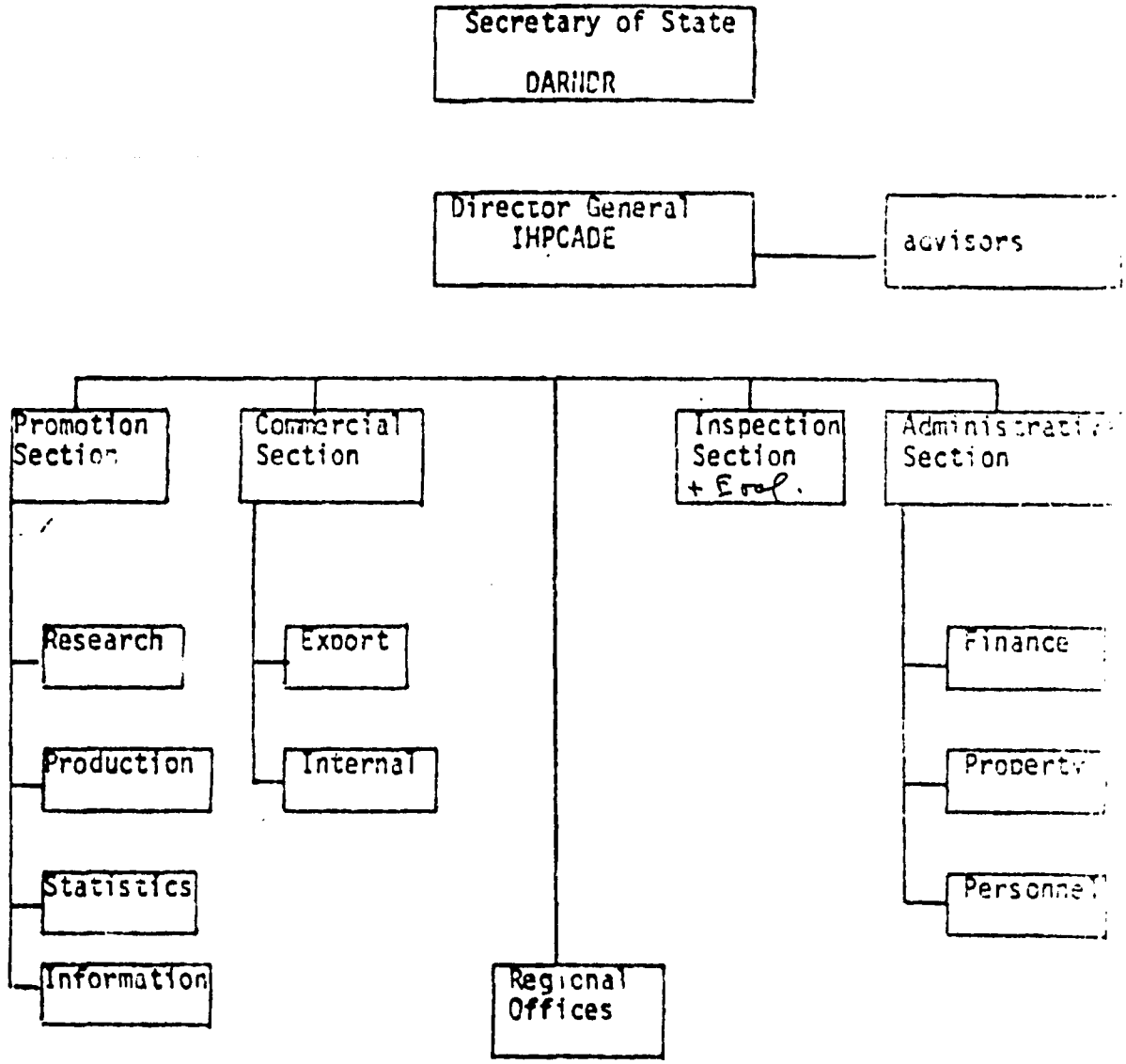

POCKET PENETROMETER CHART
BEARING VALUE (TONS PER SQUARE INCH)
2
3
4
5
6
0
5
10
15
20
PAVEMENT THICKNESS (INCHES)
9000 Pound Wheel Load
A SAFETY FACTOR OF APPROXIMATELY 10% IS BUILT INTO THE CURVE.

Figure 7



IHPCADE ORGANIZATIONAL CHART

(7)

DEPARTEMENT DE L'AGRICULTURE DES RESSOURCES

NATURELLES ET DU DEVELOPPEMENT RURAL

TRANSFEREMENT DES FONCTIONS DE VULGARISATION ET DE RECHERCHES DE L'IHPCADE AU DARNDR

Rapport au Sécrétaire d'Etat du DARNDR
de la Commission d'études.

Port-au-Prince le 20 Octobre 1978

7

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PLAN DE TRAVAIL

Le Plan de Travail suivant a été discuté et adopté par la Commission en vue de mieux appréhender l'aspect réel du problème.

1. Compréhension et Interprétation du mémo du Secrétaire d'Etat.
2. Recherches de documents traitant du PPC.
3. Entrevues atouchant de près le PPC.
4. Analyse de la situation actuelle IHTCADE versus PPC.
5. Processus de transférement.
6. Problèmes posés par cette action.
7. Propositions et Recommandations.

7

Vu que pour faciliter l'exécution des taches spécifiques du PPC, des mesures doivent être prises pour que le personnel du PPC soit intégré techniquement et administrativement au sein du DARNDR.

Vu que la situation bicéphale actuelle du PPC commande un rapide redressement afin d'éviter toute friction ou tout conflit de responsabilité et d'autorité.

Vu que la politique agricole du pays est une et ne peut par conséquent être l'objet de fragmentation dans son application.

Vu que l'harmonie de toutes les activités de vulgarisation et de recherche s'exécutant dans le pays revet un caractère urgent pour le DARNDR.

La commission croît utile de recommander:

1) La révision immédiate de la loi organique de l'IHPCADE afin d'y exclure ses fonctions de production;
2) L'intégration en conséquence, au sein du Service de Production et de vulgarisation du DARNDR de ces fonctions de production;
3) L'adjonction au service de production et de vulgarisation du DARNDR de cette fonction de production à travers une section de production caféière à créer.
4) La localisation du PPC, hiérarchiquement et budgétairement dans le cadre institutionnel du DARNDR.

8

EVALUATION OF THE HAITI SMALL FARMER COFFEE PROJECT

Submitted to

Agency for International Development

Contract No.
AID/otr-C-1383, Work Order No. 28

Development Alternatives, Inc.
1823 Jefferson Place, N.W.
Washington, D.C. 20036

June 30, 1977

PREFACE

This is the final report of a mid-project evaluation of the Haiti Small Farmer Coffee Project. It was requested by the Agricultural Development Office of USAID/Haiti and was contracted through the Office of Development Resources, Latin America Bureau, AID/Washington. Mr. Peter Bittner was the contract monitor.

The research and writing of the report was performed mainly by a two-person team from Development Alternatives, Inc. -- Dr. Craig Olson and Dr. Claes Linden. The team profited greatly, however, from the close cooperation and assistance of several persons. Agronome Bertin Dadaille, the Director General of the Institut Haitien de Promotion du Café et des Denrées d'Exportation (IHPCADE) not only assisted the team personally during the four weeks of research in Haiti, but spent four days in Washington reviewing the draft and collaborating on the recommendations. Agronome Wiener Verdier and Agronome Maurice Phanord of IHPCADE also worked closely with the team while in Haiti. Mr. William Garvey and Mr. Luis Morales of the Agricultural Development Office in USAID/Haiti lent support and guidance to the team while in Haiti. The reflections of Mr. J. Phillip Rourk on the evaluation of the project's Technological Package were much appreciated and have been included as an Annex to this report.

Craig Olson
Washington, D.C.
June 30, 1977

(9)

REPUBLIQUE D'HAITI

contribution haïtienne
au projet interrégional
du bureau international du
travail-bit/int/74/022

PROGRAMME
DES TRAVAUX D'INFRASTRUCTURES ECONOMIQUE ET SOCIALES A FORTE INTENSITE DE MAIN-D'OEUV

Port-au-Prince,

Mars 1976

Approved by JH's Committee - to be started on

(10)

PROGRAMME DES NATIONS UNIES POUR LE DEVELOPPEMENT

Projet du Gouvernement de la République d'Haiti

Titre	:	Promotion et exécution d'un programme spécial de travaux à haute intensité de main d'oeuvre
Numéro	:	HAI/77/009
Fonction primaire	:	Soutien direct (I-O)
Fonction secondaire	:	Renforcement institutionnel
Secteur	:	Main d'oeuvre et emploi (A5)
Sous-secteur	:	Accroissement de l'emploi productif (A510)
Organisme coopérateur du Gouvernement	:	Secrétairerie d'Etat du Plan, avec la collaboration du Département de l'Agriculture, des Ressources Naturelles et du Développement Rural (DARNDR) et du Département des Travaux Publics, Transports et Communications (TPTC)
Organisme chargé de l'exécution	:	Organisation Internationale du Travail (OIT)
Contribution du Gouvernement	:	
Contribution du PNUD	:	164.950 dollars des Etats-Unis
Date de mise en route	:	Juillet 1979

Approuvé:

au nom du Gouvernement	Date
au nom de l'Organisation chargée de l'exécution	Date
au nom du PNUD	Date

(11)

ASSESSMENT REPORT ON THE HAITI SMALL COFFEE FARMER PROJECT AND THE BUREAU DE CREDIT AGRICOLE

Credit Union National Association, Inc.
Global Projects Office
1120 19th Street N.W., Suite 404
Washington, D.C. 20036
(202) 659-4571

November 15, 1976

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[illegible], Chief Petrie

Required funding Fy 1[illegible] required to complete roads under AID Loan 521-T-006 Small Farmer Improvement.

The disposition of the five roads presently under construction is as follows:

I. Lamrat-Beaumont (35 Kms.)

a) Work commenced during February 1977.
b) Actual months worked to date - 21
c) Average number of personnel employed to 1st. March 1979 140 men per month.
d) Work completed to-date.
   1) Surveying and layout of route
   2) One meter wide trail along the whole route.
   3) Three meter wide trail along thirty Kilometers of the route.

Forecast of work to be completed by the end of Fy 78-79

a) Entire length of road will be widened to 3 meters.
b) Seven Kilometers will be widened to 5 meters.

Funds required to complete road during Fy 79-80 - $62,000.00

II. Virgile -L'Asile (17Kms.)

a) Work commenced during February 1977
b) Actual months worked to-date - 22
c) Average number of personnel employed to-date - 50 men per month.
d) Work completed to-date.
   1) Surveying and layout of route
   2) One meter wide trail along the whole route
   3) Three meter wide trail along the whole route
   4) Eight Kilometers of road widened to five meters.
   5) Six Kilometers have received Telford Base.

Forecast of work to be completed by the end of Fy 78-79.

a) Entire length of road will be widened to five meters.
b) Eight Kilometers will have received Telford Base.

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III. [illegible] (21Kms.)

a) Work commenced during January 1977.
b) Actual months worked to-date - 22
c) Average number of personnel employed to 1st. March 1979 - 90 men per month.
d) Work completed to-date.
   1) Survey and layout of route
   2) One meter wide trial along the whole route.
   3) Three meter wide trail along the whole route.
   4) Eleven Kilometers of road widened to five meters.
   5) Four Kilometers have received Telfort base.

Forecast of work to be completed by Fy 78-79.

a) Entire length of road will be widened to five meters.
b) Twelve Kilometers of road will be completely paved.

Funds required to complete road during Fy 79-80 - $25,000.00

IV. Baptiste-Savanette (21Kms.)

a) Work commenced during March 1977.
b) Actual months worked to-date - 22
c) Average number of personnel employed to 1st. March 1979 - 80 men per month.
d) Work completed to-date.
   1) Surveying and layout of route.
   2) One meter trail along the whole route.
   3) Twelve Kilometers of road widened to three meters.

Forecast of work to be completed by Fy 78-79.

a) Entire length of road will be widened to five meters.

Funds required to complete road during Fy 79-80 - $45,000.00

V. Dondon-Marmelade (15Kms.)

a) Work commenced during June 1978.
b) Actual months worked to-date - 2
c) Average number of personnel employed to-date - 60men per month.
d) Work completed to-date.
   1) Surveying and layout of route.
   2) One meter trail along the entire route.
   3) Five kilometers of road widened to three meters.

Forecast of work to be completed by Fy 78-79.

a) Entire length of road will be widened to three meters.
b) Three kilometers of road will be widened to five meters and will have received Telford Base.

Funds required to complete road during Fy 79-80 - $55,000.00

On the 1st. March 1979 the number of personnel at the following road

[illegible]

III. [illegible]

[illegible]

projects was increased. The present number is as follows:

1. Laurant-Beaumont - 240 men
2. Peredo-Macary - 200 men
3. Baptiste-Savanette - 160men

There were no increases on the Virgile-L'Asile and Dondon-Marmelade Roads.

Cost of Labor Personnel, on the projects, up to the end of Fy 78-79 is as follows:

1. Laurant-Beaumont - $120,120
2. Virgil-L'Asile - $39,520
3. Peredo-Macary - $87,880
4. Baptiste-Savanette - $74,880
5. Dondon-Marmelade - $10,920

Total - $333,320.00

Thirty percent of this figure required to cover the cost of administration, supervision and equipment. $99,996.00

Total: $443,316.00

Additional funds requested to complete the five roads during Fy 79-80 $203,000.00

Total cost to complete roads - $646,316.00

110 Kms. of road at $646,316.00 - $5,875.60/Kms.

The cost per kilometer includes the following work.

1. Surveying and staking route
2. Excavation
3. Dry wall construction
4. Rock fills.
5. Telfort sub-base
6. Macadam course
7. Drainage structures
8. Retaining and guard walls.
9. Terracing and reforestration in the vicinity of the roads.

At the completion date Fy 78-79 all of the roads will be completed to the specifications set forth in the Loan documents concerning the Coffee penetration Roads. The specifications call for a three meter wide road.

Maintenance costs for the roads generally will be one man per mile. 110Kms - 69 miles.

One man per mile for 20 days per month - $32.00
" " " one year -$384.00
For 66 miles the yearly cost will be -$26,400.00

Personnel presently employed on the road project includes two Haitian

[illegible]

[illegible] will be available to [illegible] out the work on the penetration road [illegible] and construction.

Additional roads required but not included due to lack of funds are as follows:

1. Thomazeau-Savanette (31Kms.)
2. Poste de Flande-Savanette (24Kms)
3. Crrf. Bonfine-L'Asile (31Kms.)
4. Pilate-Gros Morne (17Kms.)
5. Seguin-Bel Anse (26Kms.)
6. Jacmel-Marbial (26Kms.)
   Total (155Kms.)

Of the above proposed projects 37Kms. are penetration and 117 are existing trails.

The cost per kilometer for penetration roads is $5,875.60 X 37 - $217,397.20

The cost per kilometer utilizing an existing trail or road is $3,500.00 X 117 - $409,500.00

To construct the additional 155Kms. of road the additional funds required would be $626,897.20

(T3)

TO: Director of PPC

FROM: Engineer Pierre Robert Milord
(In charge of local road construction for the Coffee Centers and technical supervision of the Coffee Center construction.)

DATE: May 15, 1979

SUBJECT: Evaluation Report

REF: Circular of April 30, 1979
8) Construction at the Coffee Center Level
a) Routes (Km) 75, 76, 77, 78 completed

Road construction began in 1975 when the Community Councils took charge of this project. But, due to lack of preparation and technical know-how, it resulted in failure: roads were either unsuitable for traffic or rutted and gullied with the first rainfall. A few months after these work sites were started up, there were requests from the agronomists and a decision made by the Director of IHPCADE that Charles Pettis of HW&S, assigned by AID to assist IHPCADE in its engineering projects, should take charge of the construction of these roads. He took charge in May 1976 and took on a technical staff paid by HW&S up till July 1978. Surveys and studies were undertaken scientifically, taking into consideration the topography of the area, its heavy rainfall, any potential to erode attributed to rainfall as well as the necessity to invest the maximum in those areas traversed by the most people - as a means of making it easier on the small coffee farmers whose agricultural efforts would otherwise be harmed.

Although the use of trucks purchased to haul materials would have diminished cost in Kms (the transportation of rocks by hand is extremely costly) - the service has not only repaired entirely by hand, but has managed to build entirely by hand solid and lasting roads in the midst of steep rocks, roads

(placing of stone)

which include stone surfacing and drainage for about ¢37,000 per Km. Compared to similar projects (but not including macadamized roads), Haitian companies - as opposed to foreign ones - maintain costs to be ¢400,000 per Km. It would suffice to add a little bit of cement - 1% proportion - to the top impervious layer of stabilized soil (cement, for example) so as to obtain a road surface comparable to asphalt, longer-lasting, less costly and easy to maintain. As there was no cement available, we did test sections using a mixture of earth, sand, and bagasse ash which, after 2 years, is still in perfect condition in spite of very heavy rainfall at Fond Jean-Noël.

It is not surprising that several national and foreign institutions, interested in implementing our methods in the rural areas of their own countries, visit us and make documentaries of our work sites.

SUMS SPENT ON ROAD WORK, LOCATION AND KMS COMPLETED

FY 1975-1976	Expenditures	Work Completed KMs
1) Belladère-Baptiste (enlargement) Baptiste-Savanette (study) Date the Work Site started up: June 76	¢41,325.00	7 Kms completed
2) Péredo-Fond Jean Noël	¢51,021.00	By the Community Council
3) Bouzy-l'Asile Date the work site started up: July 76	¢ 3,625.00	studies
4) Laurent-Beaumont Date the work site started up: Sept. 76	¢ 578.00	studies
FY 1976-1977		
1) Belladère-Baptiste Baptiste-Savanette	¢261,465.00	19 Kms completion 9 Kms @ 1-m width 5 Kms @ 3-m width
2) Péredo-Fond Jean Noël Date project taken over: Dec. 76	¢149,478.00	11 Kms @ 1-m width 9 Kms @ 3-m width

3) Bouzy-l'Asile	₵ 51,555.50	7 Kms @ 3-m width
4) Laurent-Beaumont	₵128,145.00	17 Kms @ 1-m width

FY 1977-1978

1) Baptiste-Savanette	₵160,907.50	5 Kms @ 1-m width 2 Kms @ 3-m width 9½ Kms @ 3-m width
2) Pérédo-Fond Jean Noël	₵189,155.29	8 Kms @ 5-m width 1 Km @ 3-m width
3) Bouzy-l'Asile	₵ 86,851.50	5 Kms @ 3-m width & 7 Kms 700 completed
4) Laurent-Beaumont	₵218,677.00	7 Kms @ 3-m width

OCTOBER-NOVEMBER-DECEMBER, 1976

1) Baptiste-Savanette	₵ 45,016.00	3 Kms @ 1-m width 7½ Kms @ 3-m width 9½ Kms @ 5-m width
2) Pérédo-Fond Jean Noel	₵ 47,070.00	10 Kms @ 3-m 6 Kms @ 5-m width & 4 Kms paved completed
3) Bouzy-l'Asile	₵ 26,327.00	2 Kms @ 3-m width 10 Kms in stone completed
4) Laurent-Beaumont	₵ 7,152.50	9 Kms @ 1-m width 11 Kms @ 3-m width
5) Dondon-Marmalade		3 Kms @ 3-m width 3 Kms in stone completed
Engineering Staff (July-Dec. 78)	₵ 74,375.00	

N.B.

The procedure used consists of tracing the road; next, a path 1-meter wide so that the trace will not be lost once the stakes are removed; and next, the construction of a roadway 3 meters wide that will allow for the transportation of fertilizer. The roadway is then widened to 5 meters

and paved with a 30-35 cm thick layer of big rocks mixed in with average-sized rocks, then, with gravel .05 thick, rolled and surfaced with a layer of clay mixed in with sand and bagasse ash. The work is completed when the drainage and other protective precautions have been carried out.

e) CONSTRUCTION EXPENDITURES: Baptiste, Thiotte, Dondon, Changieux, Macary, and Fond-des-Nègres.

Macary	$106,274.00	Mobilization funds given June 29, 1976
Fond-des-Nègres	$184,140.00	Contract Date: August 1975
Dondon	$ 99,796.00	Mobilization funds given June 29, 197
& Thiotte	$ 97,644.55	
Baptiste	$128,666.48	May, 1977
Pilate	$128,809.80	August 29, 1977
Changieux	$ 30,000.00	March, 1978

According to the conditions in the contract, these centers should have been turned over to the sponsor 8 months after the mobilization funds were made available.

OPTIONAL FORM NO. 10
JULY 1962 EDITION
GSA FPMR 101-11.6

UNITED STATES GOVERNMENT

Memorandum

File IMPADE Ecuador

(14)

TO : A.D.O.

DATE: June 26, 1979

FROM : Luis A. Morales, Small Farmer Improvement Project Officer (521-073)

SUBJECT: - - - - -Budgetary Difficulties

1. During a conversation sustained this morning between the Small Farmer Improvement Project Manager (Agr. Paulin Justafort) and myself, it appears that the reduction in the PL 480 funds alloted for this exercise ~~(79-80)~~ (78-79) amounting to ¢ 798,000. may, despite all efforts made in the past to avert it, have some adverse effects on the project. My understanding of the financial situation of the Project, after your conversation with M. Jean Brisson on 17 May 1979, was that the proposed reduction would not take effect despite the fact that the letter requesting the said reduction had already been sent to CONADEP.

2. Both Agr. Paulin Justafort and I went to see Mr. Brisson to explain the predicament the project faces. Agr. Justafort informed Mr. Brisson that:

a. CONADEP has officially advised him that it will not release any further funds to the Project unless he submits a new Calendar of Expenses based on the reduced allocation of ¢ 2,807,000.

b. That in view of present commitments he can only take two actions i.e.

Prepare a new Calendar of Expenses, reduce the work on the coffee roads and request that Mr. Brisson fund the Road Payroll up to app. ¢ 200,000.

Mr. Brisson advised that in transmitting the request for budgetary allocation to the CONADEP, the Ministry had committed itself to a reevaluation of needs of all projects after the month of June, and that some adjustments are still possible to alleviate the financial situation faced by the PPC. While this sounds like a very plausible course, I fear that the pace with which these adjustments are made may not produce the desired relief on time.

3. I will continue to keep abreast of this situation and will also keep you informed of the latest developments.

cc: Mr. P. Justafort, PPC
Mr. Jean Brisson, DARNDR
Mr. William Rhoads, AID

5010-110

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

Received Sept 7, 1979

(15)

Port-au-Prince, le 7 Septembre 1979

Coffee Production Expansion Project

EXPLICATIONS SUR LES ROUTES CAFEIERES

1.- PERSONNEL GENIE

Exercice	77-78	.....	GDES. 39.375.00
"	78-79	..... jusqu'à Juillet 31er	" 117.750.00

2.- COUT DE LA SUPERVISION

Exercice	75-76	.....	GDES. 10.000.00
"	76-77	.....	" 78.600.00
"	77-78	.....	" 89.250.00
"	78-79	Jusqu'à Juillet	" 80.900.00

3.- COUT DE LA MAIN D'OEUVRE

Exercice	75-76	.....	GDES. 69.259.75
"	76-77	.....	" 511.128.00
"	77-78	.....	" 543.370.00
"	78-79	.....Jusqu'à Juillet	" 681.160.00

4.- COUT DES MATERIAUX (OUTILS)

Exercice	75-76	.....	GDES. 16.712.50
"	76-77	.....	" 8.467.50
"	77-78	.....	" 16.300.00
"	78-79	.....	" 11.477.50

5.- COUT ADMINISTRATIFS

Exercice	76-77	.....	GDES. 1.168.00
"	77-78	.....	" 1.172.25
"	78-79	.....	" 1.102.00

ROUTE PEREDO POND JN NOEL - MACARY

Exercice 75-76	.....	GDES.	39.946.75
" 76-77	.....	"	142.056.00
" 77-78	.....	"	178.431.50
" 78-79	.....	"	206.675.50
	TOTAL	GDES.	567.109.75

ROUTE BAPTISTE-BELLADERE

Exercice 75-76	.....	GDES.	39.313.00
" 76-77	.....	"	260.173.00
" 77-78	.....	"	158.832.50
" 78-79	.....	"	188.433.00
	TOTAL :	GDES.	646.751.50

ROUTE BOUZI-L'AZILE

Exercice 76-77	.....	GDES.	58.805.00
" 77-78	.....	"	76.629.00
" 78-79	.....	"	86.138.50
	TOTAL :	GDES.	221.572.50

ROUTE BARADERES

Exercice 76-77	.....	GDES.	128.694.00
" 77-78	.....	"	218.727.00
" 78-79	.....	"	230.557.50
	TOTAL :	GDES.	577.978.50

ROUTE DONDON-MARMELADE

Exercice 78-79	.....	GDES.	50.245.50

Port-au-Prince, le 7 Septembre 1979