Final Report

EVALUATION STUDY OF THE CARIBBEAN REGIONAL BASIC HUMAN NEEDS/ EMPLOYMENT PROJECT (538-0030) AND CARIBBEAN EDUCATION DEVELOPMENT, SCHOOL CONSTRUCTION/REHABILITATION SUB-PROJECT (538-0029)

Dr. Alfred Fiks, Team Leader
Mr. John Barton, Engineer
Mr. Mark Pickett, Economist

Contract PDC 1406 I 121062 00

November 1983

THE PRAGMA CORPORATION

I. EXECUTIVE SUMMARY AND RECOMMENDATIONS

Executive summary

1. This evaluation took place in the 48th. month of Project life to determine end-of-project status and provide suggestions for similar projects in the future.

2. Our terms of reference specified that we look at 50 per cent of the sub-projects in the field, describe physical status, employment generated, and value of the improved infrastructure, and in addition review the BHN implementation system and its institutional aspects within the CDB.

3. The most significant achievement of the project is the high degree of works completion. Many of the sub-projects have high visibility and are consonant with stated country needs.

4. The labor content target of 40 per cent of costs was almost reached. Analysis of the labor data suggests that:

a. the type of activity defines the qualitative and quantitative employment impact. Building projects (primarily schools) seem to contain a relatively immutable labor/material ratio that is fairly constant regardless of: method of implementation, location, or size of structure. Although no hard data were available, the skilled/unskilled labor ratio seems to be fairly uniform as well.

Other building projects (roads, drainage and water systems) varied considerably in the level and type of employment generated. These projects seem most responsive to government policy directed towards achieving both employment and public infrastructure creation.

Agriculture projects (re-forestation, soil conservation) are clearly the most labor intensive and are also directed towards the segment of the labor force most likely to suffer from unemployment/underemployment.

b. Government policy towards choice of project and method of implementation can maximize employment objectives. In St. Vincent, for example, the Government made a conscious effort to maximize employment and to pursue some projects for their employment impact. The result is the highest percentage labor use of all the territories analyzed.

5. Ultimately, the achievement of the twin objectives of employment generation and creation/rehabilitation of priority public infrastructure lies firstly in careful selection of subprojects and secondly in the governments' sincere dedication to realizing project objectives simultaneously alongside with the country's individual development priorities.

6. The overwhelming majority of sub-projects seemed well selected. Three roads and one drainage activity were questionable.

7. Contracting was used for: sub-project identification, engineering consulting, construction, and a school maintenance manual and training seminar.

8. With some notable exceptions, the reporting function on the whole was poorly planned and imperfectly carried out.

9. There is a slight tendency for lower priced sub-projects to have a higher percentage labor content while the 1981 sub-project identification exercise tends to favor higher priced activities over lower priced ones.

10. On the whole, BHN/E was a very worthwhile and well-received project.

11. Suggestions for fine-tuning the system in any follow-on project are presented below.

Recommendations

To facilitate and improve implementation of similar projects in the future we suggest the following:

1. Regarding sub-project identification, appropriate field research should be carried out to gauge current needs and priorities.

2. Government priority should be based on amount of preparation that has been invested in the various nominated activities by the host governments and be given heavier weight than other selection criteria.

3. The identification exercise should use procedures to maximize validity and reliability of ratings and minimize the possibility of conflict of interest.

4. Sub-projects selected for future projects should correspond to the needs expressd in current national development plans as one essential element.

5. Cost estimates made at the time of sub-project identification should include allowances for increases in construction costs. Estimates should be carefully examined to make certain that when construction starts there is enough money to complete the project as designed. Cost control should be included in any consulting engineer's terms of reference.

6. Regarding the approval phase, we suggest informing participating governments about the process used and alerting them in advance of all grant conditions.

7. Concerning contracting aspects, we recommend wider dissemination of procurement needs by the bank, e.g. consider at least two suppliers for all procurements.

8. "On island" consultant engineers should preferably be used.

9. Wherever possible, standard plans should be used to save time and costs. If plans are standardized, consideration might also be given to the use of one contractor for construction of all projects of the same plan. This would save money by bulk ordering of materials and the use of standardized form work.

10. Consideration should be given to having the professional staff at the CDB in connection with professional

staff at the Ministries do any necessary design work of sub-projects. If this is not possible then fewer professionals and more technicians and administrators would be in order, including a financial person.

11. Regarding monitoring, we would caution that with three different organizations involved (consultants, CDB, and USAID) it needs to be made perfectly clear to the Country Supervisors and the MCW's, who has the authority to order changes in field procedures, and who does not.

12. The reporting sub-system needs overhauling: modify and standardize forms from the beginning with required submission, and due dates. Assure that the information collected is concise and relevant to project performance indicators.

13. Require CDB to report quarterly to coincide with Mission schedule.

14. If a new project has school construction in it, consider implementation of the '79 Dominica maintenance plan.

15. Use available public information funds to shape community attitudes regarding school maintenance.

16. The dynamism, authority, local bureaucratic know-how, and ability to harness existing political will of the Country Supervisor appear to be quite important to project success. We therefore suggest recently retired Permanent Secretaries in that position, whenever possible.

17. We suggest that the CDB institutionalization objective be dropped.

18. We suggest that fullest use be made of Bank staff from the earliest design phase (ie the PID). Their perceptions and ideas should be given careful consideration inasmuch as some would tend to compliment USAID's and thus augment the viability of a new project.

CONTENTS

II. INTRODUCTION

A. This, the second and final evaluation of the Caribbean Regional Basic Human Needs Employment Sector Project (BHN/E) and portions of the Caribbean Educational Development Project (CED) (Project Nos. 538-0030 and 538-0029, respectively) took place in the 48th month of project life[1] from the date of the Project Agreement(s) with the Caribbean Development Bank (CDB).

B. As of this writing, the Project Assistance Completion Date (PACD) for both BHN and CED was October 1983,[2] two months hence. Thus, 96 percent of project life had elapsed.

C. The setting for this project[3] was eight small island nations/territories in the Eastern Caribbean: Antigua, Dominica, Grenada, Montserrat, St. Kitts/Nevis, St. Lucia, St. Vincent, and Barbados (plus Belize).[4]

For the reader who may not be acquainted with the area, the combined population of all these countries is almost one million people.

---

1 Actually, the 50th month for CED.

2 The original PACDs were 30 September 1982 and 31 December 1982, respectively.

3 We will use the singular throughout this report to refer to both BHN/E and CED since they were complementary and managed as one unit.

4 This evaluation was to exclude project activities in Barbados, Grenada, and Belize.

D. The objective of the project was to provide a fast-track employment generation system on worthwhile public infrastructure subprojects, emphasizing schools, to combat rapidly deteriorating economies in these countries. One hundred and two subprojects comprised the project, of which we were to evaluate 78, and visit 39.[1]

E. The CDB was the grantee/borrower and implementing agency, working with the various Ministries of Communications and Works (MCWs), and consulting firms. Some of the school construction works were carried out by contract, others by MCW force account.[2]

F. The initial funding, incremental in nature, totaled (for BHN/E) $10.5 million,[3] of which $8.5 million was a grant and $2 million, a loan. Included in the grant amount was $951,000, or about ten percent in program support funding to CDB. As of 30 June 1983, 100 percent of the authorized BHN/E funding was reported spent (accrual basis). The facts were the same for the CDB portion of the CED Project.

---

1 The 78 in the documents actually turned out to be 72 due to amalgamation; of these we visited 53, or 74%.

2 That is, where MCW hires labor direct, purchases the materials, and performs the construction.

3 All amounts given in this report are U.S. dollars, unless specifically stated otherwise.

III. METHOD

There were three stages necessary to carry out the directives of this Work Order: (1) sk definition, (2) data collection (interviews and field trips), (3) analysis, synthesis and write-up.

Task Definition

1. The first few days of the study were devoted to planning and preparing of formats and schemas for systematically gathering and classisfying the information that would be required to address the 12 topics contained in our Terms of Reference, as amended (see Appendix A). We also had meetings with the Acting Mission Director, Project Officer, and CDB staff.

2. Each member of the group took responsibility for specific sections of the evaluation, in accordance with his particular discipline. An evaluation plan and travel itinerary were developed.

Data Collection

1. Information was gathered by all means available: file search and document analysis, personal interviews, and physical observation.

2. The entire team travelled to St. Vincent to fine tune our procedure. Then the Team Leader returned to Barbados. Our Engineer and Economist travelled on to the other five territories.

3. The sampling plan was as follows: There were 102 subprojects or activities in all (including BHN/E and CED School Maintenance and Rehab). Of these, 24 were in Belize and Grenada and thus not in the evaluation. Of the remaining 78 subprojects we selected 50% for site visits according to the following non-random scheme.

a. In each country, select at least one subproject in each category found there.

b. If there are two or more to chose from, select the one with the higher total cost.

4. Documents from the files of the CDB, the MCWS, and USAID, made available to us were examined.

5. Semi-structured interviews, mostly private, were conducted, with 60 persons (see Appendix B). Interviews ranged from a few minutes to several hours in duration.

6. All persons interviewed were advised that we would not affirm or contest any statement, maintaining a neutral stance at all times. Any controversial or contradictory statements that developed were double checked for accuracy later.

7. The interviewee was encouraged to speak freely without fear of attribution or social pressure.

8. We did not use tape recorders, and each interviewee was assured that his views were received in confidence and that he would not be quoted directly. In general, interviewees responded candidly and seemed to give free expression to their opinions.

9. Quantitative and factual data were sought to validate information obtained and minimize subjectivity. Leading questions were avoided.

10. Field trips were made as shown on the following page.

Analysis and Synthesis

1. Hard data, impressions, tentative conclusions and potential recommendations were carefully discussed and analysed within the Team, to get a concensus and thus increase the reliability of our reported findings and suggestions.

2. To the extent possible, we separated our findings from our comments and interpretations.

Write up and Submission

1. Appropriate members of the Team took primary responsibility for drafting particular sections.

2. The Team Leader then edited, amplified and or commented as necessary.

3. The Draft Report was typed at Pragma Corporation, Va.

4. It was air shipped to USAID/Barbados on September 21, 1983.

5. A Mission Briefing had been held on September 14, 1983 to discuss the major findings and recommendations, before the Team left Barbados.

6. Consultation with LAC/DR/CAR was held on September 21, 1983.

PRAGMA TEAM

BHN STUDY

Travel Plans

Barton & Pickett	Fiks
19 August Friday Barbados to St. Vincent LIAT 323 leave 8.30 AM Arrive 9.15	Ditto
24 August Wednesday St. Vincent to St. Lucia (Vijie) LIAT 104 leave 9:10 AM Arrive 10:00 (Vijie Airport)	LIAT 310 leave 3:50 Arrive 4:10 Barbados
29 August Monday St. Lucia to Dominica (Kingfield) LIAT 338 leave 4.30 PM Arrive Martinique 4.55 to LIAT 348 leave Martinique 5.10 Arrive Dominica 5.40 PM	
3 September Saturday Dominica to Montserrat LIAT 342 leave 6.50 AM Arrive Antigua 8.00 to LIAT 592 leave Antigua 11.55 Arrive 12.15	
6 September Tuesday Montserrat to St. Kitts LIAT 591 leave 7:40 Arrive Antigua 8:00 to LIAT 550 leave Antigua 11:30 Arrive St. Kitts 12.00	
8 September Thursday St. Kitts to Antigua LIAT 543 leave 10:15 AM Arrive 10:45	
11 September Sunday Antigua to Barbados BWIA 431 leave 4:20 PM Arrive 5:15	

IV. EVALUATION RESULTS

This section is organized first by countries and then we deal with the generic questions in our Terms of Reference. Wherever appropriate, we also distinguish between findings and our own commentary.

A. Country-Specific Analyses

We present first an overview of the findings for the six territories.

1. Overview

As shown in the last column of Table 1:

a. Of the 53 activities visited, all but 3 or 4 were complete (i.e. 92%).

b. Overall, the maintenance on the visited sites appeared to be fair to good with some variability between as well as within countries.

c. Utilization, based on our data, appeared to be good in 79% of the sub-projects.

TABLE 1.

BHN/E PROJECT SUMMARY FINDINGS September 1983	St. Vincent	St. Lucia	Dominica	Montserrat	St. Kitts Nevis	Antigua	Totals
Number of sub-projects visited	7	9	13	7	8	9	53
Status of sub-projects visited	essentially complete	partially complete	complete	complete	complete	2 incomplete	
Maintenance of sub-projects visited	good to poor	good	good	fair	fair	good	
Utilization of sub-projects visited	good in 5	good in 7	good in 12	good in 6	good in 6	good in 6	good in 42
TOTAL COSTS							
Allocation (millions)	1.64	1.66	2.25	0.41	1.41	1.40	8.77
Expenditure (millions)	1.79	1.81	2.36	0.41	1.37	1.57	9.31
EMPLOYMENT GENERATION							
Number of people hired	2,320	372	382	128	852	272	4,326
Number of man-days	221,700	46,500	73,600	18,939	90,992	56,628	508,359
Total wages	$837,000	$607,560	$672,730	$153,450	$495,640	$532,640	$3,299,020
Average term of employment	96 days	125 days	193 days	148 days	107 days	208 days	118 days
Average total earnings per worker	$360	$1,630	$1,760	$1,200	$582	$1,960	$763
Average labor content as % of total cost	47 %	34%	28%	38%	36%	34%	35%
Range	33-88%	20-45%	6-90%	18-58%	14-57%	18-47%	28-47%
Continued employment	indeterminable---------->						
Skills learned	incidental---------->						
Approximate estimated value (millions)	3.1	5.1	5.9	1.5	4.5	3.9	24
Ratio of estimated value of total cost	1.7	2.8	2.5	3.7	3.3	2.5	2.6
Demand for additional sub-projects	yes	yes	yes	yes	yes	yes	yes

Notes:
1. Figures do not include school maintenance sub-projects.
2. All fund data shown in U.S. dollars.
3. Montserrat data heavily based on estimation.

d. Reported expenditures exceeded the project allocations by $.54 million, or 6%. That is, the host governments added some of their own funds.

e. For employment generation, 4326 persons were reportedly hired for an average of 118 days yielding about 500,000 person-days of gainful work. This represented 35% of total sub-project costs.

f. According to the information furnished us, $3.3 million was paid out in labor costs, giving the average worker $763 for the basic human needs of his family.

g. No quantitative information on continued employment of the workers involved was available.

h. Post-facto anecdotal reports of skills acquired on the job by workers would indicate that any such learning was incidental at best.

i. The value of the improved infrastructure was estimated to be $24 million, or 2.6 times project cost.

j. Interest in additional BHN activity was noted in all territories studied.

Table 2 indicates that:

k. The person-months of employment generated slightly exceeded planned targets.

l. 48% more schools were improved than was planned, although this is obfuscated by inclusion of the CED component in BHN.

m. The 7 EOPS targets were: mostly met in three cases, showed a shortfall in four others, and was exceeded in one case (i.e. number of primary school pupils attending improved schools).

Table 3 reports that:

n. Buildings (including most prominently schools) constituted the largest category, with water systems second.

Table 4 shows that:

o. About half of the school construction was new.

p. Dominica had one third of all school construction sub-projects.

TABLE 2.

LOG-FRAME TARGETS AND ACHIEVEMENTS

LEVEL	INDICATOR + TARGET	ACHIEVEMENT	DIFFERENCE
Output	29,000 man months of employment	29,050 24,208	+0.2% -17%
	23 new or rehabilitated schools	34 30	+48% +30%
	40 sub-projects	91	+128%
Purpose	US$ 4 million earned income for workers	3.9 US$ 3.3. million	-2% -18%
	Labor content to be 40% of sub-project costs	35% 35%	-12% -12%
	Institutionalization of BHN financing system within CDB	Partial	Substantial shortfall
	US$ 30 million of public infrastructure to be improved	28.8 US$ 24 million	-4% -20%
	10,000 primary school pupils attending improved schools	12,662 11,172	+27% +12%
	All MCW's will have learned to plan and execute labor-intensive infrastructure projects	Partial	Shortfall
	Regional financing fund in operation	Partial	Substantial shortfall

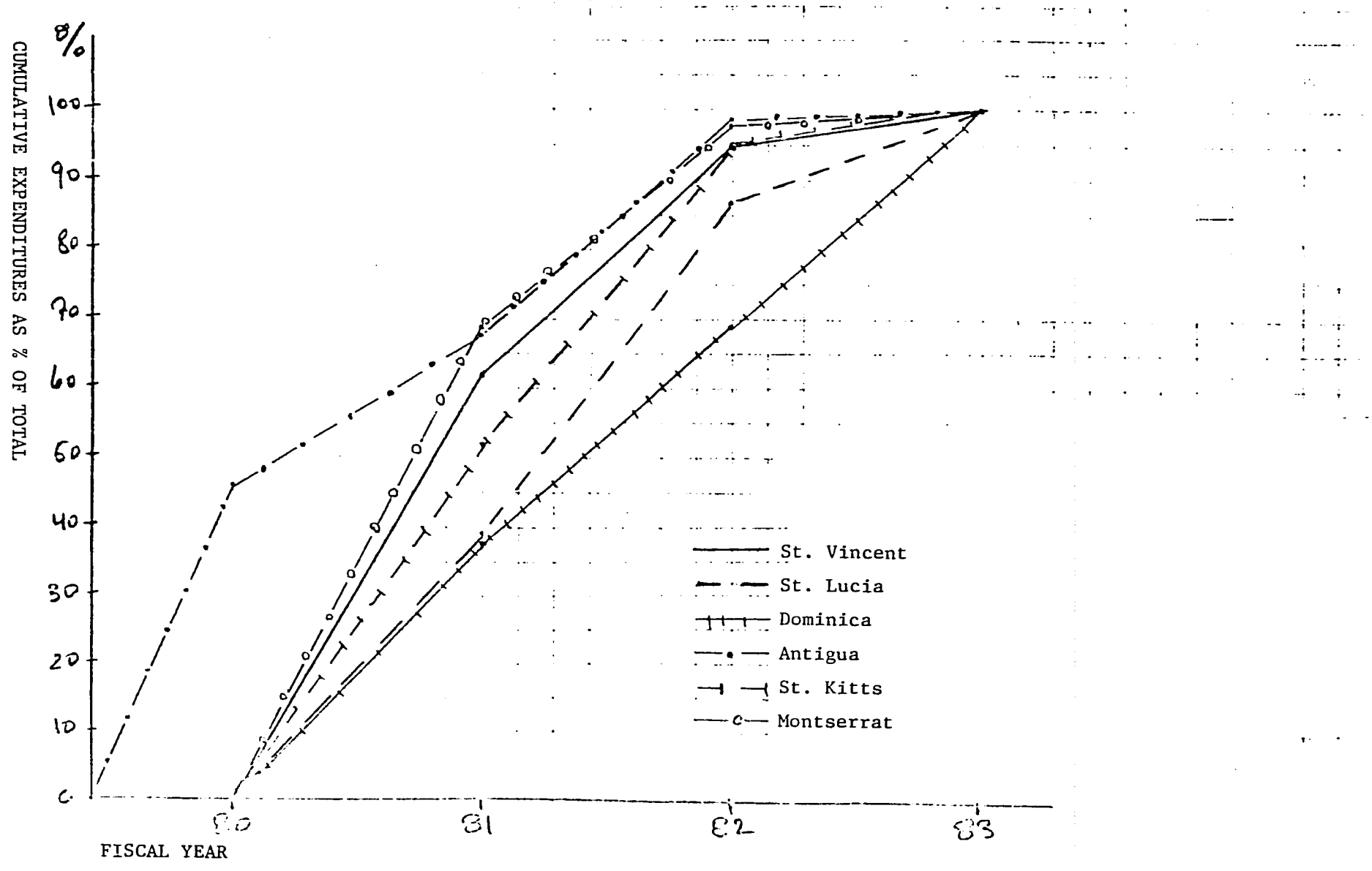
Note: The bottom numbers in the Achievement column are based on actual observed or reported data; the top numbers have been adjusted to reflect allocations for Grenada and School Maintenance.

TABLE 3.

BHN AND CED PROJECT: NUMBER OF SUB-PROJECTS	ST. VINCENT	ST. LUCIA	DOMINICA	MONTSERRAT	ST. KITTS-NEVIS	ANTIGUA	TOTAL	
Buildings	6	7	14	3	4	6	40	
Roads	3	1	0	1	0	0	5	
Reafforestation	1	0	0	1	0	0	2	
Soil Conservation	1	0	0	0	3	0	4	
Drainage	0	2	0	0	0	2	4	
Water Systems	0	6	6	1	4	0	17	
Total Sub-projects	11	16	20	6	11	8	72	
Sub-projects visited	7	9	13	7	8	9	53	
School Maintenance	1	1	1	1	1	1	6	BHN + CED considered as one project

FIGURE 1.

EXPENDITURE RATE BY COUNTRY



a. About 11,000 pupils benefitted from this.

Figure 1 attempts to show,

r. The degree of success in the various territories of quick implementation, a major objective of BHN/E. Clearly, Antigua, Montserrat, and St. Vincent seem to have organized activities faster than the other islands. It does not follow, however, that Antigua, the only one to show expenditures in FY80, finished sooner than the others. Table 1 showed that Antigua still had two sub-projects incomplete at the time of this evaluation.

Figure 2 indicates that:

s. St. Lucia paid the highest average daily wage ($13.07) and St. Vincent the lowest ($3.78).

Figure 2.
Average Daily Wage by Country

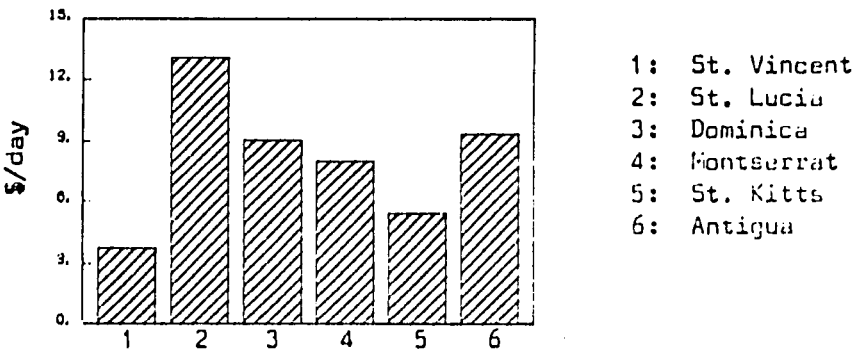


TABLE 4.

NUMBER OF SCHOOL CONSTRUCTION AND REHABILITATION SUB-PROJECTS NUMBER OF STUDENTS	ST. VINCENT	ST. LUCIA	DOMINICA	MONTSERRAT	ST. KITTS-NEVIS	ANTIGUA	TOTAL
New Schools	3	2	7	0	1	1	14
Rehabilitated Schools	0	1	2	1	1	0	5
Rehabilitated with extensions	1	2	1	2	2	2	10
Extensions only	0	1	0	0	0	0	1
Totals by country	4	6	10	3	4	3	30
Number of students	1,365	2,132	4,042	241	1,539	1,853	11,172

2. St. Vincent

FINDINGS

a. Physical status, description, and maintenance

(1) Our visits established the following:

Sub-project Activity	Status
Rehabilitation & Extension of Barrouallie Primary School	Complete
Construction of New Primary School at Brighton	All but complete
Completion/Rehabilitation and Extension of Mesopotamia Health Center	Complete
Coastal Road Protection Belle Vue/Colonaire	Complete
Improvement of Airport Road Canouan Island	Complete
Road Improvement on Union Island	Complete
Reafforestation at Three Rivers	Complete
School Maintenance	Complete

(2) The physical description of each site visited and its apparent maintenance is given below.

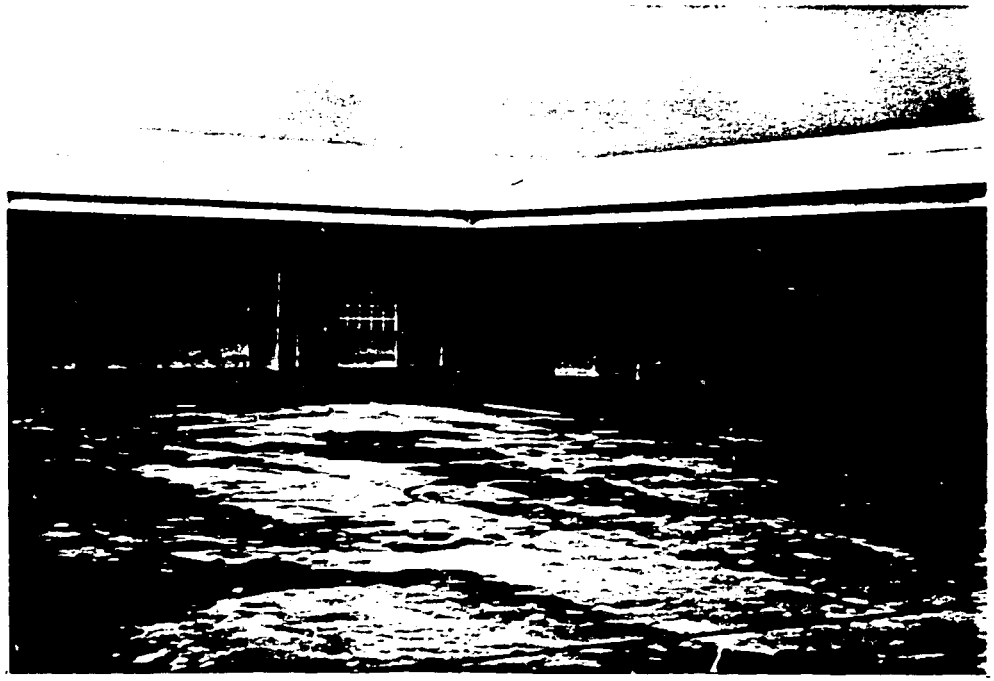
(a) Barrouallie Primary School is a two story structure consisting of ten classrooms, a library, staff room, office, and restroom facilities for boys

and girls. Part of the old school was moved to a site behind the new school and is used as a crafts room. The site is on a hillside and requires extra work in excavations and foundations. The area in front of the school, intended as a playground is very rocky and will need fill material before it will be safe for students. The school building appears to be well constructed and well maintained.

(b) Brighton Primary School is a single story built around a central paved courtyard. (See photo) The facilites include classrooms, wood shop, home economics room, staff room, head teachers office, store room, future library and restrooms.

A small amount of painting remains to be done to complete the project. The flush valves on the toilets selected for the project require a high pressure water supply to work properly. The one inch water line supplying the school cannot supply the required pressure. An attempt has been made by the maintenance staff of the Ministry of Works to solve this problem. They installed a 500 gallon elevated steel water tank and increased the size of the pipes supplying the toilets. We believe that a better solution could have been found.

Mesopotamia Health Center (St. Vincent)



Brighton Primary School (St. Vincent)

Canouan Island Airport Road (Grenadines)

Stubbs Primary School (St. Vincent) old and new

The building shown to us as the old school will not be torn down as originally proposed, but will be rehabilitated by a local church group and used as a day care center.

Despite the employment of a watchman, there was a lot of vandalism apparent at the school. Other than work done trying to solve the problem with the toilets, it appeared that very little maintenance had been done on this school. Reportedly, local preferences for location of the new building were not given full weight, undoubtly reflecting itself in subsequent negative community attitudes towards the school.

(c) The Mesopotamia Health Center is an L-shaped building consisting of two floors. The short leg of the "L" is the housing for the nursing staff--the bottom floor for the head nurse and the upper floor for the other nurses. The remainder of the building houses the maternity ward on the upper floor and kitchen, pantry, sanitary inspector's room, laundry, dispensary, clinic and waiting area downstairs. The building appears to be well built and so far well maintained. (See photo) The most noticeable flaw was the lack of any screening, despite the fact that the building is very near the local slaughterhouse--a likely attraction for insects.

(d) The Coastal Road Protection between the towns of Belle Vue and Colonaire consisted of a 1200-foot section of rock fill at the base of a cliff area which was being undercut by the sea and approximately 75 feet of retaining walls where the collapse of the cliff would have undermined the road. The retaining walls were well built although a lack of drainage control was eroding away the soil on the ends of the wall. The sea, aided by heavy rain water runoff, had begun to destroy four small sections of the rock fill area. Further damage is likely if these are not repaired soon.

(e) The Airport Road Sub-project on Canouan Island is said to run from the edge of the airstrip to the saddle between two hills and continues up the ridge of the eastern hill. (See photo) The sub-project was conceived by the MCW to contribute to tourism development at one time. The road is slightly less than one mile in length and consists of two narrow concrete strips constructed along the entire length. This type of road construction offers lower initial cost of construction (than full-width concrete). Passing of oncoming cars, particularly in the rainy seasons, becomes a problem with this type of road. However, with only one car on the island[1], it is not a problem to consider. The

[1] At the time of this evaluation.

people of St. Vincent involved with road maintenance complain that the dual strip road requires more maintenance.

(f) The Road Improvement Project on Union Island is also a dual strip road, although in this case the road existed previously as a single-lane dirt road. The road along the west coast which connects Clifton and Ashton and the work completed under this project is slightly over one mile in length. Work was started on both ends of the road and continued until the money ran out. The resulting unfinished strip of road is where improvement is perhaps most needed as this is an area of land often flooded at hightide. Connection of the improved road to an existing branch road would have completed a shorter loop from Clifton to Aston and thus make one complete connection instead of two incomplete roads.

(g) The Reafforestation Scheme at Three Rivers was part of a larger scheme which included Vermont and Cumberland. At Three Rivers the forestry services have taken approximately ten small "plantations" which local farmers had leased from the government and replanted these areas with trees. The scheme appeared to be working to prevent soil erosion and the trees planted

seemed healthy. Signs of soil erosion were evident at some of the plantations we passed on the way to the site.

A maintenance program is being carried out, with small crews cutting out vines to prevent them from choking the trees.

(h) The School Maintenance Program involved work on around 26 different schools. The major effort in the program appears to have been in repairs to toilet facilities and in replacing metal grill-covered window openings with decorative concrete block work.

COMMENTARY

One possible question to the scheme is the advisibility of planting individual areas with only one species of tree. It would seem that if a disease were to strike the area, it would kill all the trees and require one to start all over, whereas a variety of trees would prevent total destruction and provide some protection to the soil until dead trees could be replaced.

b. Utilization

Barrouallie Primary School	436 students
Brighton Primary School	384* students
Clare Valley Primary School	280* students
Stubbs Primary School	265* students
Mesopotamia Health Center	serves 3000 out-patients 15,000 in-patients
Georgetown Community Center	5000* people
Coastal Road Protection	30,000* people
Airport Road on Canouan Island	600 people, 1 car
Road on Union Island	3000 people, 35 cars
Reafforestation @ Owia and Fancy	875 acres/300 farms
School Maintenance	26 schools

---

* estimated numbers

c. Employment generation

(1) The type and scope of employment generation on BHN/CED projects was affected by several factors:

(a) The type of sub-project

(b) The policy of the St. Vincent Government to implement sub-projects by force account

(c) The policy of the St. Vincent Government to rotate bi-weekly the employment of unskilled labor among all applicants.

(2) The building projects have a larger material and equipment component and consequently a smaller direct employment impact per dollar than either the road or agriculture sub-projects. (See Table 5) In addition, the relatively sophisticated building techniques require a larger percentage of skilled workers making the impact on the unemployed population, if one assumes that skilled workers constitute a small percentage of the unemployed, less than the figures might suggest.

(3) Labor intensive techniques were used on the road projects. At Belle Vue/Colonaire unskilled labor was used for the excavation, placement and packing of the embankment rocks. On Canouan Island there was a significant amount of excavation and on both Canouan and Union Islands aggregate was obtained

TABLE 5.

ST. VINCENT EMPLOYMENT GENERATION	site visit	total expenditure	total labor costs	% labor	total man-days	number employed
Barrouallie Primary School	*	771,360	286,174	37	29,015	307
Brighton Primary School	*	831,559	289,063	35	26,790	284
Clare Valley Primary School		540,287	190,631	35	19,328	248
Stubbs Primary School		475,049	160,291	34	12,022	122
Mesopotamia Health Center	*	300,000	100,433	33	10,182	93
Georgetown Community Center		285,917	96,322	34	7,224	74
Subtotal		3,204,172	1,122,914	35	104,561	1,128
Coastal Road Protection-Belle Vue/ Colonaire	*	551,962	329,916	60	35,054	193
Airport Road-Canouan Island	*	305,795	233,150	76	24,722	167
Road on Union Island	*	333,368	198,133	59	19,281	131
Subtotal		1,191,125	761,199	64	79,057	491
Reafforestation-Three Rivers, Vermont, Cumberland	*	244,725	215,810	88	21,001	191
Soil Conservation-Owia, Fancy		194,535	160,067	82	17,007	509
Grand Total	7	4,834,557	2,259,990	47	221,626	2,319

locally through labor intensive techniques. It was reported that the Canouan Road project utilized a full complement of heavy equipment although the labor figures obtained would suggest otherwise. Nonetheless, it is clear that a significant number of unskilled workers was required. Given the clearly extensive use of unskilled labor, it can safely be said the impact on the unemployed was significant, albeit temporary.

(4) Both the reafforestation and soil conservation sub-projects used few materials and little equipment. The works required the use of almost exclusively unskilled labor recruited from the isolated agricultural regions where the projects were located. Given the high levels of unemployment in these regions it can be assumed the impact on the unemployed was great.

(5) The policy of the St. Vincent Government to execute the sub-projects by force account and to rotate the workers constituted a conscious effort to hold down costs and to spread the employment benefits of the project to as many people as possible. Laborers, both skilled and unskilled were recruited (with the exception of the Canouan and Union Islands road projects) almost exclusively on site. The work

necessitated a core of skilled workers to be retained on the building sites for the life of a sub-project, however seldom were the same workers employed on another sub-project. As a result, the employment impact was widespread but temporary and/or intermittent for the majority of those working on BHN/CED sub-projects.

(6) Labor intensivity in building projects was not significantly greater than building projects elsewhere, whether done by force account or contract. Apparently the inherent labor/materials ratio in construction projects of this type is relatively immutable. However, the inclusion of highly labor intensive soil conservation and reafforestation projects tempered this and extended a larger overall percentage of expenditure to employment generation in St. Vincent.

(7) No complete data was available on the breakdown of employment by sex or age but reported estimates indicate that women were employed as water carriers and for other menial tasks and that youths constituted a portion of the unskilled labor used. It was reported on Union Island that of the unskilled workers hired for the road project 25% were women and 25% were youths. Observations of on-going projects on the island indicate that women and youths are commonly used on public works projects.

(8) In the absence of reliable employment and income data, analysis of these trends during the project period is difficult. According to the World Bank*, the recent economic upswing appears to have increased employment although unemployment remains high in the 20-25% range. In spite of recent wage increases of up to 30%, wage levels remain competitive to those in other Caribbean countries. A recent decrease in inflation and the general world economic upswing bode well for St. Vincent's economic prospects.

d. Estimated value of project works

(1) The value of the physical works for building projects was estimated from the final project costs plus a (lower) cost-per square foot estimate for those structures made available for other uses by the construction of the new buildings. The Barrouallie Primary school's final cost included a sum for preparing a site and moving an existing building. Allowances were made for this in the estimate. A lower cost-per-square-foot figure was estimated for the existing structure because they are all wood framed buildings.

---

* "St. Vincent and the Grenadines, Economic Sitiuation and Medium Term Prospects," April 1, 1983. World Bank Report # 4370 CRG

(2) Final project costs were used for the roads on Canouan and Union Islands. For the coastal protection project it was assumed that approximately one half mile of asphalt road was protected and this would cost around EC$ 500,000 per mile to replace.

(3) For the reafforestation and soil conservation projects and average estimated land cost of EC$4000 per acre was used to arrive at a value for the protected lands.

(4) School maintenance is not figured in the project physical value as not enough data were available.

(5) Similar valuation methods are used throughout this report.

(6) Using the above mentioned methods, the estimated physical value of the project in St. Vincent is EC$8,351,475 (US$ 3,093,140). No attempt to quantify the socio-economic value was made.

e. Demand for additional sub-projects

(1) The focus of school construction on the primary level

will increase enrollment and put pressure on the existing secondary and junior secondary schools. Although there is a compulsory education law in St. Vincent, it is not enforced and existing primary school facilities are insufficient for the primary school population. It can be expected, therefore, that with the increase in primary school facilities the enrollment will rise with a consequent rise in demand for secondary school facilities. In Barrouallie, for instance, it was reported that primary school enrollment prior to the construction of the new school was 263 students. The first year the new school was in use the enrollment rose to 400 students.

(2) Investigation of the Canouan and Union Islands road projects revealed a serious potable water shortage. Both islands rely solely on public and private rain catchment systems for potable water. The problem is so serious on Union Island that water must be rationed during the dry months at the rate of approximately 6 gallons per person per week.

f. Continued employment and skills learned

(1) The scope, length, and timing of this evaluation did not permit follow-up research into the continued employment of workers hired through the sub-projects. Some comments can be made, however, on other long-term employment opportunities created as a result of the sub-projects.

(2) Although no data were obtained, it can be assumed that the teaching staff at the school sub-projects will be increased as a result of the expanded facilities and enrollment. In some cases an expanded curriculum as a result of available facilities (i.e. industrial arts facilities at Brighton School) will necessitate further teaching staff. Additionally watchmen and janitors have been hired for the new schools. On Union Island the construction of the road contributed to the need for a maintenance team of 15 persons hired for three months of the year; however, no such team was created for Canouan Island. No discernable derivative employment was created by the reafforestation and soil conservation projects. In short, the creation of direct long-term employment by these sub-projects was negligible.

(3) Skills training throughout the territories under the BHN/CED project was at most incidental. Even where opportunities may have presented themselves, project supervisors could not follow up on them in any programatic fashion. In the building projects, already skilled labor was used although some apprentices did gain additional work experience. A learn-by-doing approach probably taught some local residents more proper methods of planting trees in the reafforestation project.

3. St. Lucia

FINDINGS

a. Physical status, description, and maintenance

(1) Our visits established the following:

Sub-project Activity	Status
Rock Hall Primary School	Complete
Dennery Primary School	Complete
Gros Islet Primary School	Complete
Soufriere Hospital	Nearly complete
Mongouge Road Improvement	Complete
Drainage Hewanorra, Dennery Victoria Park	2/3 complete
Water Supply Balca/Piaye	Complete
Water Supply Delcer	Complete
Water Supply Bouton	Complete

(2) The physical description and maintenance that we found at each site was:

(a) Rock Hall Primary School is two seperate structures built on the side of a steep hill. The upper building contains three classrooms, home economics, science, and crafts rooms, plus the restroom facilities.

The buildings have just been completed. Some site work remains to be completed, but all of the project funds have reportably been spent.

(b) Dennery Primary School is a two-story structure connected to the existing primary school by a covered walkway on the second floor. This addition contains six classrooms, a home economics room, a library, and staff rooms. The lack of additional toilets has created a burden on the facilities in the existing building.

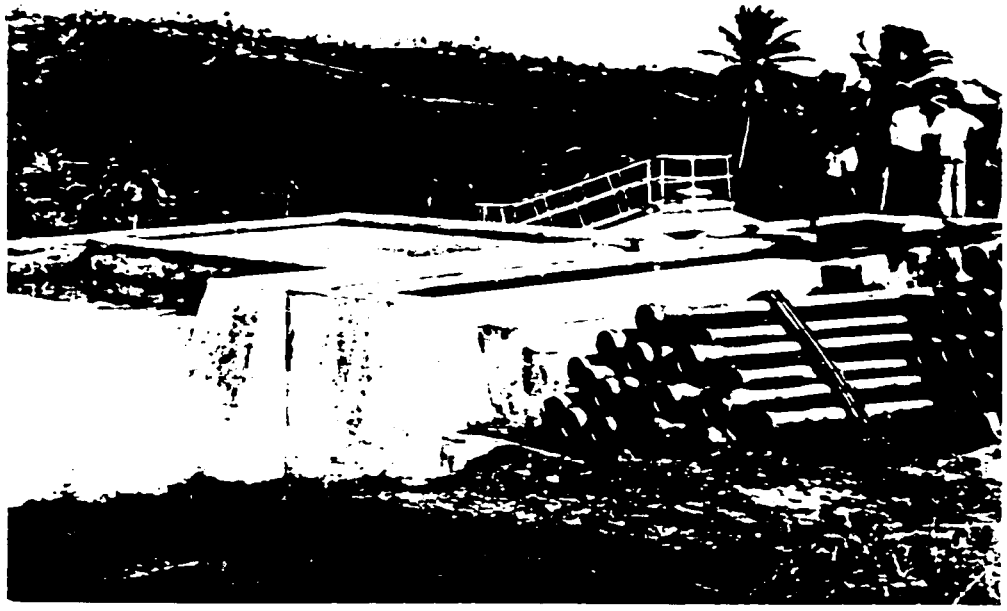
Despite the fact that this school is within the area of the Dennery Drainage Sub-project, there is still a serious drainage problem. Maintenance of the new and existing buildings did not appear to have taken place for quite some time. The new building merely

needed some cleaning and touch up painting, but the old building needs extensive repairs to the doors and windows.

(c) Gros Islet Primary School sub-project was actually two sub-projects. The rehabilitation of the existing building involved repairs to the toilet facilities, some roof repairs, and restoration of doors and windows. The new building has six classrooms, a library, a staff room, a head teacher's office and toilets. (See photo)

The new school is being well maintained largely through the efforts of the head teacher and volunteer labor from the community. Major repairs are referred to the Ministry of Education maintenance program.

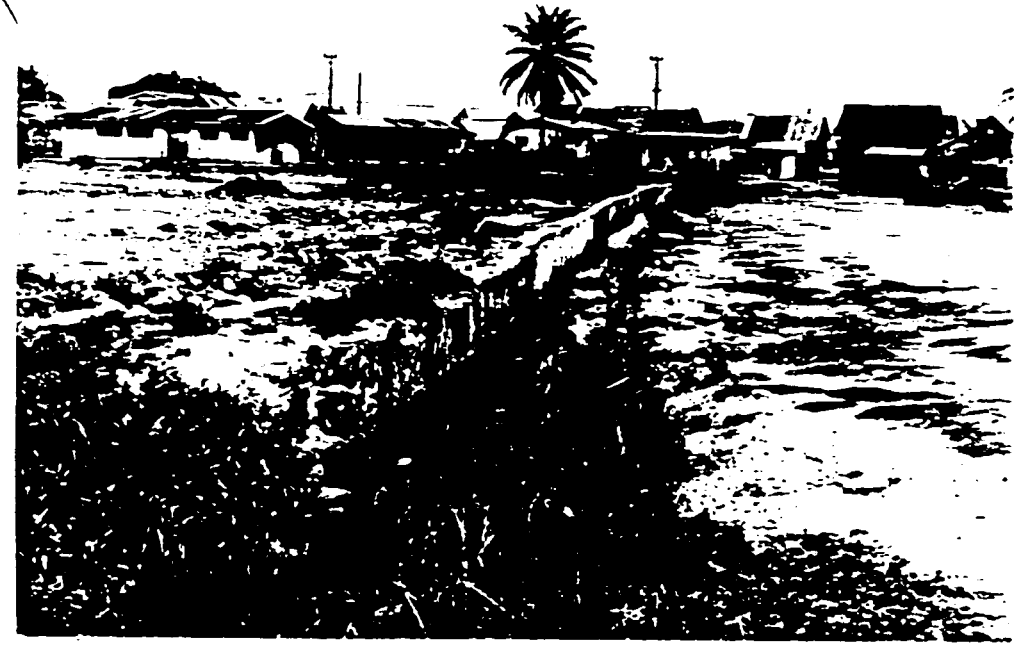
(d) The sub-project for the Rehabilitation of the small hospital at Soufriere was not a rehabilitation project as such because this work had already been completed. Instead, a new eight-bed maternity ward was built at the rear of the hospital. (See photo) The project is nearly completed with only minor tile and cabinet work, plumbing, and a set of back door steps yet to be constructed.



Delcer water system - filter tank (St. Lucia)

Soufriere Maternity Ward (St. Lucia)

35



Dennery Drainage (St Lucia)

Gros Islet School (St. Lucia)

(e) Mongouge Road Improvement was reported to have been completed over a two-mile section of hilly terrain. Other than a few minor sections of patch work, the road is still in extremely poor condition. Most of the work done to improve drainage is grown over with vegetation and a large portion of the base course laid has pot-holes and is washed away.

(f) The Drainage Improvements at Hewanorra Airport Victoria Park, and Dennery Village have had varying degrees of success. Victoria Park drainage system consists of an enclosed covered ditch of approximately 670 feet in length. The surrounding areas appeared relatively dry although additional work needs to be done around the intake to the system.

The Hewanorra System is about 8000 feet in length. Inverts have been laid the entire length and about half the length has side walls built and back-filled. A cover was not planned for this system. Because the system is not complete, a swamp was being created where the system prepares to cross under the highway and empty into the sea.

The Dennery drainage area (see photo) was

nowhere near completed and, thus, was not working. Reportedly inverts had been placed the entire length although silt deposits and plant growth did not make this obvious.

(g) The Water Supply at Balca and Piaye contain 12,200 feet of buried pipeline, a 50,000 gallon reservoir, and a small booster pumping station. Plans are under way to connect this system with the Delcer supply system and lower the requirement for booster pumping at Balca.

(h) The Delcer Water Supply system has 7800 feet of pipeline, a 150,000 gallon per day sand filter and a 50,000 gallon metal water storage tank. It is a well planned and well built system. (See photo.) With the addition of a new mainline now under construction (not financed with BHN funds), this project will also increase the supply to the Balca/Piaye system. A cover over the filter would greatly improve the system.

(i) The Bouton Water Supply has a 13,300 foot water line and a 175,000 gallon ground level water storage reservoir. The vinyl roof-covering over the reservoir has created some minor maintenance problems trying to keep the rain water from collecting in the center and collapsing the cover.

COMMENTARY

A. Although the designs for the schools often included landscape plans, the funds available reportedly did not allow for the completion of those plans. In many cases, badly needed retaining walls and playing fields were eliminated.

B. The benefits derived from the Mongouge road improvement sub-project were short-lived due to a lack of continuing maintenance.

C. It might have been preferable to fully complete one or two of the drainage project sites rather than partially complete three sites.

b. Utilization

Rock Hall Primary School	300* students
Dennery Primary School	600 students
Gros Islet Primary School	482 students
Augier Primary School	450* students
Odsan Primary School	300* students
Soufriere Hospital	5660 people
Marchand Health Center	5000 people
Mongouge Road Improvement	2663 people
Drainage @ Hewanorra, Dennery and Victoria Park	23* acres
Drainage @ La Clery	10* acres
Water Supply @ Balca/Piaye	960 users
Water Supply @ Delcer	3000 users
Water Supply @ Bouton	300 users
Water Supply @ Perrot	1600 users
Water Supply @ Millet	2000 users
Water Supply @ Jacmel	1500 users

* estimated

c. Employment generation

(1) Architectural and building design, bidding, and contract management functions were centralized recently into the Central Planning Unit of the Ministry of Finance and Planning. It is through this office that the last Project Supervisor worked and building projects under the BHN program were coordinated. All BHN/CED building projects were tendered publicly and let out to private contractors for construction. No stipulations had been made with regard to the type and number of labor to be used and contractors were unwilling to divulge detailed labor figures. Nonetheless, a picture of a typical conytractor's *modus operandi* arose through conversations with supervisory personnel.

(2) Typically, a contractor's team comprises a core group of skilled workers that had worked with the contractor on previous jobs. Additional skilled labor might be picked up at the site, if needed and when available. Unskilled day workers are generally recruited on site during construction stages that

require more labor, but only a lucky few might continue working throughout construction. The employment impact of this type of project, particularly upon the unskilled (and therefore more likely to be unemployed) is small and of short duration. The greatest impact is likely to be on the skilled laborers with contacts among contractors who, except during serious downturns in the construction industry are likely to be regularly employed. During the period of the BHN project the construction sector in St. Lucia was relatively strong (except for 1979 when labor disputes caused a stoppage in the oil terminal project) with a growth of 10% in 1980 and an estimated 3% growth in 1981.*

(3) Water supply projects were conducted by the Central Water Authority (CWA) using direct hire labor. Structures were built directly by CWA using on site labor wherever possible, with the exception of the installation of two pre-fabricated steel storage tanks installed on a purchase/installation agreement with a local supplier. Pipelines were layed by the regional Maintenance Staff of CWA. Projects were advertised in the area in order to maximize local employment impact, however reportedly response was poor because of the low daily rates offered. A 40% increase** in daily government labor rates in 1981 improved the response somewhat. Skilled as well as unskilled labor were recruited on site when available. According to reports, it was

---

* Economic Memorandum on St. Lucia, April 21, 1982, World Bank Report #3828 SLU.

** Ibid.

seldom necessary to bring in skilled laborers from off-site. As a result, local employment impact was maximized, to the extent that non-CWA workers were used in the relatively isolated areas where water sources and storage/filter areas are located.

(4) Road and drainage construction was conducted by the Public Works Department (PWD) using direct hire daily labor. As with water projects labor was hired on-site as much as possible. The ratio of unskilled to skilled labor was high as the works were relatively unsophisticated requiring significant excavation.

(5) In few of the sub-projects of St. Lucia was the 40% labor target reached. (See Table 8) Although no detailed labor figures were available for contracted projects, it was consistantly reported that labor accounted for between 30-40%. Because of the very high materials content, water projects were even less labor intensive. Only the drainage projects, consisting of 12% of total expenditures, reached labor content goals. The types of sub-projects conducted defined the limits to the labor intensivity of the BHN/CED project in St. Lucia. 83% of the project expenditures were on high material content water and building projects.

(6) Increase in total employment and real income of lower income groups.*

---

* Economic Memorandum on St. Lucia, April 21, 1982, World Bank Report #3828 SLU.

TABLE 6.

ST. LUCIA EMPLOYMENT GENERATION	site visit	total expenditure	total labor costs	% labor	total man-days	number employed
Rock Hall Primary School	*	619,809	216,933	35	6,291	20
Dennery Primary School	*	639,375	223,781	35	6,490	38
Gros Islet Primary School	*	459,302	160,756	35	4,662	19*
Augier Primary School		432,907	148,367	35	4,303	18*
Odsan Primary School		249,796	87,429	35	2,535	10*
Soufriere Hospital	*	211,000	73,850	35	2,142	9*
Marchand Health Center		134,230	46,981	35	1,362	17
Subtotal		2,737,419*	958,097*	35*	27,785*	131
Mongouge Road Improvement	*	269,221	99,491	36	3,256*	29
Drainage-Hewanorra/Dennery/ Victoria Park	*	414,125	186,083	45	6,085*	32*
Drainage-La Clery		148,500*	66,825*	45*	2,185*	11*
Subtotal		562,625	252,908	45	8,270	43
Water Supply-Balca/Piaye	*	299,365	60,579	20	798	30
Water Supply-Delcer	*	367,394	90,840	25	2,616	27
Water Supply-Bouton	*	196,295	55,248	28	1,164	51
Water Supply-Perrot		184,818	55,796	30	400	17
Water Supply-Millet		177,842	42,671	24	1,930	41
Water Supply-Jacmel		88,925	24,800	28	280	22
Subtotal		1,314,639	329,934	25	7,188	169
Grand Total	9	4,883,904	1,640,430	34	46,499	372

* estimated

TABLE 7

St. Lucia Population & Employment Figures

	Census	Prel.		Est.
	1970	1975	1980	1981
Total population (in thousands)	99.8	111.8	120.2	122.0
Annual percentage growth rate	1.6	1.6	1.5	1.5
Total labor force (in thousands)	30.3	34.0	36.5	37.2
Total employment (in thousands)	26.1	29.2	31.4	31.8
Unemployment rate (percent)	13.9	14.1	14.0	14.5

Total labor force as a percentage of total population has remained relatively stable as has the reported unemployment rate during the project period for which figures are available. Comparative income statistics for the project period were not available.

COMMENTARY

A. The use of bill of quantity or lump sum contracts precludes specifying labor requirements. Where a contractor is willing to tender such a bid, the bid price is likely to be excessively high to compensate for the risks in unfamiliar labor-intensive building techniques. As a result, contracted projects in St. Lucia had less of an employment impact, particularly on the target population of unemployed youths and women, than other implementation modes. The trade-off, however,

is with the better planning and cost control inherent in bill of quantity and lump sum contracts. A consideration in this trade-off is the capability of government agencies to implement projects efficiently by force account, and of course the existence of contractors with the skills and resources to conduct projects of the size and type envisioned by the BHN project. Judging from the buildings visited, local contractors are clearly capable of this level of construction. Whether the PWD or other government agencies could match the quality and price of contracted projects through force account, however, is an open question.

B. The choice of sub-project can ultimately be the determining factor in the labor intensivity of a country's program. Inherent in certain projects are a labor/material ratio with only a limited variance. Given a country's development priorities, labor intensivity goals may only be reached by a mix of high and low labor intensive projects. Inclusion of some highly labor intensive agricultural, soil conservation or afforestation programs would have balanced the less labor intensive building projects prevalent in St. Lucia.

d. Estimated value of project works

(1) The value of the physical works for drainage sub-projects was estimated from the area of land affected by the system times the reported average cost of land in the area.

(2) Estimates on the physical value of water systems were calculated using the following: number of users times average of 450 gallons of water per user months times average reported charge for water of EC$7 per 1000 gallons times estimated life of the system of 240 months.

(3) Building projects were estimated in a similar manner to that used for St. Vincent.

(4) Using the methods described, the estimated physical value of the subprojects in St. Lucia is EC$13,680,000 (US$5,067,000).

. Demand for additional sub-projects

Ministry of Education has identified the extension of twenty infant and primary schools as a major priority. Because of the density of the population in the castries basin area almost all of the priority projects are located there. At present, less than half of the eligible students find places in secondary schools. Secondary school expansion is also needed.

f. Continued employment and skills learned

Long-term employment generation by sub-projects is

negligible. Janitors and occasionally night watchmen are hired for new schools constructed. New water systems are presently maintained by the existing regional maintenance crews although some operation/maintenance personnel have been hired and there are plans to upgrade the regional maintenance crews to handle the additional capacity.

4. Dominica

FINDINGS

a. Physical status, description, and maintenance

(1) Our visits established the following:

Sub-project Activity	Status
Massacre Primary School	Complete
Wesley Primary School	Complete
Bagatelle Primary School	Complete
Dos D'Ane Primary School	Complete
Portsmouth Primary School	Complete
Savanne Paille Primary School	Complete
Wairs Primary School	Complete
St. Joseph Health & Maternity Clinic	Complete
Public Conveniences	Complete
Repairs to Rural Clinics	Complete
Calibishie Water Supply	Complete
Grand Bay/Pichelin Water Supply	Complete
Bagatelle/Fond St. Jean Water Supply	Complete
Marigot Water Supply	Complete

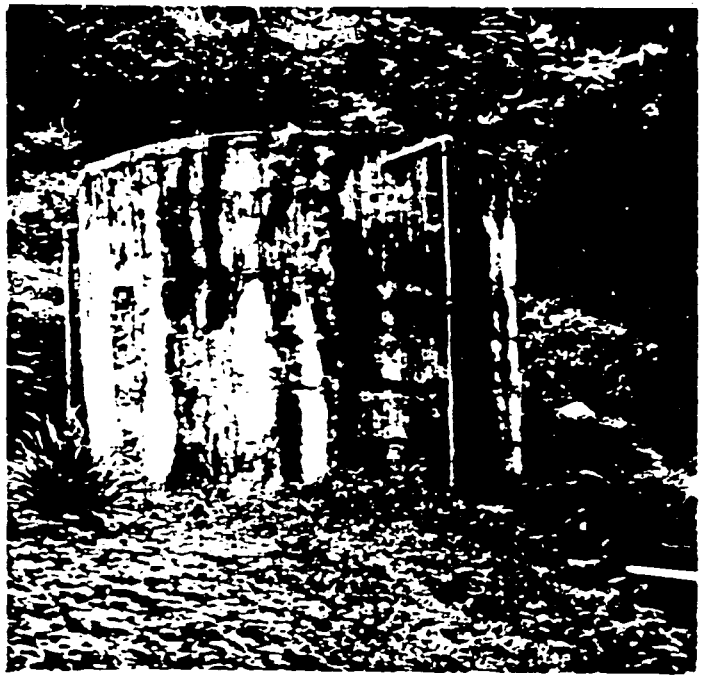
(2) The physical condition and maintenance that we found each site we found at each site visited was as follows:

(a) The Massacre Primary School consists of 12 classrooms, plus head teacher, staff, toilet and storage rooms contained in a two-story reinforced concrete structure. The school is slightly over one year old and is well maintained.

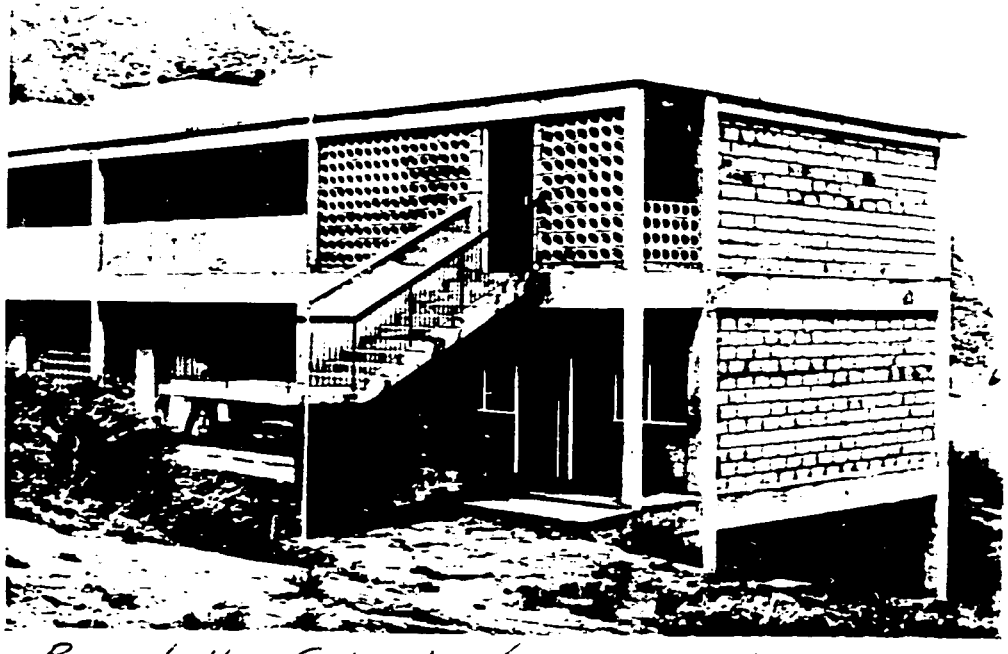
(b) The Wesley Primary School is a two-story reinforced concrete structure with concrete block infill and a flat concrete roof. It contains the usual teachers' rooms and toilets plus 13 classrooms. It is a newly completed school in good repair although the rear wall of the building leaks during the rainy season.

(c) The Bagatelle Primary School is the same size and design as the Massacre School. Minor changes were made in the design of this school because of the sloping site. Concrete blocks replaced the metal railing on the second floor because the harsher climate at Bagatelle would rust the metal work and create a maintenance problem.

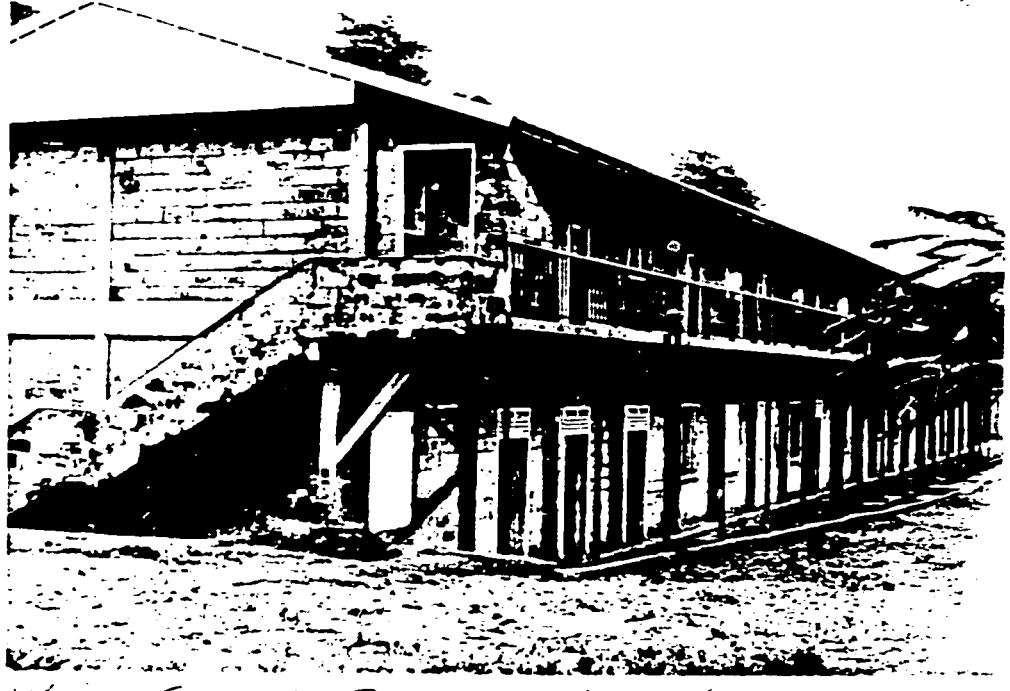
Savanne Paille School (Dominica)



Grand Bay - Pichelin Water System (Dominica)



Bagateille School (Dominica)



Weirs School Rehabilation (Dominica)

(d) The Dos D'Ane is a small single story structure with four classrooms and toilets. The school is stepped down a slightly sloping site and is built of reinforced concrete post and beam construction with a flat concrete roof and concrete block infill.

This school, like almost all of the new schools in Dominica, has the problem of water seepage through the windward walls during the rainstorms.

(e) The addition to the Portsmouth Primary School is a two-story addition with principal's office and home economics rooms on the second floor and three classrooms plus toilet block on the ground floor. The school was reportedly designed and built so that a third story could be added at a later date.

This was perhaps the least well maintained of all the schools visited. Results of minor vandalism had not been repaired.

(f) The Savanne Paille Primary School was built on the foundation of the old demolished school. It is a small school consisting of five classrooms. Because there is no piped water to the school, wooden privies are used

and rain water is collected off the roof and stored in a cistern.

The water fawcetts served by the cistern have all been broken off and not repaired despite the fact that school was about to start for the new school year.

(g) The rehabilitation of the Primary School at Weirs consisted of installing a new roof, doors and windows. It also included construction of a new toilet block and the painting of the building. The building and grounds appeared to be well maintained.

(h) The St. Joseph Health Centre & Maternity Centre were combined and built as a single structure. The building contains doctors' and dentists' offices, consultation and treatment rooms, a laboratory, a dispensary, records room, and waiting room. Also, in the same building are staff, labor, and delivery rooms plus a living area for a nurse.

The building was clean, but in need of minor maintenance work in plumbing and painting.

(i) The construction of Public Conveniences was com-

pleted in six villages plus five in the capital of Rosseau. Reportedly, each facility consisted of three showers, three water closets, and one urinal for men, and three showers, and four water closets for women.

(j) Repairs were complete on five Rural Health Clinics and the work consisted mainly of reroofing, new doors and windows, and some plumbing work.

(k) The Calibishie Water Supply System sub-project was not a new intake structure with storage/treatment tank as the sub-project description suggests. The sub-project as built, consists of 22,720 feet of pipeline throughout the village. Because the intake structure is not complete the pipelines are not connected and the system is not in operation.[1]

(l) Grand Bay/Pichelin Water Supply project consisted of construction of a water storage tank, the laying of pipeline, and construction of the foundations for a filter system. The filter was not built because of a

[1] The Bank points out that due to the fast-track nature of BHN, the distribution system was completed before the intake structure, which was a loan-funded sub-project.

lack of funds and the pipe materials were supplied under a separate CIDA project.

(m) The Marigot Water System replaced the existing two inch diameter distribution line with a new four inch diameter line. Records indicate 6705 feet of pipeline were replaced. This replacement of pipeline reportedly allows areas lying on the fringe areas of the system to receive water where previously they did not receive it.

COMMENTARY

A. The new schools built under this project are generally well designed and built. Although generally higher in cost than other schools constructed under this project, the higher costs could be offset by lower maintenance costs over the long run. These schools all have reinforced concrete roofs which should also give them a longer, relatively maintenance-free life and withstand high wind loads better than more conventional roofs.

B. The construction of the water line in Calibishie before developing a source of water seems to be a backwards approach. It would have been preferable to use the (quicker) BHN funds to develop the source, and the slower funds to build the distribution system.

b. Utilization

Massacre School	431 students
Penville School	396 students
Wesley School	589 students
Bagatelle School	333 students
Campbell School	172 students
Dos D'Ane School	120 students
Portsmouth School	467 students
Mahaut School	687 students
Savanne Paille School	147 students
Weirs School	700 students

St. Joseph Health & Maternity	3234 people
Restoration of Old Canefield Mill	?
Public Conveniences	8122 people
Rural Clinics	3827 people
Calibishie Water Supply	1001 people
Grand Bay/Pichelin Water Supply	4389 people
Grand Fond	789 people
Bagatelle/Fond St. Jean Water Supply	421 people
Marigot Water Supply	3554 people
Atkinson Water Supply	1324 people

c. Employment generation

(1) As in St. Lucia, Dominica contracted out the construction of all the building sub-projects. Two of the early activities, the Old Canefield Mill Restoration and the Portsmouth Primary School, were begun by the Public Works Department (PWD) but were subsequently contracted out. The contractors were encouraged to hire local labor, a policy which contractors often follow anyway for reasons of economy especially in Dominica where transport is difficult and deplacement allowances are common. Labor intensivity was limited, as in all the territories, by the design and type of construction common to the Caribbean. Building design, particularly for the schools, suggests significant use of skilled labor. School design is of reinforced concrete post and beam construction with cinderblock infill and concrete roofs. In one design an attractive and sophisticated domed roof was employed requiring, no doubt, fairly experienced carpenters and workers to construct. The employment impact as a result, particularly among the unskilled, was probably minimal.

(2) The Central Water Authority was responsible for the construction of BHN water sub-projects. As can be seen in Table 8, labor content varied considerably. This can be explained by the use of donated pipes and other materials. The higher labor content in the Grand Bay/Pichelin water supply project, for

instance, is due to the use of pipe previously donated by CIDA. BHN funds were used only for the purchase of a small number of fittings necessary to complete the installation. As labor was used largely in the laying of pipe, it can be assumed that a large component was unskilled, thus making a significant impact among the unemployed. However, labor figures cannot be considered indicative of water projects overall because of the large input of materials not reflected in the total expenditure figures.

(3) Reliable income and employment figures were virtually nonexistent for Dominica. Given the destruction wreaked by Hurricanes David and Allen just prior to the initiation of the BHN/CED project, it can only be assumed that the economic climate is improving.

COMMENTARY

A. We were told in the field that the decision to conduct building projects entirely by contract grew out of the experience early in project implementation with PWD's initial attempts to carry out the Old Canefield Mill Restoration and Portsmouth Primary School Projects by force account.[1]

---

[1] The bank disagrees. In its view, the contracting decision was made because of the large numbers of schools to be constructed and the PWD's commitments on post-hurricane rehabilitation projects.

TABLE 8.

DOMINICA EMPLOYMENT GENERATION	site visit	total expenditure	total labor costs	% labor	total man-days	number employed
Massacre Primary School	*	697,954	210,282	30	8,201	20
Penville Primary School		643,998	159,436	25	6,218	22
Wesley Primary School	*	618,434	91,897	15	3,584	20
Bagatelle Primary School	*	569,226	141,026	25	5,500	25
Campbell Primary School		343,061	102,051	30	3,980	18
Dos D'Ane Primary School	*	334,168	58,231	17	2,271	14
Portsmouth Primary School	*	400,609	119,103	30	4,645	19
Mahaut Primary School		139,108	32,436	23	1,265	6
Savanne Paille Primary School	*	269,490	62,538	23	2,439	17
Weirs Primary School	*	191,176	47,487	25	1,852	11
St. Joseph Health and Maternity	*	538,980	135,077	25	5,268	25
Restoration-Old Canefield Mill		340,659	161,897	48	6,314	18
Public Conveniences	*	188,643	76,923	41	3,000	50
Repairs to Rural Clinics		107,796	37,069	29	1,200	35
Subtotal		5,383,302	1,435,453	28	55,737	300
Calibishie Water Supply	*	261,749	16,513	6	644	8
Grand Bay/Pichelin Water Supply	*	295,784	265,306	90	13,354	27
Grand Fond Water Supply		230,419	41,154	18	1,605	20
Bagatelle/Fond St. Jean Water Supply	*	64,989	23,897	37	932	7
Marigot Water Supply	*	117,482	14,051	12	548	7
Atkinson Water Supply		32,339	20,000	62	780	13
Subtotal	--	1,002,762	380,921	38	17,863	82
Grand Total	13	6,386,064	1,816,374	28	73,600	382

Local governments (in some places and at some times) are inadequate to carry out independently the BHN/CED construction sub-projects. Nevertheless, Dominica provides a clear cut case of local government pushing for the limits on labor intensivity. An attempt was made to spread employment benefits by stipulating use of local labor however, it is unlikely this had a significant impact on contractor modus operandi. Local conditions are such that contractors will use local labor anyway whenever it is in their self-interest.

(2) School design in Dominica was based on sound criteria which didn't happen to be consistent with labor intensive goals. Primary design criteria were (a) hurricane proof construction, (b) low maintenance, and (c) maximum floor space. This demonstrates yet another example of how sub-project criteria may not be entirely consistent with overall employment objectives, or with previous sub-project selection schema.

d. Estimated value of project works

(1) Using methods described earlier in this report, the estimated physical value of the subprojects in Dominica is EC$16,020,000 (U.S.$5,930,000).

e. Demand for Additional Sub-projects

The destruction by Hurricanes David and Allen make new capital works and rehabilitation an urgent priority still in evidence today. The Ministry of Education has a list of schools still needing renovation or replacement. Road conditions are deplorable and there are still clinics needing rehabilitation or expansion. Clearly, the needs are enormous in infrastructure rehabilitation and replacement.

f. Continued Employment and Skills Learned

School and clinic construction created no additional long term employment. In all cases, facilities were constructed for existing staffs. Water systems were largely extensions or improvements of existing systems and created no new employment. Only in the case of the Old Canefield Restoration, which provides opportunities for local artists, does there appear to be any possibility of long term employment generation. Nevertheless, an employment "ripple effect" can be postulated in that the purchase of desks and other furnishings for the new schools, for example, would naturally contribute to continued or additional jobs in the firms of local suppliers. Skills learning, again, was only incidental, as far as we could determine, post facto.

5. Montserrat

a. The physical status, description, and maintenance

(1) Our visits established the following:

Sub-project Activity	Status
Lees Primary School	Complete
Kinsale Primary School	Complete
Renovation of District Health Clinics	Complete
Agriculture Feeder Road	Complete
Reafforestation of Northern Section	Complete
Redevelopment of Spring Sources	Complete

(2) The physical condition and maintenance that we found at each site visited was:

(a) The Lee's Primary School sub-project consisted of rehabilitation of the existing school and the addition of a new building.(see photo) The existing building was re-roofed with asphalt shingles, new doors and windows were installed, and the toilet block was repaired. A new building, approximately 35 feet by 50 feet, was added to the complex. The new building is one large open space. Site work was started to create a playing field, but funds ran out before the leveling was completed, not withstanding the fact that

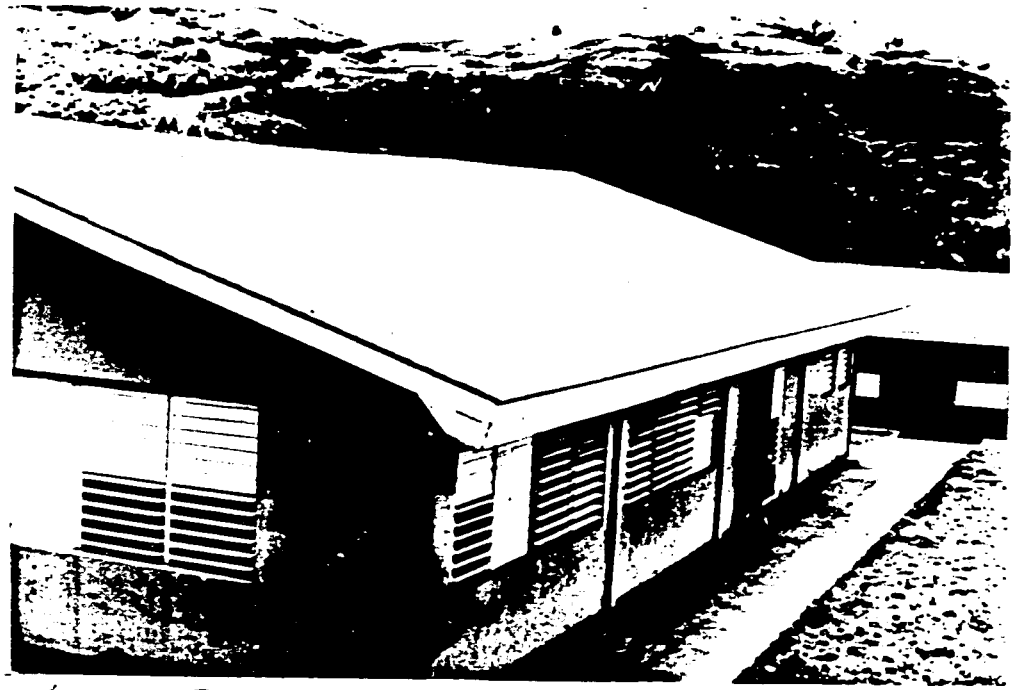
the St. Patrick's Primary School sub-project allocation was transferred to the Lee's school sub-project.

(b) The Kinsale Primary School sub-project was similar to the Lee's School. Less work was done in rehabilitation of the existing buildings and the new building is slightly smaller than the one at Lee's School. The school was in fair condition and in need of little maintenance.

(c) The renovation of district health clinics (see photo) involved work on two clinics on the island--at Salem and Bethel. The work at the Salem clinic included the addition of a doctor's examination room and toilets and cleaning, painting, rewiring and cabinet work in the existing structure. The existing structure includes a porch, waiting area, and a small dispensary. Maintenance has not yet been required on this clinic.

(d) The agricultural feeder road (see photo) is an approximately two-mile dirt tract used mainly by tractors working in the pineapple fields. A portion of the road was paved with concrete to allow the tractor to climb a steep slope during the rainy season. Little maintenance has been done on the road and erosion has begun to create large gullies.

Distric Health Clinic (Montserrat)



Lees School (Montserrat)

Agricultural Feeder Road (Montserrat)

(e) Reafforestation has been conducted in the North in an area originally denuded for agricultural development and which was grazed by cattle, sheep, and goats. An area of approximately 35 acres has been fenced and planted with a variety of tree species. The works are protected by rangers hired by the Ministry of Agriculture. The fences did not appear too sturdy, although it was reported that they effectively keep out the cattle which graze in the region.

(f) The redevelopment of spring water supply sources reportedly involved work on seventeen springs in three major areas. Corbett Springs, visited by the team, is an area containing six of these sources. The major work at Corbett Springs was done at the primary spring consisting of building up and covering the spring catchment box, and in laying 1,500 feet of pipeline. Work on the other springs included clearing out and reworking catchment areas to increase the intake volume. One of the sources worked on at Corbett Springs has been completely destroyed by a flash flood and has not been rebuilt. Maintenance is reportedly carried out at least once a week by a man visiting the springs and cleaning out the catchment areas.

COMMENTARY

A. One might question the suitability of using asphalt shingle roofs in a humid climate. If water were to seep under the shingles, the lack of air movement between the shingles and the wood might cause the wood to rot at a rapid rate.

b. Utilization

Lee's Primary School	108 students
Kinsale Primary School	133 students
District health clinics	
Salem	2,000 people
Bethel	1,500 people (estimated)
Agriculture feeder road	100 farms/500 acres
Reafforestation	35 acres
Redevelopment of spring sources	14,000 people

c. Employment generation

The paucity of detailed information available in or on Montserrat prevents a comprehensive analysis of the employment impact of the BHN project. Some general comments will have to suffice. Montserrat subprojects were conducted by the Ministries involved; Agriculture, Public Works, and the Water Authority. There did not appear to be any conscious effort to prefer labor intensive techniques although the nature of the projects conducted resulted in a significant labor content overall, see Table 9. Probably most significant to the BHN project's purposes is the fact that Montserrat has not experienced an unemployment problem over the last decade. According to World Bank figures*, unemployment has gone from 4.5 percent in 1970 to 6.1 percent in 1980, and has actually declined to 5.4 percent in 1981, midway through the BHN project.

d. Estimated value of project works

Using methods described elsewhere in this report, the estimated physical value of the sub-projects in Montserrat is EC$4,040,000 (U.S.$1,500,000)

1* Economic Memorandum on Montserrat, April 19, 1982, World Bank Report #3826MO.

G7 Subproject Activity Questionaire

Country: _____ Name of Activity: _____

1. Estimated Cost: _____ No: _____
2. Labour Content: Amt.: _____ = _____ % Date: _____
3. How many months after agreement with Bank can activity be started? _____
4. What % of the construction materials for this activity are of local Origin? _____ imported? _____
5. What is the likelyhood of alternative funding for this activity within the next year? _____
6. What are the recurrent maintenance costs of this activity likely to be? Low, Medium or High? _____
7. What Ministry would provide supervision and management for this activity? _____
   Is their management capacity Low, Medium or High? _____
8. Is the technical expertize needed for this activity present within the organization?.
   What % of the technical work (design eg.) can be handled in house? _____
9. What is the government priority for this activity? _____
10. What is the rationale for this proposed activity? _____
11. What environmental effects, positive or negative does this activity (Continue oversid
    suggest? _____
12. Which segments of the population are most likely to benefit from this activity? _____

_____

Name of Interviewer: _____

Name of Respondent: _____

G7 Maintenance Questionaire

Date: _____

Country: _____

Organization: _____

A. Describe Procedure for:

1. Planning routine maintenance and minor repairs:

_____

_____

_____

2. Budgeting: _____

_____

_____

3. Executing: _____

_____

_____

4. Spare Parts: _____

_____

_____

5. Tools: _____

_____

_____

6. Shop: _____

_____

_____

7. Crew: _____

_____

_____

8. Contracting: _____

_____

GSP

9. Scheduled Maintenance: _____

_____

B.1. Problems Encounted in Planning: _____

_____

_____

2. Budgeting: _____

_____

_____

3. Executing: _____

_____

_____

C.1. Ideas for Improvement in Planning: _____

_____

_____

2. Budgeting: _____

_____

_____

3. Executing: _____

_____

_____

Name of Interviewer: _____

Name of Respondent: _____

TABLE 9.

MONTSERRAT EMPLOYMENT GENERATION	site visit	total expenditure	total labor costs	% labor	total man-days	number employed
Lee's Primary School	*	305,953	161,000	53	1,926	11
Kinsale Primary School	*	120,382	42,134*	35	1,780*	16
Renovation of Distric Health Clinics	*	52,551	18,392*	35	776*	15
Subtotal		478,886	221,526*	46	4,482*	42
Agriculture Feeder Road	*	52,551	10,510*	20	443*	20
Reafforestation of Northern Section	*	204,273	118,771	58	9,154	55
Redevelopment of Spring Sources	*	361,717	63,501	18	4,860	21
Grand Total	6	1,097,427	414,308*	38	18,939*	138

* estimated

e. Demand for Additional Sub-projects

Thanks to some excellent work by some young foresters in the Ministry of Agriculture, there is an increasing awareness of the vulnerability of the island's ecology and the need for afforestation. A government spokesman stated that support for afforestation programs would be a higher priority for any further assistance through a BHN program. In addition, the island is making great efforts to develop its agriculture, especially in cotton production and agricultural extension, and would welcome assistance in this field.

f. Continued employment and skills learned

With the exception of the agricultural feeder road, there was no long term employment generated. The agricultural feeder road, however, is a farm to market feeder road which reportedly opened up farming land of 100 people to the markets in Plymouth and elsewhere on the island. Reportedly, pineapples, other fruits and vegetables are produced for these markets.

6. St. Kitts-Nevis

a. Physical status, description, and maintenance

(1) Our visits established the following:

Sub-project Activity	Status
Rehabilitation and Extension of Cayon Primary School	Complete
Rehabilitation and Extension of Newton School	Complete
Soil conservation at Greenhill	Complete
Site clearing and preparation for cattle rearing--Nevis	Complete
Water reservoir at Cayon	Complete
Improvement to distribution system at Jessups--Nevis	Complete
Clearing Pinney's mini-dams and connecting to Charleston Supply - Nevis	Complete
Storage reservoir at cotton ground-- Nevis	Complete

(2) The physical condition and maintenance that we found at each site visited was:

(a) The rehabilitation of the existing portion of the primary school at Cayon consisted of new roofing material and new doors and windows. The new construction at the school includes nine classrooms, a toilet block, head teacher's office, storage room, and a small kitchen. The new classrooms replaced temporary pre-fab buildings.

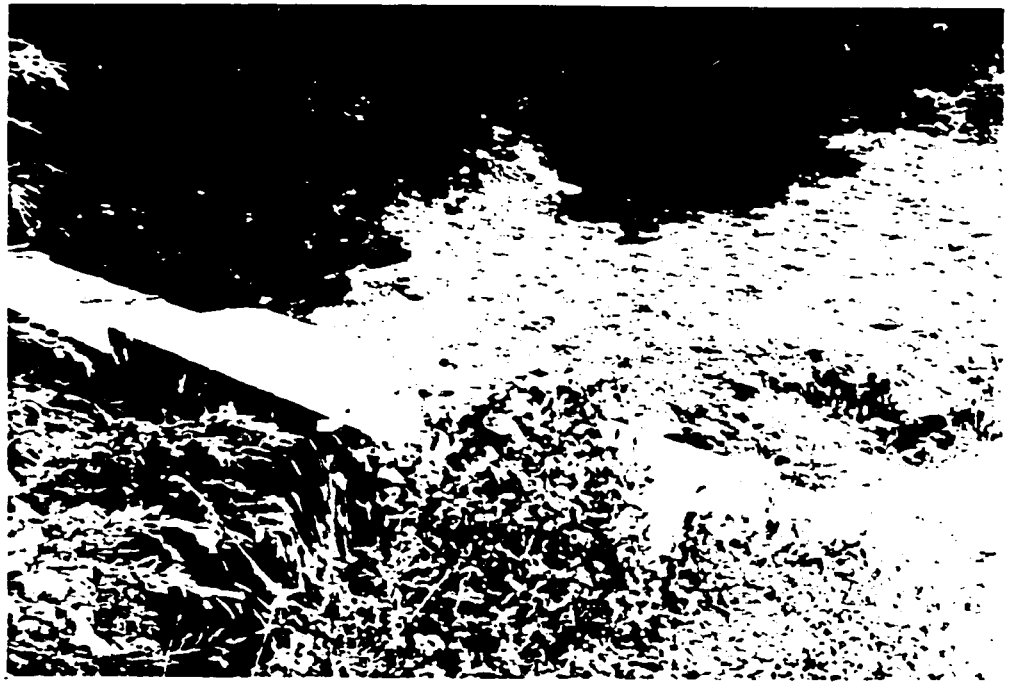
The maintenance of this school is being carried out by the Ministry of Public Works on a request basis.

(b) At the Newton School, four new classrooms were built. In addition, the existing buildings were rehabilitated by replacing the roofing materials, replacing the louvered windows with decorative concrete blocks, and by repainting.

A minor maintenance problem exists with the elimination of waste water from the bathroom sinks.

(c) The soil conservation subproject at Greenhill consisted of building terracing, drainage systems, and access roads. It seems to have eliminated major problems of soil erosion. As the area is almost completely planted in sugar cane, it is being used and maintained.

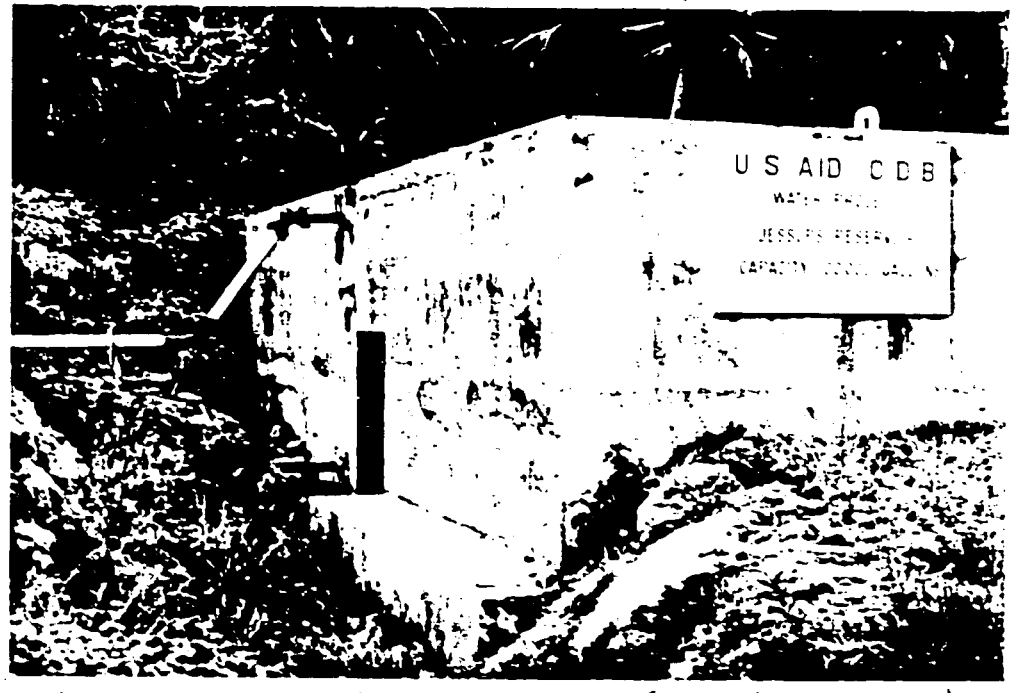
(d) The site clearing and preparation of land for a cattle rearing sub-project in Nevis (see photo) is not in full service at present because of a major tic problem on the island. This is one of the worst affected areas on the island and there are only 47 cows on the site at present. In addition to clearing and



Clearing Pinneys Mini dams (St Kitts Nevis)

Cotton Ground Water Storage. (Nevis)

Site clearing & preparation for cattle rearing (Nevis)



Jessups water system. (St Kitts Nevis)

fencing the site, the sub-project included the construction of a small caretaker's house and storage area, plus several animal watering troughs. Water to these troughs is supplied by the town water main. Most of the of tree removal work was done by bulldozer.

(e) The water storage reservoir at Cayon is a 100,000 gallon reinforced concrete covered tank and the sub-project included installation of a pipeline into town. The entire system is gravity feed so no pumping is required.

(f) The improvements to the distribution system at Jessups' sub-project (see photo) included funds for the earth storage reservoir and treatment tank sub-project. Because of the high estimated cost of the earth storage reservoir, it was decided instead, to use those funds to build, a 100,000-gallon reinforced concrete tank. In addition, approximately 2,400 feet of four-inch galvanized pipe was installed to replace an existing two-inch line. An additional line tees off of the new line to serve the small village of Barnes Ghaut. Future plans call for the extension of the distribution system in Jessups.

The water storage tank is divided into two 50,000 gallon tanks so that maintenance can be performed on the system without interrupting service.

(g) The cleaning of Pinney's mini-dams (see photo) involved removing silt and vegetation from the ponds formed behind the existing dams and the installation of close to 8,000 feet of four-inch pipeline. Because of the nature of the job, most of the work was completed by machines.

The ponds were empty at the time of the visit because they had been recently drained. Lack of use during the construction of the pipeline caused the water to become stagnant.

Leaves recently fallen into the pond area indicate that when the system is put back in operation, a continuing maintenance problem will remain.

(h) The storage reservoir at Cotton Ground is a 45,000-gallon reinforced concrete tank similar to the other tanks at Jessups and Cayon.

COMMENTARY

A. Standardization of design and the use of a single contractor for construction of the water storage tanks saved money because of the repeated use of the formwork and the contractor's better understanding of the project.

B. The clearing of Pinney's mini-dams is going to be a continuing maintenance problem. The collecting ponds should be covered or the brush and trees should be cleared from the edges of the ponds.

b. Utilization

Cayon School	460 students	
St. Paul's School	360 students	
Newton School	444 students	
Sadlers School	275 students	
Soil conservation at Greenhi l		153 acres
Land clearing at Con Phipps		72 acres
Site clearing at Nevis		100 acres/47 cows
Water reservoir at Cayon		2,178 people
Improvements to water system at Jessups		895 people
Clearing of Pinney's Mini-Dams		
Storage reservoir at cotton grounds		

c. Employment generation

(1) Building construction in St. Kitts-Nevis, although done primarily by the Ministry of Public Works, remains as labor intensive as the other territories discussed. (See Table 10) Labor use, defined apparently by the design and type of construction, is of the type and extent found throughout the eastern Caribbean. There was extensive use of heavy equipment on the water projects for excavation, access roads, and ditching. Construction of the storage reservoirs required largely skilled labor to construct the somewhat technically difficult concrete tanks, resulting perhaps in the higher labor costs than might be expected for material intensive projects of this type. Labor figure estimates for the Cayon water reservoir were adjusted from obviously inaccurate reported figures, suggesting that even the adjusted figures may be high. The soil conservation and land clearing projects were conducted by the National Agricultural Corporation (NACO) using NACO staff laborers. Although the work was conducted in the off season when NACO laborers are laid off, it was reported that NACO wage agreements allow for two days per week pay to laborers during the off season, regardless of availability of work on the farms. Given the extensive use of skilled laborers and NACO laborers, the impact of the BHN sub-projects on the purely unemployed was minimal in St. Kitts-Nevis, though the underemployed NACO workers clearly benefitted.

TABLE 10.

ST.KITTS-NEVIS EMPLOYMENT GENERATION	site visit	total expenditure	total labor costs	% labor	total man-days	number employed
Cayon Primary School	*	565,929	191,008	34	6,064	20
St. Paul's Primary School		635,498	124,978	20	4,602	30
Newton Primary School	*	245,365	88,844	36	3,048	32
Sadlers Primary School		141,329	42,399*	30	1,154	5
Subtotal		1,588,121	477,229	30	14,868	87
Soil Conservation at Greenhill	*	485,081	258,411	53	38,370	555
Land Clearing at Con Phipps		295,817	167,220	57	5,988	85
Site Clearing at Nevis	*	229,067	112,011	49	18,652	20
Subtotal		1,009,965	537,642	53	63,010	660
Water Reservoir at Cayon	*	296,439	127,469*	43	5,265	25
Improvements to water system at Jessups	*	433,926	139,919	32	4,022	32
Clearing Pinney's Mini-Dams	*	239,846	32,746	14	2,433	32
Storage reservoir at Cotton Ground	*	122,424	53,231	43	1,394	17
Subtotal		1,092,635	353,365*	33	13,114	106
Grand Total	8	3,690,721	1,338,236	36	90,992	853

* estimated

Although overall labor content is a respectable 36 percent, this can be attributed largely to the labor intensive agriculture projects and extensive skilled labor use in water tank construction.

No data were available on unemployment or income trends, however authorities agree that unemployment/underemployment is high, particularly during out-of-crop season. Consequently, agriculture sub-projects which were conducted by agriculture laborers off-season probably had the most impact on relieving the unemployment/underemployment problem.

d. Estimated value of project works

(1) The estimated physical value of the subproject in St. Kitts-Nevis is EC$12,190,000 (U.S.$ 4,500,000)

e. Demand for Additional Sub-projects

The development priorities of Nevis emphasize water systems in the southwest portion of the island and completion of plans for the expansion and rehabilitation of the island's school system.

f. Continued Employment and Skills Learned

As in all the territories visited, long-term employment generation and skills training were negligible.

7. Antigua

a. Physical status, description, and maintenance

(1) Our visits established the following:

Sub-project Activity	Status
St. John's (Otto's) Primary School	Complete
Rehabilitation and extension of St. John's all age school	Complete
Conversion and improvement of Handicraft Center	Partially Complete
Rehabilitation and extension of Greenbay Primary School	Complete
Rehabilitation and extension of Gray's Farm Health Clinic	Complete
Completion of Liberta Health Clinic	Complete
Gray's Farm Drainage	Complete
Casada Gardens Drainage	Complete

(2) The physical condition and maintenance that we found at each site visited was:

(a) The St. John's (Otto's) primary school is built around a courtyard in a "u" shape. The two-story buildings on the two sides of the courtyard contain a total of 16 classrooms. The bottom of the "u" contains a single story which houses the home economics department with two kitchens and a livingroom-bedroom combination, and the toilets for the school.

Separated from the academic unit, is a single story administration building containing seven rooms, toilets, and a kitchen. The interior of the administration building is not completed nor has any site cleanup or landscaping been done. The school is not being used.

(b) The rehabilitation work at the St. John's all-age school (see photo) consisted mainly of re-roofing, raising the floor on the ground level, and repainting. The extension included three new single-story buildings. Contained in these new buildings are two craft rooms, two storage rooms, four classrooms, a library, a head teacher's office, a staff room, and toilet facilities. Electrical power is not yet connected to all of the new buildings.

(c) The renovation of the old public building and conversion to a Tourist Bureau and Handicraft Center is about 80 percent complete (see photo). The building was stripped down to its basic shell, walls and roof. The walls were repaired from damage caused by an earthquake, and new beams, floors, doors, and windows installed.

(d) Extension of the Greenbay Primary School included

St Johns All Age School (Antigua)

Handicraft Center (Antigua)

Casada Gardens Drainage (Antigua)

Grays Farm Health Clinic (Antigua)

four new classrooms and an administrative block in a style which matched the existing buildings. The rehabilitation work involved re-roofing, replacing the windows with decorative concrete block, new ceilings and painting. Maintenance work had been done on this school by the Ministry of Education maintenance team.

(e) Gray's Farm Health Clinic (see photo) was more than doubled in size by the subproject. A waiting area, nurses' lounge, and reception area are located in the existing structure. The new addition contains a doctor's office and examination room, a dentist's office, an epidemiologist's room, storage room, recovery room, and a room for cooking demonstrations.

The roof connecting the old building with the new addition leaks badly and the floor is rotting away. Users of the building complain of it being hot.

(f) The Liberta Health Clinic was completed as a two-story structure containing examination, sterilization and treatment rooms, office and waiting areas with sanitary facilities, and a three-bedroom living quarters for the head nurse. The building was well maintained.

(g) The Gray's Farm drainage improvement subproject involved the construction of 900 feet of concrete lined drainage channel and 600 feet of unlined channel.

The tidal movement is not great enough to flush the channel clean, so the system depends upon rain storms to flush the channel out. The seawater which remains in the channel can become very stagnant in the dry season.

(h) The Casada Gardens drainage sub-project is approximately 7,000 feet long, and concrete-lined. About 150 feet of the channel are covered where it is close to the road's edge. Some simple bridges were built to serve houses cut off by the channel course, and repairs were done to property damaged during construction of the channel.

The drainage channel is presently being cleaned out by the Ministry of Public Works maintenance crew. The drainage channel empties into an unlined ditch which in turn, empties into the sea.

COMMENTARY

A. The roofs of some of the schools are asphalt shingles. See comments under Montserrat.

B. The restoration of an old building might be more appealing to the tourist if it is carefully done. Although much more expensive, older style wooden louvered windows in the handicraft center would add greatly to its charm.

C. Given a limited amount of funding, it would possibly have been better to have started the Casada Gardens drainage subproject at the sea outlet and work up, rather than start at the high end and work down.[1]

b. Utilization

St. John's (otto's) Primary School	558 students
St. John's All Age School	606 students
Handicraft center	tourism
Greenbay Primary School	689 students
Gray's Farm Health Clinic	17,000 people
Liberta Health Clinic	
Gray's Farm Drainage	7 acres
Casada Gardens Drainage	32 acres
Skerritts Village Drainage	34 acres

c. Employment generation

All the sub-projects in Antigua were construction projects executed directly by the Ministry of Public Works. We were told that political considerations and some obscure labor requirements resulted in inefficient use of labor, however the data (see Table 11) would indicate the problem was not significant. Building

---

[1] Contrary to our field observations, the Bank claims that the sub-project did start at the sea outlet and was completed.

TABLE 11.

ANTIGUA EMPLOYMENT GENERATION	site visit	total expenditure	total labor costs	% labor	total man-days	number employed
St. John's (Ottos) Primary School	*	1,120,784	424,909	38	15,839	41
St. John's All Age School	*	720,503	262,917	33	7,299	28
Handicraft Center	*	557,930	263,167	47	10,422	26
Greenbay Primary School	*	298,741	113,522	38	4,730	40
Gray's Farm Health Clinic	*	134,745	46,170	34	1,710	30
Liberta Health Clinic	*	150,500	57,190	38	2,288	30
Subtotal		2,983,203	1,167,875	39	42,288	195
Gray's Farm Drainage	*	464,348	82,460	18	4,340	45
Casada Gardens Drainage	*	797,434	187,790	24	10,000	32
Skerrits Village Drainage						
Subtotal		1,261,782	270,250	21	14,340	77
Grand Total	8	4,244,985	1,438,125	34	56,628	272

construction labor figures are consistent with those of the other territories visited. Drainage projects made extensive use of heavy equipment even to the point of purchasing redi-mix cement for portions of the Cassala Garden drainage construction. Given the above, it can be postulated that the bulk of the labor used was skilled or semi-skilled and did not come from the ranks of the unemployed. In fact, the construction sector in Antigua has grown 35 percent between 1979-1981* and several interviewees suggested skilled labor is hard to find in Antigua.

Unemployment, according to the World Bank,* has not changed from around 20 percent since 1977 (latest figures to 1981). No data were available for income trends of lower income groups.

d. Estimated value of project works

The estimated physical value of the subproject in Antigua is EC$10,450,000 (U.S.$ 3,870,000)

---

* Economic Memorandum on Antigua and Barbuda, April 23, 1982, World Bank Report #3821CR

e. Demand for Additional Sub-projects

Extension of the drainage projects begun under the BHN program and additional school construction are Ministry of Public Works priorities for the future, we were told.

f. Continued Employment and Skills Learned

Because of the nature of the sub-projects conducted in Antigua, essentially no long-term employment was created nor was there any significant skills training.

B. General Analyses

In this section, we describe and comment on the implementation method, compare the labor intensivity in the various territories and types of activity, and discuss the institutional aspects of BHN/E within the CDB.

1. Implementation Procedures

Below we deal sequentially with the various phases of BHN/E; i.e., sub-project identification, approval, contracting, monitoring, and reporting.

a. Sub-project Identification

FINDINGS

(1) In 1979 and again in 1981, Project Consultants Ltd. (PCL) of Barbados conducted studies to identify and select work activities for inclusion in the BHN/E project.

(2) Visits were made to the various territories, and their governments asked for lists of potential subprojects.

(3) Each nominated activity was rated on ten (later 11) factors (see Appendix C), receiving from one to ten points on each. Ratings were totalled and activities with the highest total points were selected until the country allocation limit was reached.

(4) The method of rating used was open to the "halo effect" error.

(5) The supposition that all ten or 11 factors were receiving equal weight in the selection process (because each had a maximum of ten points) ignores the role of distributional characteristics of the ratings.

(6) In 1981, PCL selected 45 sub-projects out of 82 nominated. The average estimated cost of selected (i.e., highest rated) activities was $183,000; for rejected sub-projects, $123,000.

(7) Some sub-projects (e.g., Union and Canouan Island Roads, Grenadines) were subsequently included in the project without having gone through this identification and selection phase, although their merits were undoubtedly considered.

COMMENTARY

A. The validity and reliability of the rating procedure used in selecting activities for inclusion in the project left a lot to be desired in our view, though the attempt to be systematic about it is praiseworthy.

B. Differences of opinion regarding priorities may be unavoidable. For example, in connection with a specific sub-project in St. Vincent, while the Mission states retrospectively in a facesheet summary that "it was essential that soil conservation measures be introduced urgently...," that activity had received the lowest priority by the government out of the eight included in the Project Paper (Annex B-2). While, logically, the two points are not necessarily inconsistent, the probability is that the perceptions of the two organizations with regard to the utility of that activity were quite different.

C. Felt need by the host government is an important factor determining future project success. A statement of government priority is not the only, and may not be the best index of felt need, however.

D. Suggested changes which would facilitate implementation of similarprojects in the future are given in the Executive Summary and Recommendations section at the beginning of this report.

b. Sub-project approval

FINDINGS

(1) The Project Paper misjudged the identification stage to precede MCW approval (see p. 51) when, in fact, the reverse was the case.

(2) The Bank approval process (in consultation with the Mission) was simplified from its SOP in that the President of CDB could approve disbursements without presentation to the Board of Directors, the funds being grants rather than loans.

(3) The sub-project selection and approval process did not seem to be well understood by MCW officials in the various territories.

(4) The Bank approval process was uniform for all sub-projects, although the identification phase was not (as described earlier).

(5) The major condition precedent for approval and disbursement on school construction works (i.e., an improved maintenance plan) was essentially waived by the Bank and USAID, although token plans were submitted by the local Governments. The bank's position on this issue is given in Appendix K, para 7.

(6) The Pro-Ag (Annex I, p. 7, last sentence) stated that no subproject with less than 45% labor content could be approved. In retrospect, enforcement of this point would have eliminated 80% of the activities as they were constituted.

COMMENTARY

A. Waiving the maintenance plan precondition was a policy decision with inherent trade-offs. A precedent has now been set which diminishes the credibility of similar provisos in the future.

B. The exact proportion and cost of labor content is very difficult to establish before the fact, thus making such tests for sub-project approval somewhat tenuous.

C. The CDB duration for disbursement of funds from the starting point of the grant was about 6 months, while normal Bank processing of loans for projects is said to require 18 to 24 months.

D. A suggested change is presented under Recommendations.

c. Contracting

FINDINGS

(1) Contracting was involved in several aspects of implementation; viz., sub-project identification, engineering consulting, construction, and school maintenance manual and training.

(2) Of the four types of procurement, only the construction contracting seemed to be carried out competitively although CDB procurement regulations were followed, for the most part.[1]

(3) Table 12 presents our analysis of the consulting contracts for design, supervision of construction, and/or certification of financial claims. Sixty-five (64%) out of 102 sub-projects (the 78 in the evaluation plus 24 for Grenada and Belize) had such engineering consultants, some involving design work, others not.

(4) Table 12 indicates the average consulting contract to

---

[1] This is not necessarily a criticism, in as much as quick implementation was a key objective of the project.

be $34,500 (excluding School Maintenance). Five of these contracts (20% of the total number) exceeded $50,000 (see Appendix D).

(5) Table 12 also shows that the average consulting firm earned $55,600, on 1.7 contracts, covering 2.6 sub-projects.

(6) Fourteen of the 25 consulting contracts (56%) were with resident firms or with resident branches in the respective countries; 44% were external.

(7) Table 13 indicates that 30% of construction sub-projects (21 out of 70) used private construction contractors; the remainder used government means. Dominica was predominant in the use of private construction companies; St. Vincent didn't use any.

(8) A $95,000 contract was let[1] to conduct training sessions in school maintenance and develop a manual, notwithstanding the fact that at least two such manuals were already in existence: one developed for the Maple Leaf Schools (1981) and one commissioned by the CDB (1979) for Dominica (see Appendices E and F).

---

[1] As far as we could determine, without public advertising.

TABLE 12.

Analysis of Engineering Consulting Contracts

Summary Data:

Number of Contracts	25
Number of Sub-projects Covered	65
Number of Firms Involved	15
Total Cost[1]	$863,200
Cost per contract:	M[2]=$34,500
	R[3]=$11,000-110,000
Cost per sub-project	M=$13,300
	R[4]=2,800-26,000
Cost per firm:	M=$55,600
	R=12,200-197,700
Average firm had:	1.7 contracts (R=1-4) covering 4.3 sub-projects (R=1-13)
Average contract covered:	2.6 sub-projects (R=1-5)

1 - Rounded
2 - Mean or average
3 - Range, i.e. lowest to highest value
4 - Estimated

Frequency Distributions

No. of Sub-projects in Contract	No. of Contracts
5	1
4	4
3	7
2	10
1	3
Total	25

No. of Contracts	No. of Firms
4	1
3	1
2	3
1	10
Total	15

Cost ($,000)	No. of Contracts	No. of Firms
195 - 209		1
180 - 194		0
165 - 179		0
150 - 164		0
135 - 149		0
120 - 134		0
105 - 119	1	1
90 - 104	0	0
75 - 89	1	1
60 - 74	2	1
45 - 59	1	2
30 - 44	7	5
15 - 29	8	3
1 - 14	5	1
	25	15

COMMENTARY

A. Table 14 implies that engineering consultants (along with CDB staff) took on a growing importance and role, while the field supervisors and the public relations function seem to diminish in importance as the LOP progressed. Perhaps this reflects the realization during the BHN project that design capability thought to be present in the MCWs did not fully meet expectations. But this is largely supposition.

B. It would appear to us that 1/5 of the consulting contracts (i.e. those over $50,000) as well as the School Maintenance contract would have required formal procurement advertising as per CDB Guidelines as referenced on p. 48-9 of the Project Paper. To our knowledge, this was not done.

C. The sometimes heard comment that design consultants tended to "over design" was countered by their saying that budget control was not in their terms of reference.

D. To use private construction firms involved trade-offs. Doing so may have gotten the job done faster and more efficiently, but labor intensivity could not be assured and documentation and cost information were subsequently difficult to obtain.

E. A still more fundamental conflict is reflected in the above findings as between speed vs. competitive procurement.

F. The school maintenance manual and training component was not one of the better implemented project elements. Even if the two existing manuals were not wholly appropriate, the manual in the BHN procurement should have been a basis for bidder pre-qualification, rather than an outcome of the training seminars, in our opinion.

G. Suggested improvements are presented under Recommendations.

TABLE 13.

NUMBER OF SUB-PROJECTS BY CONSTRUCTION MODE	Total	St. Vincent	St. Lucia	Dominica	Montserrat	St. Kitts-Nevis	Antigua	
Private contractor	21	0	7	12*	0	2	0	* 2 started by MA com-leted by PC
Ministry of Public Works	30	9	3	0	4	6	8	
Central Water Authority	14	0	6	6	1	1	0	
Other	5	2 M of Ag	0	0	1 M of Ag	2 NACO	0	
	70							

TABLE 14.

History of BHN Project Support Budget

Element	Original Budget1/	First Revision2/	Ultimate Budget3/	Total% Change
Field Supervisors	230K	260K	215K	-7% or -17%
CDB Staff	126K	126K	165K	+31%
Engineering Consultants	539K	664K	664K	+23%
Public Information	30K	30K	12K	-60%
Contingency + Travel	26K	61K	85K	+227%
Total	951K	1,141K	1,141K	+20%

General Note: The above excludes the CED sub-project budget.

1/ In Project Paper, August 79

2/ ProAg, Amendment 2, Dec 79

3/ Contract Implementation Letter 11, Aug 82

d. Monitoring

FINDINGS

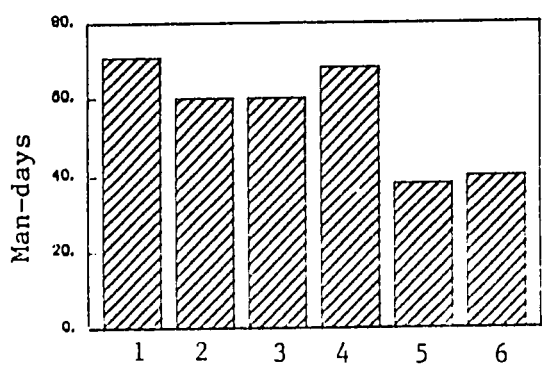
(1) Monitoring and inspection of sub-project works was carried out by three sources: the consulting engineers, the CDB, and USAID.

(2) The consulting engineers supervised construction, particularly when private contractors were involved. They held regular site meetings with the supervisor and contractor present. They certified financial claims to the Bank.

(3) The CDB staff spent 421 days (i.e., 1.67 man years) on grant-related field trips. This represented 18% of their total effort.[1] (See Appendix G.)

(4) St. Vincent and Montserrat had the most CDB monitoring, while St. Kitts and Antigua received the least as can be seen.

Figure 3.
CDB Officer Field Visits



1: St. Vincent
2: St. Lucia
3: Dominica
4: Montserrat
5: St. Kitts
6: Antigua

[1] Excluding the secretary.

(5) Since January 1981, USAID officers made two trips in 1981 and three in 1982 as shown below:

Person	Country	Dates	Year
Alejandro Sundermann	Dominica	April 28-30	1981
Trevor Too-Chung	Antigua	September 28-30	1981
Trevor Too-Chung	St. Lucia	February 22	1982
Trevor Too-Chung	St. Vincent	March 22-25	1982
Trevor Too-Chung	Dominica	April 19-23	1982
Michael DeMetre	Antigua	October 5-8	1982

We suggest no fundamental change in the monitoring procedure, though we do present a caveat under Recommendations.

e. Reporting

FINDINGS

(1) Two standard reporting forms were used:

The Project Supervisor's Monthly Report (PSMR) to be submitted to CDB by each of the field supervisors for each sub-project in their country. (See Appendix H.)

The Supervision Summary (SS) which was completed

every six months by the bank supervisor and was used both as an internal document and as a CDB report to USAID. (See Appendix I.)

(2) In addition, the design and construction consultants were responsible for submitting monthly reports to the respective governments and the CDB.

(3) Also, CDB and USAID officers normally prepared trip reports on their monitoring visits.

(4) Slippage between the PP and the Pro-Ag is seen in that the former specified that CDB would provide the Mission with quarterly progress reports, but this provision was not in the Pro-Ag.

(5) While the Bank complained that supervisors, after the first six months of submitting the PSMR, dropped off its systematic filing, the view from the field is that:

(a) it was not instituted until the activities were well under way (as a result of a general conference with all the supervisors);

(b) they were not given a deadline to submit it; and

(c) The Bank never insisted that it be submitted.[1]

COMMENTARY

A. CDB sent the SS to USAID every six months while the Mission is on a quarterly reporting system.

B. The PSMR form was not instituted until May, 1981 (or as late as November 1981, according to one source), while project works started in mid-1980.

C. The PSMR, while better instituted late than never, and while addressing certain pertinent aspects of the project, did not focus on certain evaluation relevant points (e.g., the number of unemployed persons hired).

D. While the reporting buggy should never precede the implementation horse, well designed, concise reporting forms would have helped the supervisors as well as the evaluators.

E. Improvements are suggested under Recommendations.

---

[1] The Bank believes that the only way to enforce submission would have been the drastic step of denying the beneficiaries reimbursement of salaries paid to Project Supervisors.

2. Labor Costs

FINDINGS

a. The crucial results on employment generation are summarized in Table 15 and presented graphically in Figures 4 and 5.

b. St. Vincent as a territory, and reafforestation as an activity type, resulted in the highest labor proportions. The figures range from 18 to 88%, with 35% overall.

c. There does not seem to be any interaction effect in Table 15. That is, for example, the percentage for soil conservation activity is not higher than for buildings in St. Vincent, but lower in St. Kitts.

d. In Figure 6 we see the bivariate distribution of sub-projects indicating that, to a slight extent, activities with lower total cost (i.e., less than EC$350,000) seem to be associated with higher labor content. It is also true, of course, that total cost is related to activity type.

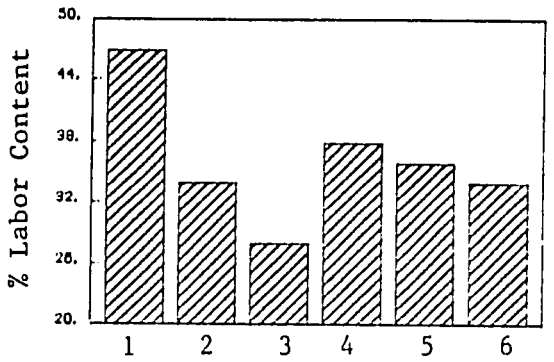
e. Only 16 of the 78 (20%) sub-projects evaluated had 45% or more labor content, in conformance with the original project plan.

TABLE 15.

PERCENTAGE OF LABOR COSTS BY COUNTRY AND CATEGORY	ST. VINCENT	ST. LUCIA	DOMINICA	MONTSERRAT	ST. KITTS-NEVIS	ANTIGUA	[1]Average labor cost as a percentage of total cost for various activities
Buildings	35	35	28	46	30	39	33
Roads	64	36	*	20	*	*	58
Reafforestation	88	*	*	58	*	*	75
Soil Conservation	82	*	*	*	53	*	58
Drainage	*	45	*	*	*	21	29
Water Systems	*	25	38	18	33	*	30
[1]Average labor cost as a percentage of total cost for the various countries visited	47	34	28	38	36	34	*

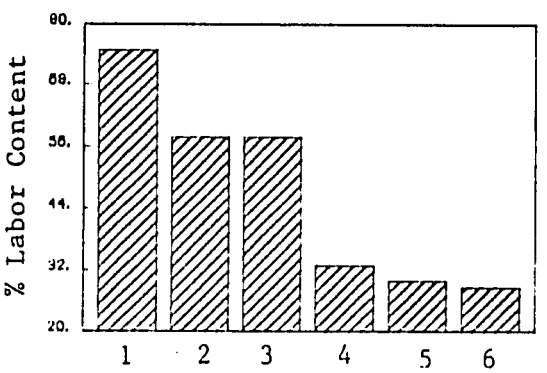
[1]Average values were calculated independently based on costs and not by averaging the cell values in the column or row.

Figure 4.
Average Labor Cost as Percent of Total by Country



1: St. Vincent
2: St. Lucia
3: Dominica
4: Montserrat
5: St. Kitts
6: Antigua

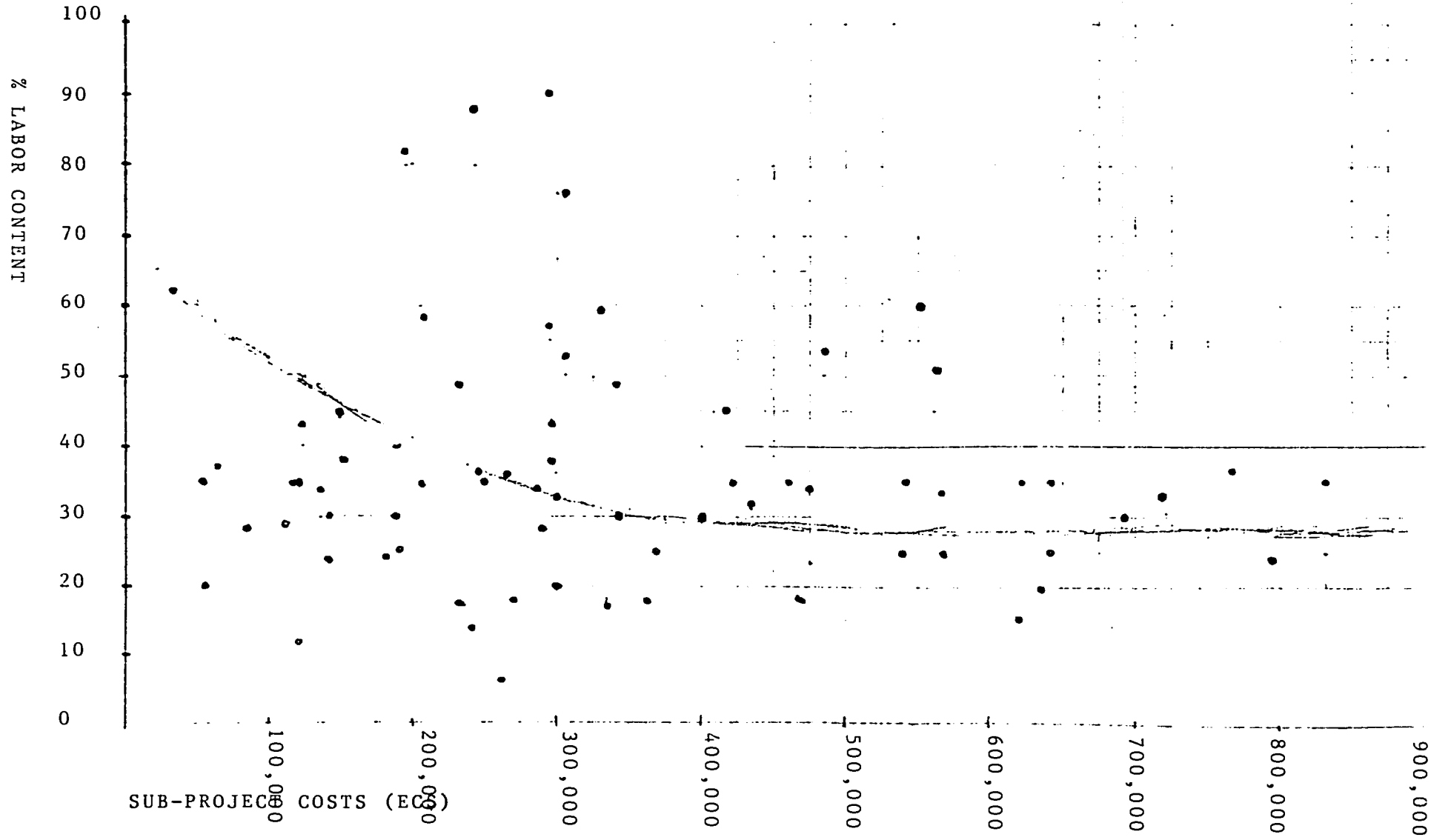
Figure 5.
Average Labor Cost as Percent of Total by Category



1: Reafforestation
2: Soil Conservation
3: Roads
4: Buildings
5: Water Systems
6: Drainage

FIGURE 6.

PERCENT LABOR CONTENT RELATED TO TOTAL SUB-PROJECT COSTS



COMMENTARY

A. The overall 35% labor content, though short of the 40% target, is quite respectable.

B. A logical problem exists in that percent-labor content cannot be precisely specified before the fact. Nor can private contractors be required to utilize human resources in place of more efficient equipment.

3. Institutionalization

FINDINGS

a. As sometimes happens, a certain amount of slippage occurred, as between the PP, the ProAg, and the real world. For example, the PP's log frame specifies as an end-of-project status condition that the "CDB will have institutionalized a basic human needs financing system...." The institutional analysis section states "...the CDB will appoint from within the Bank and the Projects Department[1] a special resource group to provide the necessary supportive services. The group will, with a project-financed engineer, technical assistant (inspector) and secretary, as well as an architect, engineer and draftsman financed by the Education Grant, form the Project Management Team."

But the Mission itself did not seem to conceive of the project as an institution-building activity for the Bank. The primary objectives were, rather, a quick economic stimulus through employment generation and a positive contribution to physical and social infrastructure in the targeted territories.

---

1 Emphasis ours.

b. The Project Agreement does not deal with the issue unequivocally. A plan for staffing a Project Management Team is a condition precedent. But only in Annex I is it stated that "...CDB will appoint from within[1] its Projects Department a team to provide necessary services in connection with the implementation of the Project. Together with[2] a project-financed engineer, technical assistant, and secretary, this team will assist in...." Thus, the only hint of any in-house organizational role lies in the words "from within" and "together with".

c. The staffing of the ultimate management team (all supported by the grant) is shown in Figure 7. At no time were there more than three full-time and one part-time professionals involved.

COMMENTARY

A. Although the definition and the criteria of what constitutes "institutionalization" are not totally clear-cut, certain minimal litmus tests can nevertheless be stated:

1. Is (or was) there a separate and identifiable unit encharged with the project?

---

1 Emphasis ours.

2 Ibid.

2. Is this unit shown on the organization chart of the larger entity?

3. Did the unit survive termination of the project?

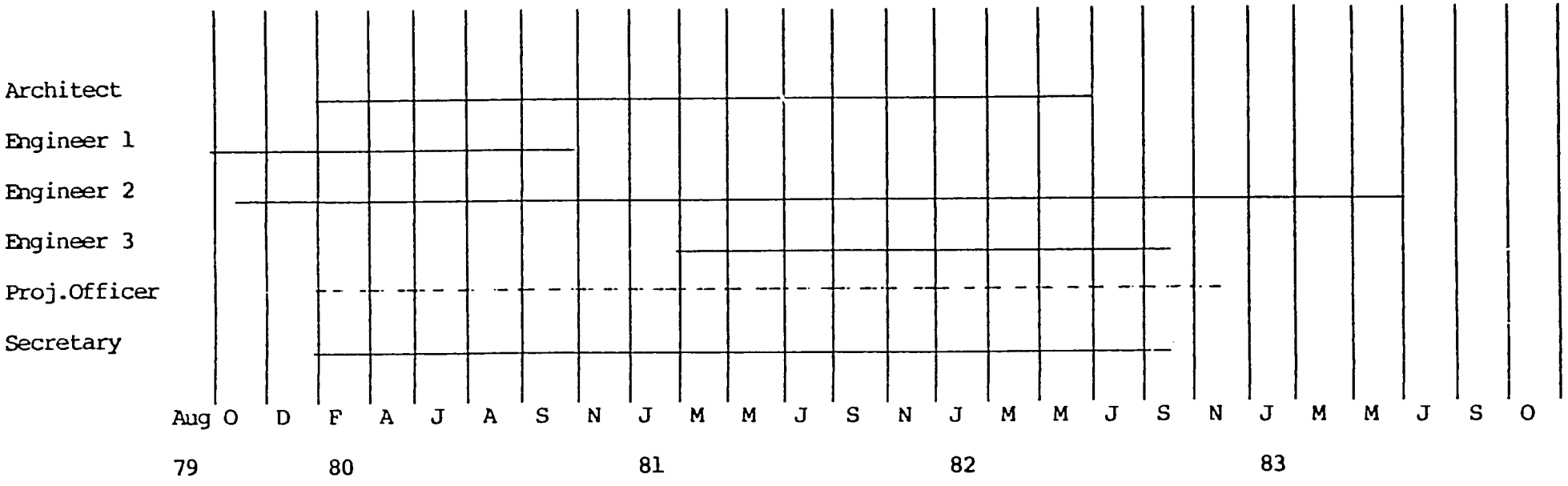
4. Has the system generated been incorporated in the institutional memory?

5. Does the larger entity intend to evaluate the project, post facto, in-house, as one of its own?

To the above, we would answer: yes, no, no, somewhat, and no, respectively. Thus, we conclude that a capability was created within the Bank but has not been institutionalized to any extent.

Figure 7.

CDB Management Team Tenure



Life of Project

V. GLOSSARY

BHN/E	Basic Human Needs/Employment
CDB	Caribbean Development Bank or the Bank
Inverts	The concrete portion in the bottom of a drainage channel
LOP	Life of Project
MCW	Ministry of Communications and Works, sometimes called PWD.
PCL	Project Consultants, Ltd.
PP	Project Paper
PSMR	Project Supervisor Monthly Report
ProAg	Project Agreement between USAID and the Bank
PWD	Public Works Department
SOP	Standard Operating Procedure
SS	Supervision Summary

VI. APPENDICES

Appendix A
TERMS OF REFERENCE

A. Objective

The purpose of the contract is to provide the services described in the scope of work below for the second evaluation of the Basic Human Needs, Employment Sector, and Caribbean Education Development (School Construction/Rehabilitation) projects between USAID and the Caribbean Development Bank (CDB).

The Basic Human Needs Project consisted at providing significant short-run employment opportunities for the unemployed while at the same time rehabilitating deteriorted public infrastructure which is vital to future development. Under the project, a number of labor intensive sub-projects in the Eastern Caribbean LDC's and Belize were financed, including primary schools, health and community centres, drainage systems, water supply systems, and re-forestation. (In addition, an amount was provided to finance a Skills Training Program for training young persons in entry level skills for the construction trade in Barbados. However, this activity was evaluated separately and will not be included in this evaluation.)

The Caribbean Education Development Project complemented the Basic Human Needs Project and was designed to facilitate the construction and rehabilitation of primary schools and to improve the on-going maintenance of primary school facilities.

B. Scope of Work

The consulting services required to be provided under this Contract are an analysis of the project in terms of the anticipated outputs and the end-of-project status and to evaluate the project's implementation system. The Contractor will be expected to visit the following countries: Antigua, St. Kitts-Nevis, Dominica, Montserrat, St. Lucia, St. Vincent, Grenada and Belize, and visit at least 50% of all sub-projects in each country.

1. End of Project Status:

The Contractor will determine whether the following objectives were attained: (This may be done using sampling techniques, if statistically feasible.)

-- Appraisal of the physical status, the utilization and maintenance of the sub-projects visited.

-- Increase in total public and private sector employment.

-- Increase in real per capita income of lower income groups.

-- Significant numbers of unemployed have gained employment, generating approximately US$4 million in income to these persons and their families.

-- The labor content of each completed sub-project was at least 40% of the total sub-project costs.

-- The CDB has institutionalized a basic human needs implementation system which makes available a regional pool of project development and implementation personnel and which features a fast track project design and execution process.

In addition, the consultants shall collect data on the following:

-- Labor costs as a percentage of total sub-project costs, by country as well as by category of sub-project (e.g. road maintenance, health center rehabilitation, etc).

-- Total estimated value of project works, both new and rehabilitated or improved.

-- Additional demand for sub-projects identified during the course of execution.

Further, the consultant team will, to the extent possible, do a follow-up study on workers employed during the sub-project execution phase to determine the following:

-- Percentage of workers who have remained employed, as compared to those who have returned to unemployed/under-employed ranks; of particular interest will be percentages of youths in the 14-20 category and women.

-- Specific skills, if any, acquired during period of employment under the projects.

2. Implementation System:

The Contractor will review the implementation procedures utilized for subproject approval, contracting (professional and construction services), and project monitoring (at project sites, by CDB, by AID), and reporting, and recommend changes which would facilitate management of similar projects in the future. Recommendations should be consistent with both CDB and AID procurement guidelines.

3. SCOPE OF WORK IS AMENDED TO INCLUDE (A) ANALYSIS OF ENGINEERING CONSULTANTS COSTS UNDER SUB-PROJECTS; (B) ITEM B.2 OF REF A IS AMENDED TO INCLUDE SUB-PROJECT IDENTIFICATION; (C) CONSULTATION WITH LAC/DR/CAR ON PID DEVELOPMENT REQUIREMENTS SHOULD BE ADDED; AND (D) SCOPE OF WORK SHOULD DELETE BELIZE AND GRENADA AS THEY HAVE BEEN EXCLUDED FROM THE SCOPE OF WORK DUE TO TRAVEL TIME REQUIRED AND NEED TO PROVIDE ADDITIONAL TIME FOR THE OTHER ISLANDS.

Appendix B

St. Vincent - Persons Interviewed

Mr. Moulton Williams	Project Supervisor
Mr. Percival Bumtym	Senior Engineering Assistant, MCW
Mrs. Jean Charles	Teacher, Brighton School
Mr. David Alexander	Maintenance Dept., MCW
Mrs. Ima Defreitas	Store Owner, Colonaire
Mr. Vibert Dublin	District Officer, Union Island
Mr. Peter Wilson	Road Supervisor, Union Island
Mr. Douglas Hom	Senior Engineering Assistant, MCW
Mr. Keith Lockhart	Regional Supervisor, Forestry Dept., MOA
Mrs. H. Scott	Head Teacher, Barroualie School
Mr. Karl John	Director of Planning
Mr. Grafton H. Vanloo	Chief Agricultural Officer, MOA
Mr. Reuben Bailey	Chief Engineer MCCO

St. Lucia - Persons Interviewed

Mr. Egbert Louis	Project Supervisor, CPU, Ministry of Finance
Mr. Gregory George	J. Gregory George & Associates
Mrs. Felicite Lucien	Headmistress, Gros Islet Infant School
Ms. Delia Joseph	Teacher, Dennery Primary School
Mr. Godwin Prosper	Teacher, Dennery Primary School
Mr. David Prescott	New Workers Manager, Central Water Authority
Mr. John Calixte	Manager, Central Water Authority
Mr. Joseph Alexander	Acting Permanent Secretary, Ministry of Education
Mr. Kenny Raymond	Capital Works Foreman, Central Water Authority

Dominica - Persons Interviewed

Mr. Devos Alexander	Devos Alexander Construction Company
Mr. Belgrave Robinson	Projects Officer, Ministry of, Education
Ms. Pricilla Prevost	Family Nurse Practitioner St. Joseph's Clinic
Mrs. Seriphine Blanchard	Public Health Nurse, St. Joseph's Clinic
Mr. Joseph C.W. Gregore	Consulting Engineers Partnership

Montserrat - Persons Interviewed

Mr. St. Clair Jeffers	Project Engineer, MPW
Mr. C.T. John	Permanent Secretary Ministry of Development
Mrs. Daniels	Assistant Permanent Secretary, Ministry of Development
Mr. John Osborne	Chief Minister, Montserrat
Mr. Ronald Loten	Manager, Water Authority
Ms. Claudia Ash	Nursery Teacher, Kinsale Nursery School
Miss Manelua Greenaway	Head Teacher, Kinsale Primary School
Mrs. Helena John	Head Teacher, Lees Primary School
Mr. Courtney Corbett	Supervisor, Water Authority
Ms. Violet West	Salem Clinic
Mr. Gerard Gray	Forestry Officer, Ministry of Agriculture
Mr. Bill Johnson	Forestry Technician, Ministry of Agriculture

St. Kits-Nevis - Persons Interviewed

St. Kitts:

Mr. Vernon Guishard	Port Authority
Ms. Becky Martin	Special Ed. Teacher Newtown Primary School
Mr. Leroy Pemberton	Headmaster, Coyon Primary School
Mr. Knight	Statistician, Ministry of Plan
Mr. Robert Manning	Director, Social Security Administration

Nevis:

Mr. Daniels	Minister of Nevis Affairs
Mr. Parry	Permanent Secretary of Nevis Affairs
Mr. Floyd Harris	Project Supervisor, Water Authority Nevis
Mr. Feluim Bailey	Project Officer, Ministry of Agriculture
Ms. Rose	Head Potter, Newcastle Pottery

Antigua - Persons Interviewed

Mr. Granville Flax	Project Supervisor Ministry of Public Works
Mr. Derrik Michael	Permanent Secretary Ministry of Public Works
Mr. Humphreys	Minister, Ministry of Public Works
Mr. Elmeade Brooks	Roads Engineer, Ministry of Public Works
Mr. Alan Jaap	Director, Ministry of Public Works
Mr. Irving Edwards	Quantity Surveyor, Ministry of Public Works
Ms. Ielme Martin	Nurse, Gray's Farm Clinic
Mr. James Knowles	Planning Officer, Ministry of Education
Mr. B.T. Lewis	Lewis & Simon Engineering
Ms. Peryline Harley	Handicraft Center
Ms. Molly James	Director, Handicraft Center

Appendix C

Sub-project Identification

The evaluation factors used are as follows:-

No.	Factor
1	Local labour content (45% and over - 10 points).
2	Government priority.
3	Social and economic needs.
4	Environmental benefits.
5	Recurrent costs (inverse factor).
6	Revenue earning or maintenance saving capacity.
7	Availability of technical input before implementation.
8	Immediacy of implementation.
9	Management competence.
10	Availability of alternate funding (inverse factor).
11	Foreign exchange earnings or savings.

Appendix D

BHN Engineering Consulting Contracts List

CONTRACT NO.	CONSULTANT	ADDRESS	NO. OF PROJECTS	VALUE OF CONTRACT (US$)
CA 1/Antigua	Gordon Belizaire & Partners	St. John's, Antigua	4	37,214.00
CA 2/Antigua	David Lashley & Partners	St. Michael, Barbados	2	51,871.46
CA 3/Antigua	Consulting Engineers Partnership	St. John's, Antigua	2	31,194.00
CA 1/Belize	Morrison & Andrewin	Belize City, Belize	3	38,185.00
CA 2/Belize	Robert C. Mahler Consulting Eng.Ltd.	Belize City, Belize	3	23,955.00
CA 1/Dominica	Webber Burnett Partnership	Roseau, Dominica	1	12,245.00
CA 3/Dominica	Islands Engineering Group	St. Michael, Barbados	2	28,129.00
CA 4/Dominica	Consulting Engineers Partnership Ltd.	Roseau, Dominica	5	109,648.71
CA 5/Dominica	Caribbean Consulting Engineers	Roseau, Dominica	2	20,000.00
CA 6/Dominica	Caribbean Consulting Engineers	Roseau, Dominica	3	66,207.79
CA 1/Grenada	Consulting Engineers Partnership	Christ Church, Barbados	4	34,574.91
CA 2/Grenada	Norris Mitchell Associates	Georgetown, Guyana	3	85,000.00
CA 3/Grenada	ADeB/APEC Consultants	Kingston, Jamaica	3	66,002.66
CA 1/Montserrat	Hubert Alben	Port-of-Spain, Trinidad	1 (forestry)	12,148.00
CA 2/Montserrat	C.S.O. Claxton	Basseterre, St. Kitts	4	17,070.00
CA 1/St. Kitts	ADeB Consultants	Basseterre, St. Kitts	2	5,658.84
CA 2/St. Kitts	Daphne Hobson Associates	Basseterre, St. Kitts	2	38,840.03
CA 3/St. Kitts	Eldon Jones & Associates	Basseterre, St. Kitts	4	18,442.00
CA 1/St. Lucia	Caribbean Consulting Engineers	Bananna Bay, St. Lucia	3	26,253.29
CA 2/St. Lucia	J. Gregory George & Associates	Castries, St. Lucia	2	32,312.89
CA 3/St. Lucia	Gordon Belizaire & Partners	Castries, St. Lucia	3	11,100.00

CONTRACT NO.	CONSULTANT	ADDRESS	NO. OF PROJECTS	VALUE OF CONTRACT (US$)
CA 1/St. Vincent	Engineering Planning & Surveying Services Ltd.	Port-of-Spain, Trinidad	1	12,000.00
CA 2/St. Vincent	Engineering Planning & Surveying Services Ltd.	Port-of-Spain, Trinidad	2	28,900.00
CA 3/St. Vincent	- Consulting Engineers Partnership Ltd.	Christ Church, Barbados	2	22,320.00
CA 4/St. Vincent	Mahy Chaderton & Ridley Ltd.	St. Michael, Barbados	2	33,967.00
CA 13/Regional	Sincos Consultants Ltd.	St. Michael, Barbados	School Maintenance	95,000.00

Appendix E

kotansky

and

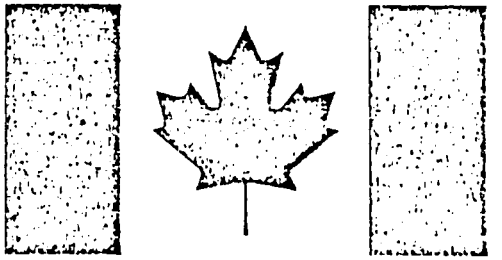
kotansky

architect and engineer

MAINTENANCE MANUAL

FOR

MAPLE LEAF SCHOOLS



CANADIAN INTERNATIONAL
DEVELOPMENT AGENCY

CANADA

AGENCE CANADIENNE DE
DÉVELOPPEMENT INTERNATIONAL

DEVIS SPECIFICATIONS

Appendix F

CARIBBEAN DEVELOPMENT BANK

REPORT No.1

ON

SCHOOLS MAINTENANCE / RECONSTRUCTION

DOMINICA

DECEMBER 1979

CONSULTING ENGINEERS PARTNERSHIP LTD

JEAN BAPTISTE HOUSE, ROSEAU, DOMINICA

CEP

126

PROPOSAL
for a
MAINTENANCE UNIT
for the
MINISTRY OF EDUCATION
DOMINICA

CONTENTS

Appendix G

CDB Staff Field Visits

ANNEX 6

OFFICER(S) TRAVELLING	COUNTRY	DATES	DS	MAN/D
BINGER	Grenada	18-20/9/79		3
BINGER	Dominica	2-3/10/79		2
BINGER	St. Lucia	4-5/10/79		2
BINGER	Antigua	8-9/10/79		2
BINGER	St. Kitts	10-11/10/79		2
BINGER & CHARLES	St. Vincent	17/10/79	1	2
BINGER	St. Lucia	21-22/11/79		2
BINGER	Grenada	10-13/12/79		4
BINGER	St. Vincent	15/1/80		1
CHALMERS	Montserrat	23-25/1/80		3
BINGER & ASHER	St. Lucia	29/1-1/2/80	4	3
CHALMERS	Montserrat	13-15/2/80		3
CHARLES	Dominica	20-23/2/80		4
CHALMERS	St. Vincent	25-27/2/80		3
ASHER	St. Vincent	25-29/2/80		5
BINGER	Grenada	27-29/2/80		3
CHALMERS	Montserrat	24-26/3/80		3
ASHER	Belize	26/3-3/4/80		3
CHALMERS	Trinidad (re Montserrat)	2-4/4/80		3
BINGER	St. Vincent	19-21/5/80		3
BINGER	Grenada	21-23/5/80		3
CHALMERS	Montserrat	28-30/5/80		3
ASHER	Belize	8-13/6/80		6
CHARLES	Antigua	9-10/6/80		2
CHARLES	St. Kitts	10-13/6/80		4
CHARLES	Montserrat	15-17/6/80		3
ASHER	St. Lucia	18-19/6/80		2
BINGER	St. Lucia	18-21/6/80		4
CHARLES	St. Vincent	25-26/6/80		2
BINGER	St. Vincent	14-16/7/80		3
CHARLES	Antigua	23-24/7/80		2
CHALMERS	Montserrat	12-15/8/80		4
ASHER	Antigua	3-7/9/80		5

107

OFFICER(S) TRAVELLING	COUNTRY	DATES	DS	MAN/DS
BINGER & CHARLES	St. Vincent	5/9/80	1	2
CHARLES	Montserrat	6-9/10/80		4
CHARLES	St. Kitts	10-11/10/80		2
CHARLES	St. Lucia	3-4/11/80		2
ASHER	St. Vincent	3-5/11/80		3
CHARLES	Dominica	4-8/11/80		5
ASHER	St. Lucia	5-7/11/80		3
ASHER & CHARLES	St. Vincent	27-28/11/80	2	4
ASHER	Belize	30/11-5/12/80		6
CHALMERS	Montserrat	2-4/12/80		3
CHARLES	Grenada	11-13/12/80		3
CHARLES	Dominica	7-9/1/81		3
CHALMERS	St. Vincent	7-9/1/81		3
ASHER	Antigua, Montserrat, St. Kitts	16-21/2/81		6
GOUGH & CHARLES	St. Lucia	25-27/2/81	3	6
CHALMERS	St. Vincent	11-13/3/81		3
ASHER	St. Lucia, Dominica	16-20/3/81		5
GOUGH & CHARLES	St. Vincent	23-26/3/81	4	6
CHALMERS	Montserrat	31/3-3/4/81		4
CHARLES	Antigua	19-21/4/81		3
CHARLES	St. Kitts	21-25/4/81		5
GOUGH & CHARLES	Dominica	17-20/5/81	4	4
ASHER	St. Lucia	3-5/6/81		3
CHARLES	Grenada	9-13/6/81		5
GOUGH	St. Lucia	14-17/6/81		4
CHARLES	St. Kitts	25-26/6/81		2
CHARLES	Antigua	28-30/6/81		3
ASHER	Belize	29/6-3/7/81		5
GOUGH	St. Vincent	20-23/7/81		4
ASHER	Dominica	24-28/8/81		5
CHARLES	Grenada	26-29/8/81		4
CHALMERS	Montserrat	26-28/8/81		3

OFFICER(S) TRAVELLING	COUNTRY	DATES	MAN/DAYS
ASHER	Antigua, St. Kitts, Montserrat	7-16/9/81	10
CHARLES	Antigua	27-30/9/81	4
CHARLES	Montserrat	30/9-2/10/81	3
GOUGH	Dominica	6-10/10/81	5
ASHER	Grenada, St. Vincent	12-17/10/81	6
CHALMERS	St. Vincent	16-18/10/81	3
CHARLES	Dominica	20-22/10/81	3
CHALMERS	Montserrat	21-23/10/81	3
ASHER	St. Vincent	22-23/10/81	2
CHARLES	St. Kitts	23-26/10/81	4
CHARLES	Grenada	28-31/10/81	4
GOUGH	St. Lucia	2-5/11/81	4
CHARLES	St. Kitts	18-21/11/81	4
CHARLES	Montserrat	21-25/11/81	5
ASHER	Belize	22-28/11/81	7
CHARLES	Antigua	25-28/11/81	4
CHALMERS	Montserrat	7-9/12/81	3
CHALMERS	St. Vincent	16-18/12/81	3
GOUGH	St. Vincent	18-21/1/82	4
CHARLES	Grenada	19-21/1/82	3
CHARLES	Antigua St. Kitts Montserrat	31/1-6/2/82	7
ASHER	Dominica	2-9/2/82	8
CHALMERS	Montserrat	24-26/2/82	3
ASHER	St. Lucia	1-4/3/82	4
GOUGH	Dominica	1-5/3/82	5
CHARLES	Antigua St. Kitts Montserrat	22-26/3/82	5
CHARLES	Antigua St. Kitts Montserrat	14-16/4/82	3
GOUGH	St. Lucia	19-22/4/82	4
ASHER	Belize	24-29/5/82	6

OFFICER(S) TRAVELLING	COUNTRY	DATES	MAN/DS
CHARLES	Grenada	26-29/5/82	4
GOUGH	St. Lucia	2-5/6/82	4
CHALMERS	St. Vincent	7-8/6/82	2
GOUGH	Dominica	13-18/6/82	6
CHARLES	Antigua St. Kitts Montserrat	25-31/7/82	7
GOUGH	St. Vincent	16-18/8/82	3
CHARLES	Grenada	22-25/9/82	4
CHARLES	St. Kitts	29/9-1/10/82	3
CHALMERS	St. Vincent	12-15/10/82	4
CHARLES	St. Vincent	12/10/82	1
GOUGH	St. Lucia	13/10/82	1
CHARLES	Antigua	22-24/11/82	3
CHALMERS	Montserrat	23-26/11/82	4
GOUGH	Dominica	20-22/2/83	3
CHARLES	St. Lucia	11-15/4/83	5
			54

Appendix H

CDB/USAID CARIBBEAN EDUCATION DEVELOPMENT/
BASIC HUMAN NEEDS PROGRAMME

PROJECT SUPERVISOR'S MONTHLY REPORT

1. COUNTRY:..... 2. MONTH ENDING.....
3. PROJECT NAME:.....
4. IMPLEMENTING AGENCY:.....
5. METHOD OF EXECUTION:.....
6. PROJECT COMMENCEMENT DATE: ESTIMATED.....
ACTUAL.....

7. FINANCIAL
(a) Allocation: Original: $..... Additional: $.....
(b) Expenditure this reporting period: $.....
(c) Cumulative expenditure to end of period: $.....
(d) Claims submitted prior to end of period: $.....
(e) Claims submitted this period: $.....
(f) Total claims submitted to date: $.....
(g) Total reimbursement to date: $.....

8. EMPLOYMENT GENERATION
(a) Number of men employed:.....
(b) Number of women employed:.....
(c) Number of youth employed:.....
(d) Total number of man-days this month:.....
(e) Cummulative number of man-days to date:.....
(f) Amount spent on wages this month:$.....
(g) Amount spent on materials/equipment this month:$.....

9. PROJECT STATUS
(a) Description:.....
.....
.....
(b) Percent completion of components:.....
.....
.....
(c) Percent completion of project:.....
(d) Percent allocation spent:$.....
(e) Reasons for difference in (c) & (d) above:.....
.....
.....
(f) Estimated completion date: (I) original:..... (II) revised:.....

APPENDIX A(II)

10. GENERAL

(a) Financial:.....
.....
.....
.....

(b) Labour:.....
.....
.....
.....

(c) Materials:.....
.....
.....
.....

(d) Consultant's Performance:.....
.....
.....
.....

(e) Other:.....
.....
.....
.....

Date:.....

.....
Project Supervisor

Appendix I

SUPERVISION SUMMARY

his summary is ☐ Initial ☐ Routine ☐ Special

For Period Ended _____

Division _____

untry:	Project Name:	Loan No:
rrower:	Executing Agency:	Project Supervisor:
te of Approval	Date Agreement Signed	Date Conditions Precedent Satisfied

Amount of Loan	Original Amount	Additional Amounts	CCF	Amount Cancelled
US$	US$	US$ US$ US$	US$	US$

nding ources	USAID	OTHER SFR	OCR	OTHER*
	US$	US$	US$	US$

DATE OF FIRST DISBURSEMENT	GRACE PERIOD	TDD AGREED	ESTIMATED TDD	REPAYMENT ON PRINCIP STARTS ON:
		i) ii) iii) iv)		Day/Month/Year

CTION I: Project Description:

ection II: Type of Problem (explain in Section VI). If more than one problem, rank in order of critical importance beginning from the left.

F Financial M Management T Technical ☐☐☐☐ This Summary

L Legal D Debt Service O Other* ☐☐☐☐ Last Summary

		This Summary	Last Summary
TATUS	(1) Minor or no problem (2) Moderate Problem (3) Major Problem		
END	(1) Improving (2) Stationary (3) Deteriorating		

PLEMENTATION STATUS AND PERFORMANCE

TTINGS

Minor or no problems

Moderate Problems

Major Problems

Not Applicable

Disbursements		
Estimated Costs		
Expected T.D.D.		
Loan Conditions		
Project Finance		
Management		
Procurement		
Consultants		
Reporting		
Debt Service		
Other*		
Other*		

VELOPMENT IMPACT — EXPECTED BENEFITS

TINGS

Far exceeds expectation

More than appraised

Same as appraised

Less than expected

pecify

Employment Creation		
Foreign exchange savings/earnings		
Development of local skills		
Linkages within economy		
Regional Benefits		
Rate of Return		
Institution Building		
Other*		

SECTION III: Project Data	Completion of Implementation		T.D.D.		COST (US$)			Cumulative Disbursements to Last Quarter ended 19
	Month	Year	Month	Year	Total	Foreign	Local	
a) Appraisal Estimate								EST.US$
b) Last report (Est./Act.)								ACT.US$
c) Current Estimate/Act.)								

SECTION IV: Supervision	No. Visting Staff	No. of Days Spent	Date of Return	1. Period covered by report and 2. Date completed
This visit				1 2
Last visit				1 2

SECTION V: COMMENTS TO CLARIFY DATA IN SECTIONS III AND IV

SECTION VI: ELABORATE HERE ON ALL MODERATE AND MAJOR PROBLEMS INDICATED IN SECTION II

SECTION VII: SUPERVISOR'S RECOMMENDATIONS AND MANAGEMENT ACTION REQUIRED

SECTION VIII: Next two(2) years estimated quarterly disbursements on projects for which disbursement is incomplete beginning with the quarter for which the next supervision summary is due.

US$ QR 1	US$ QR 2	US$ QR 3	US$ QR 4
US$ QR 5	US$ QR 6	US$ QR 7	US$ QR 8

DATE: SIGNATURE OF SUPERVISOR

DATE: SIGNATURE OF ASSISTANT DIRECTOR

Appendix J

THE PRAGMA CORPORATION
815 WEST BROAD STREET
FALLS CHURCH, VIRGINIA 22046
(703) 237-9303

TELEX 899147 PRAGMA FSCH

August 26, 1983

Mr. Ed Valmonte
Acting Director of Projects
Caribbean Development Bank
P.O. Box 408
Wildey
St. Michael,
BARBADOS.

SUBJECT: Basic Human Needs and Caribbean Education Development Projects

Dear Mr. Valmonte:

We would greatly appreciate your furnishing us with the following materials at your earliest convenience:

1. Names of all CDB staff assigned to BHN/CED and their functions (i.e., the Project Management Team).

2. List of consulting firms, addresses and respective total amounts contracted from project funds.

3. Copy of guidelines and/or form(s) used in supervising consultants.

4. Copy of all forms used in monitoring sub-project implementation and date(s) of their first use.

5. Copy of the agreement signed with each participating country.

6. Two instances of CDB recommendations for modification of sub-project procedures or practices.

7. Copies of country plans for improved school maintenance submitted to CDB and dates of approval by CDB.

Thanking you in advance for your cooperation, I remain,

Very truly yours,

Alfred Fiks, Ph.D.
Team Leader

cc: Mr. Arthur Warman
USAID

Appendix K

CARIBBEAN DEVELOPMENT BANK

P.O. BOX 408 WILDEY
ST. MICHAEL BARBADOS W.I.
TELEPHONE: 61152 CABLE ADDRESS: "CARIBANK", TELEX WB 2287.

Our Ref: 27/2/44

1983-08-31

Dr. A. Fiks
Pragma Corporation
c/o USAID
Nicholas House
BRIDGETOWN

Dear Sir:

Basic Human Needs and
Caribbean Education Development Projects

We refer to your letter of August 26, 1983 addressed to Mr. E. Valmonte, Acting Director of Projects Department, on the above subject. The information requested is given below and in the attachments to this letter.

1. Names of CDB staff attached to BHN/CED Project and functions

   (a) Mr. Stephen Asher - Architect - assigned to cover all aspects of school construction and rehabilitation - period of employment - January 1980 to July 1982.

   (b) Mr. Robert Binger - Civil Engineer - assigned to cover other public infrastructure projects and assist in engineering aspects of school construction in the Windward Islands - period of employment - September 1979 to October 1980.

   (c) Mr. Morris Charles - Civil Engineer - assigned to cover other public infrastructure projects and assist in engineering aspects of school construction in the Leeward Islands - engaged on project for the period October 1979 to June 1983.

   (d) Mr. Carlson Gough - Civil Engineer - assigned to cover other public infrastructure projects and assist in engineering aspects of school construction in the Windward Islands - for the period February 1981 to September 1982.

   (e) Mr. W.S. Chalmers - Project Officer (Technical Assistance) - assigned to assist in implementation of reafforestation and soil conservation projects in St. Vincent and Montserrat - paid by CDB; travel from project budget.

A full-time secretary was provided and salary met from the BHN/CED budget; accounting services were coordinated by CDB's Finance Department.

2. The list of Consultants retained with number of projects and dollar value of contracts are given at Annex 1.

3. The Consultants listed at Annex 1 were retained by CDB and reported to CDB staff. The general form of agreement used, attached as Annex 2, prescribed the duties of the Consultants and outlined the extent of reporting under the conditions of contract. Monitoring of the performance of Consultants was done by CDB staff on their visits to the beneficiary countries. Reports on the performance of Consultants were issued at half-yearly intervals on the internal reporting format attached as Annex 3. In addition the Project Supervisors were asked to comment on the Consultants performance in their monthly reports, as per format at Annex 4.

4. CDB staff utilised country visits to monitor sub-project implementation. Findings were recorded in Back-to-Office Reports completed after each visit which reported on status, highlighted problems and recommended action where necessary (see example at Annex 5). A list of visits made by members of staff is attached at Annex 6. In addition the Consultants monthly reports, format attached at Annex 7, was required on all projects for which Consultants were retained and from July 1981 the Project Supervisors Monthly Report, Annex 4, was also used.

5. A copy of the typical agreement signed with each participating country is attached at Annex 8. All agreements were identical except for dollar amounts.

6. Two examples of CDB's recommendations for the modification of implementation procedures for sub-projects are given below:

   (a) Recommendation for engagement of a technical assistant to the Country Project Supervisor for Dominica to assist in sub-project implementation; and

   (b) Recommendation for establishment of local letter of credit in a beneficiary country to facilitate payments as compared to normal reimbursement procedure.

7. Copies of school maintenance plans submitted by countries are attached at Annex 9. This portion of the programme was the most difficult to implement due to the financial constraints in the countries which caused difficulties in meeting the matching contribution. An understanding of this difficulty is reflected in AID's Implementation Letter No. 3 of March 17, 1980, Paragraph (b), the intent of which was to enable the overall programme to progress based on the submission of school maintenance plans which although not meeting AID's requirements in full, were sufficiently detailed to be acceptable to meeting conditions precedent.

We hope the above adequately provides the information requested. If we can be of further assistance please do not hesitate to contact us.

Yours faithfully,

Carlson P. Gough
Project Officer (Infrastructure)

CPG/akb

Attachments