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COST-EFFECTIVENESS ANALYSIS

OF PROJECT HOPE

ENVIRONMENTAL HEALTH OFFICER TRAINING PROGRAM

SAINT LUCIA

(Conducted under Grant Agreement 538-0055
with USAID, dated August 30, 1980)

by

David A. Parker, M.P.A., M.P.H.
Princeton University

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EXECUTIVE SUMMARY

This study undertakes a systematic assessment of the costs for training of Environmental Health Officers (EHOs) in the program conducted by Project HOPE at the Morne Complex, Castries, St. Lucia under grant support from USAID. As a supplement to the Eighteen-Month Evaluation of Allied Health Manpower Training programs of Project HOPE in St. Lucia, and to previous estimates of EHO training expenses, this analysis had as its objectives:

1. To ascertain the full economic costs of EHO training, for the period August 30, 1980 to June 30, 1982.

2. To compare the cost-effectiveness of this training with that determined for similar programs in the region.

3. To examine the implications of these findings in regard to alternative strategies for program continuation and/or institutionalization.

Information was collected through interviews and review of records at offices of Project HOPE in Millwood, Virginia, and Castries, St. Lucia and at offices of USAID and other organizations in Bridgetown, Barbados, in November 1982. Constraints imposed by the short time period for this study and by the unavailability of much necessary data for other EHO training programs unfortunately limited the possibilities for comparative analysis. A methodology was developed for classifying component costs and for allocating and inputing cost values to all inputs identified for the EHO training program, in U.S. dollars. An output measure of "graduate-equivalent" students was adopted for use in the unit-cost calculation, which determined the full economic costs per student for training from all sources. Other program outputs, which would be included in a cost-benefit analysis, are noted qualitatively here.

Results of the analysis show on-going costs of $26,100 per student, confirming previous estimates which were also in this range. Of the total amount, 55 percent (or $14,400 per student) goes for recurrent expenses, the majority to student fellowships and to personnel ($5,900 and $5,500 per student, respectively). Fixed costs, principally for facilities contributed by the St. Lucian government and equipment, were $2,900 per student. Project HOPE support costs accounted for 34 percent of the total, or $8,800 per student. AID grant funds covered 52% of on-going expenses, including $900 per student in overhead. Start-up costs for the EHO program totalled approximately $154,000, or $11,200 per graduate. With some margin for error, these results are judged to be highly reliable. A large proportion of these levels of fixed and support costs may be traced to the circumstances surrounding the initiation of the program, and to subsequent reductions in the full scope of training activities in St. Lucia.

Costs of the EHO course are also examined in terms of a) direct costs under the AID program grant, b) the costs of other programs conducted at the Morne Complex, and c) options for institutionalization or transfer of the training program. Strategies which reduce reliance on expatriate personnel may have a significant effect on the economic costs of training. It has not been possible to thoroughly compare the cost of St. Lucian EHO training with that of similar programs in the region, such as Barbados Community College, because of the unavailability of complete data. Preliminary evidence indicates that the full economic costs of HOPE training remain substantially greater than those for EHO instruction at BCC, for example, even when an additional year of pre-science instruction is allowed for LDC students at the latter school. Comparison of estimated direct costs to the AID OPG in the two programs shows approximate equivalence: $13,500 per student for St. Lucia vs. $10,500-$15,800 for BCC. Accordingly, decisions about the location of EHO training must be made in large measure on the basis of criteria other than direct cost.

A major conclusion of this analysis is that cost concerns cannot be separated from the historical, political, and professional considerations which underly the operation of the St. Lucia program. The diversity of perspectives represented by the persons interviewed for this study cannot be readily integrated into recommendations for action which are based on cost-effectiveness alone. In combination with response to the many issues which have been raised in the Eighteen-Month Evaluation and other discussions, however, this assessment of cost-effectiveness patterns may contribute to informed decisions about the allocation of USAID resources.

I. INTRODUCTION

In a period of constrained budgets and continuing reassessment of development priorities, cost considerations emerge as a central element in U.S. foreign assistance decision-making. Cost-effectiveness analysis (CEA) is a useful means of quantifying the balance between program inputs and outputs, in this case for the training of Environmental Health Officers (EHOs) for LDCs in the Eastern Caribbean region. At one level, CEA provides an accounting of the resources used to achieve a particular set of program results, i.e., the training of a cadre of EHOs to meet LDC needs. Through comparision of the costs of training EHOs under similar programs, CEA further offers a widely acceptable basis for rationalizing the allocation of resources among competing alternatives.

This study arose from concerns on the part of USAID, Project HOPE, and outside observers over a potential lack of correspondence between the EHO training conducted by Project HOPE in St. Lucia and the long-term configuration of regional needs and resource availability of such training. The apparently high cost of training EHOs and other categories of health workers in St. Lucia formed a major focus of the first-phase evaluation of the Project HOPE program carried out in the Summer of 1982. Reviews of that evaluation, however, raised questions over the completeness of this preliminary CEA and its comparability with similar analyses of other training programs.

The present study was undertaken with the following objectives:

1. To ascertain the full economic costs for the training of EHOs in the St. Lucia program for the period August 30, 1980 to June 30, 1982.

2. To compare the cost-effectiveness of this training with that determined for similar programs in the region.

3. To examine the implications of these findings in regard to alternative strategies for continuation and/or institutionalization of the St. Lucia program.

Within this scope of work the following further questions were specifically to be addressed:

- What have been the direct costs to the USAID grant[1] for specific items in the St. Lucia EHO training program budget?

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[1] Unless otherwise indicated, "AID Costs" refer throughout this report to expenditures incurred under the operational program grant (OGP) agreement between USAID and Project HOPE, dated August 30, 1980.

- How do these EHO component costs compare with those for other programs carried out at the St. Lucia training center?
- What is the scale of start-up costs associated with the training of EHOs and other health workers?
- What elements of the costs for training of EHOs are associated with the operating characteristics of Project HOPE, and of PVOs more generally?
- What additional outputs are reflected in the costs per student trained in St. Lucia?
- How do the cost-effectiveness results relate to other considerations in the evaluation of EHO training for the Eastern Caribbean region?

The study has been conducted through interviews and a review of records at the HOPE Center in Millwood, Virginia, at the USAID Regional Development Office for the Caribbean in Bridgetown, Barbados, and at the Morne Complex training center in Castries, St. Lucia. The three-week period available for the study, while adequate to obtain a detailed accounting of the costs of the St. Lucia program, did not permit fully comparable data to be assembled for other programs of interest, such as those at Barbados Community College or the University of the West Indies campus in Jamaica. It also did not allow the integration of this analysis into the comprehensive evaluation of training carried out under this program grant agreement (completed in November 1982) as would be desirable for a fuller assessment of the significance of these results. With these qualifications, this report is presented as an input to AID's decisionmaking process and to future studies concerning this program.

II. METHODOLOGY

The methodology of cost-effectiveness analysis, and by implication the interpretability of its findings, rests on three principal requirements:

- That all economic costs can be isolated, identified, and quantified;
- That program characteristics relevent to the utilization of inputs and the production of outputs are specified, and that allowance is made for their relative comparability in multiple program evaluation; and
- That all program outputs are identified and quantified to the extent possible, so that unit-cost calculations may be made.

This section briefly describes the approach taken in addressing these issues in this study.

A. Cost of Inputs

The first requirement of CEA is that the full economic costs to all sources be identified and quantifiable in terms of a common "dollar-value" unit. For the St. Lucia program, relevant sources of inputs include the USAID OPG fund, Project HOPE's own resources; the host Government of St. Lucia[2]; and the training program students themselves.[3] In principle, of course, the source of funding is irrelevant to assessment of full economic costs, especially since these sources may shift over time and they are likely to vary among different programs. The distinction among sources is maintained for the analysis of the St. Lucia program, however, because of the varying opportunity costs of resources from different sources. In this perspective, for example, costs to Project HOPE for donations made in-kind, or the possible lack of commensurately productive uses to which host inputs might be put, may be seen to influence the level at which these resources are provided.

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[2] Certain "host" inputs for facilities were provided by the Rockfeller Foundation Research and Control Project through December 1981, at which time the Morne Complex was fully turned over to the St. Lucian government. For convenience, all host costs are considered to have been incurred by the GOSL.

[3] Some students in these training programs have received additional support from other sources, particularly in the form of government stipends. Such assistance was minimal for EHO students, and is in any event included within total of "student costs".

Training program expenditures are separately identified as falling within the categories of start-up, or "developmental," costs, and on-going, or "operational," costs. Cost-effectiveness comparisions are chiefly concerned with on-going costs, which reflect resource requirements for training once a particular program has been established. On-going costs are further separated into recurrent costs, which are incurred in/overall proportion to the number of students being trained, and fixed or "non-recurrent" costs, which, with allowance for program scale, are incurred regardless of the number of students.

Support costs of Project HOPE, covering program assistance, headquarters staff, and overhead expenses, are applicable to both of these areas but cannot be effectively separated, and so are included as a third grouping.

The on-going costs of EHO training are organized according to the following categories:

1. Recurrent Costs

   a) Personnel
      - Faculty
      - Program Management
   b) Supplies
   c) Transportation and Travel
   d) Operation and Maintenance
   e) Communication
   f) Student Support
      - Subsistence (housing, meals, local transportation, etc.)
      - Home Travel

2. Fixed Costs

   a) Facilities
   b) Equipment
   c) Library
   d) Supporting Activities
   e) Miscellaneous (insurance, etc.)

3. Support Costs[4]

For the study of relatively new and inclusive programs such as that in St. Lucia, it is useful to begin by considering start-up costs as well. Start-up costs may include any of the items listed previously, although the on-going categories of "recurrent" and "fixed" costs are combined within the overall designation of "direct costs."

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[4] Subcategories within most of these areas included in the detailed tables of cost estimates presented in Annex 2.

Additional information is necessary to determine the value of certain types of inputs with the methods used to assign or input costs needing to be consistent across all programs that are being compared. Such inputs include resources shared with other programs or activities (e.g., jointly used buildings, faculty, etc.); inputs obtained at non-market rates (e.g., use of government facilities, other subsidies); and donations in-kind (e.g., books, equipment, and supplies).[5] The cost of substitute inputs in certain categories must also be estimated, to permit comparison of program alternatives (e.g., of the potential replacement of expatriate personnel by national staff).

All costs are converted to U.S. dollars for the analysis. Values were imputed to non-dollar items using relatively conservative guidelines. Somewhat greater judgement was necessary to allocate shared costs between the "start-up" and "on-going" categories, and between the different programs being conducted at the Morne Complex. The accounting system used by Project HOPE, which was developed to separate expenses of OPG-funded activities from those of Pharmacy training and other non-OPG activities, was not designed to distinguish the costs incurred by different programs and start-up/on-going periods within this grant. As a result, the process of cost allocation occupied a major portion of this exercise.

Essentially, the procedure followed was to identify the costs to AID and to Project HOPE for the Dental Hygienist (DHS) and Environmental Health Sciences (EHS, including both EHO and Environmental Health Aide-EHA) programs, using information from the quarterly financial reports which are submitted by Project HOPE to AID. Costs were assigned to DHS or EHS based either on knowledge of specific items involved, or on the proportion of total faculty days served in the two programs for each of the quarters under study.[6] Start-up and on-going costs were then distinguished according to the quarter in which student training began

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5 Due to a lack of information and in order to maintain consistency, the cost of three types of inputs in these categories have been excluded from the analysis: a) clinics and sites of field training (which are employed on an intermittent basis and are not "rented"); b) expatriate labor supplied at below-U.S. market rates (here, actual salary levels are used); and c) administration and other program activities by staff of the U.S., St. Lucian, and other participating governments. Annex 3 provides greater detail on these points.

6 This is also the method that is used by Project HOPE to assign jointly incurred costs among the Pharmacy and other Morne Complex training programs, an approach that appears to be reasonable. An alternative approach would have been to allocate costs based on the number of student-days in the different programs; the results would be very similar.

(April 1981 for EHS and September 1981 for DHS). Books and certain other fixed cost items were generally considered as start-up expenditures regardless of when they were obtained.[7]

Start-up costs were not individually allocated between EHO and EHA training in view of their practical inseparability. A provisional distinction is made, however, based on the relative proportion of students-months among the two programs (278/398 or 70% percent to EHO, the remaining 30% to EHA). On-going costs were allocated on the basis of an overall 1:1 faculty ratio during the three quarters in which EHA training was conducted (April to December 1981). Quarterly subtotals were then summed, to obtain a reasonably precise set of component costs for the EHO program. Host Government inputs were calculated in a similar way, using data provided by St. Lucia Project HOPE staff.[8]

B. Program Characteristics

To clarify precisely what is being evaluated or compared in CEA, it is important that major program features influencing the process and the outputs of EHO training be identified. Although specific program features never by themselves justify a particular pattern of expenditures or outputs, their recognition may permit findings to be analyzed within a broader context. Thus, while not strictly a technical element of CEA, such an accounting makes it more likely that a realistic assessment can be made of the significance of unique program features and of differences between programs that are being compared. To the extent that external conditions have changed or alternative configurations have been explored, implications may then be drawn in terms of specific component costs for program extension or redesign.

With regard to EHO training, a number of factors may at least partially explain the potentially high cost/output performance of the St. Lucia center. As described in the Eighteen-Month Evaluation of Project HOPE

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7 Because of the relatively short time period under study and the potential accounting difficulties, equipment and library books are treated as items of current expenditure rather than being depreciated or amortized over time. This procedure leads to a technical overstatement of start-up costs and of fixed costs relative to recurrent costs, although the effect is mitigated by equipment rental and the replacement of some fixed assets.

8 The methods used to assign and impute costs are more fully documented in Annex 3, with original working tables also available. Little additional effort was required to arrive at the costs of the St. Lucia DHS and EHA training programs, and these results are presented in Chapter III and Annex 4.

grant activities, various changes appear to have taken place which may indicate that the original needs for a "transfusion" of allied health workers are in fact passing, possibly earlier than had been expected.

The availability of this recent evaluation greatly reduces the need for discussion of these issues in the context of the present study. It is appropriate to emphasize, however, that the cost per unit output of a "transfusion" effort, as represented by training in St. Lucia, is much higher than that which is found for conventional on-going programs. Estimates are made in Chapter III of the expected cost-effectiveness of the St. Lucia program with adjustments made for the substitution of local inputs in selected cost categories.

C. Program Outputs

The identification and measurement of all program outputs is necessary to establish the "denominator" of cost-effectiveness, especially for comparison with similar programs. In view of the configuration of EHO training -- a relatively long duration, multiple classes running concurrently, and joint operation with other training activities -- it was judged that the simplest possible unit of output, the number of fully-trained EHOs produced, was not a fully satisfactory measure. Instead, the "graduate-equivalent" (GE) EHO unit was adopted, to represent the number of students who would have completed training had the total student-months of instruction been devoted to generating a single group of EHOs by the end of the period under study. The effective size of the EHO output is/thus equal to the number of enrolled students multiplied by the proportion of their training which was completed by June 30, 1982. By summing the numbers obtained in this way for the two EHO classes, a total of 13.8 "graduate-equivalent" EHOs was determined. This figure is divided into total costs to arrive at unit costs per trained EHO.[9]

This calculation involves two assumptions about EHO training which should be noted. First, it assumes that the intensity of input utilization is roughly constant over the life of the program. In reality, the first (19-month) class was probably more input-intensive than the second (23-month) class, and a somewhat greater proportion of resources is likely to be used at the outset of each course, which is over-represented here. The second assumption, most relevant to cost projections and to comparisions among programs, is that there are no economies of scale in running classes of larger size or in running multiple classes at the same time. Such economies are likely to exist, leading to higher unit costs for smaller programs. The numerical significance of these conditions to

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[9] Output levels were derived similarly for the EHA and Dental Hygienist training programs, of 40 (the student total) and 5.3 "graduate-equivalent" trainees, respectively. See Annex 3 for detail.

the present analysis is difficult to determine; overall, however, the observed cost-effectiveness of St. Lucia training would be somewhat greater if the evaluation had covered a longer time period, or if the program were larger in size.

The relative comparability and simplicity of the GE measure argue strongly for its use although mention should be made of several further issues concerning program output. If graduates were free to return or not to their home island, it might be useful to count the number of returning EHOs trained in programs under study, in order to reflect net output relative to EHO "productivity" and the meeting of country needs. However, students in this type of program are usually bonded to return to work for their government for a given period of time, usually equal to that of the training. Hence, the effects of the location of training, i.e., in an LDC rather than in Barbados, or other more-developed islands, are likely to be small over the short term in this regard, and longer-run assessments would be conjectural at this point.[10]

Potential "multiplier effects" might also be included within the calculated outputs, showing future students to be trained either by current students qualified to be trainers or by national counterpart staff trained through the St. Lucia program. To be counted in CEA, however, such effects must be at least to some degree realized rather than being merely potential, and in general none yet appear to be directly attributable to the program under study.[11]

For comparative purposes, graduates of the St. Lucia program are assumed to be equivalent to EHOs trained in other programs. It was not possible to assess the "quality" of the St. Lucian graduates, in order to determine some more refined index of output. While, on the one hand, the admission requirements of the HOPE program do not meet the standard of 5"O"-levels set by the Caribbean Association of Public Health Inspectors (the regional professional body), all but one of the St. Lucia students have passed the Royal Society of Health certifying examination, and the majority of recent entrants are reported to meet the CAPHI guidelines.

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[10] This does not rule out possible effects of LDC location in improving the appropriateness of the St. Lucian training, an evaluation which lies outside the scope of this study.

[11] Four Antiguan students were in fact given additional instruction to permit them to train EHAs in the future, although this was not a formal part of the EHO program. Mr. Allen Philogene, the St. Lucian counter-part EHO instructor, received his teaching training prior to the period of the AID grant. Cost benefit analysis could incorporate future outputs in its calculation, discounting their value ot arrive at a "net present value" level; that approach is inappropriate to this context.

As noted in the Eighteen-Month Evaluation, a higher standard would be desirable for the St. Lucia program, and this has received continuing attention by the Program Council, Project HOPE, and other observers. In the absence of consensus over the significance of this issue for the career mobility or job performance of EHO graduates, however, no quantitative estimate can be made of its implications for EHO "comparability."

Finally, in addition to the production of EHOs, the St. Lucia program has clearly yielded other concrete outputs. However, these can be related most closely to "start-up" activities -- e.g., the development of an environmental health curriculum, teaching bank, and reference library -- and, while deserving of explicit mention, are essentially standard outputs of a start-up phase.[12] Others may be traced to "on-going" expenditures, but are not readily quantifiable -- e.g., the maintenance of LDC training capability at the site.[13] Overall, few adjustments from the sources to the EHO "output" appear to be necessary, and the cost-effectiveness calculation remains relatively straightforward. Results are presented and discussed in the following chapter.

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[12] Allowance in the start-up figures was made for the provision of a health sciences library collection to the Government of St. Lucia. This resulted in a deduction of some $322,000 from the costs of the Project HOPE training programs.

[13] Again, this and other imputed outputs properly fall within the domain of cost-benefit analysis, but they receive only qualitative mention in CEA.

III. DISCUSSION OF RESULTS

A. St. Lucia Program Costs

Following the methodology that has been outlined, tables were prepared showing the allocation of costs by source to the different budget categories. These figures were then converted into costs per student trained in the EHO and other training programs. Basic results are presented in the tables which appear below.[14]

As shown in Table 1, the central finding of this study is that the St. Lucia EHO training program has had on-going costs of approximately $26,100 per student. Of this amount, some $14,400 or (55%) goes for recurrent expenditures, $2,900 (or 11%) goes for fixed costs, and the remaining $8,800 (or 34%) is allocated to Project HOPE support or overhead. This level is consistent with estimates that have been made in previous studies of this training program, which have shown per-student costs in the range of $24,000 to $27,000.[15] Start-up costs for the program totalled $154,000, equivalent to approximately $11,200 per student trained.[16] The grand total, as an indicative figure, reflects about $37,200 in expenditures from all sources per EHO student trained.

These data provide a number of avenues for extending the larger evaluation exercise, by showing the contribution of various components to overall program costs. Within the category of on-going costs, student support and travel forms the largest single operational cost, at $5,900 per student or 23% of the total. Expenditures for personnel are a second major recurrent cost item, absorbing 13% of the on-going budget for faculty and 9% for program management ($3,300 and $2,200 per student, respectively). Transportation and travel (not including student travel) represents an additional 7% of on-going costs ($1,700 per student), with some $500 per student going for the relocation and home leave for expatriate personnel. Fixed costs are made up chiefly of allocations for

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[14] Detailed total and per-student cost tables are included as Annex 2 of this report.

[15] Estimates have been made by PAHO (June 1982) and by Field et al., and are summarized in the July, 1982 draft evaluation by the latter authors.

[16] This start-up cost figure represents a proportionate share of the $220,000 in total start-up expenditures for the EHO and EHA programs combined, an allocation which is somewhat difficult to make in practice. Per-student start-up costs must be interpreted with caution because they are highly sensitive to the number over which the fixed total is spread.

TABLE 1

FULL ECONOMIC COSTS OF EHO TRAINING PROGRAM IN SAINT LUCIA FROM AUGUST 30, 1980 TO JUNE 30, 1982 PER STUDENT ($US AND % OF TOTAL)

	ON-GOING COSTS		START-UP COSTS		TOTAL	
Recurrent Costs						
Faculty	3,336	(12.8)	1,156	(10.4)	4,492	(12.1)
Program Management	2,199	(8.4)	580	(5.2)	2,779	(7.5)
Supplies	905	(3.5)	143	(1.3)	1,048	(2.8)
Transportation and Travel	1,692	(6.5)	1,172	(10.5)	2,864	(7.7)
Operation and Maintenance	214	(0.8)	81	(0.7)	295	(0.8)
Communications	146	(0.6)	152	(1.4)	298	(0.8)
Student Support and Travel	5,939	(22.8)	---		5,939	(16.0)
Subtotal Recurrent Costs	14,431	(55.4)				
Fixed Costs						
Facilities	1,158	(4.4)	162	(1.5)	1,320	(3.5)
Equipment	1,106	(4.2)	1,168	(10.5)	2,274	(6.1)
Library	471	(1.8)	812	(7.3)	1,283	(3.4)
Supporting Activities	57	(0.2)	202	(1.8)	259	(0.7)
Miscellaneous	72	(0.3)	4	(---)	76	(0.2)
Subtotal Fixed Costs	2,864	(11.0)				
Subtotal Direct Costs	17,295	(66.4)	5,632	(50.5)	22,927	(61.6)
Support Costs	8,769	(33.6)	5,525	(49.5)	14,294	(38.4)
TOTAL COST*	26,064	(100.0)	11,157	(100.0)	37,221	(100.0))

* Figures may not add to totals due to rounding.
SOURCE: Project HOPE budget data; author's calculations.

facilities (4% of the total or $1,200 per student, reflecting in large measure the contribution of space at the Morne Complex by the St. Lucian Government) and equipment (another 4%).

As would be expected, start-up costs were more heavily directed towards fixed cost-type items, although the essential pattern of distribution is similar.[17] Approximately 10% of this total (or about $1,200 per trainee) went each to faculty preparation, travel, and program equipment expenditures. Slightly smaller amounts were spent for the program library (7%, or $800 per student), and for management activities (5%, or $600 per student.

Markedly large proportions of the total cost in these two categories are allocated to support costs for the HOPE Center -- 34% of on-going costs and 50% of start-up costs, or about $14,300 per student overall.[18] This level of overhead may well be considered high, particularly during the start-up phase; however, a full assessment on this point would have to take note of comparable rates charged by other private voluntary organizations as well as an understanding underlying this project grant agreement, and unfortunately neither of these is within the scope of this study. However, some light is shed on this issue by Table 2, in which the economic costs of EHO training are identified according to the source of funds. Here it is seen that approximately 90% of support costs are borne by Project HOPE, leaving only 4% of on-going costs (or $900 per student) to be for HOPE overhead paid for by the AID program grant. It was not possible to determine the actual value of HOPE Center staff contributions to the St. Lucia program. On balance, while overhead costs clearly play a large role in the expenditures for EHO training in St. Lucia, much of the total cost calculated must be attributed to Project HOPE's accounting procedures and to its overall program configuration.

Continuing with Table 2, it is seen that a slight majority (52%, or $13,600 per student) of on-going cost are borne by USAID. Most of these fall in the recurrent category, for about $11,700 per trainee. Project HOPE's non-overhead contribution to on-going costs (7% of total on-going costs) is split between $1,000 per student in (recurrent costs chiefly for personnel) and $800 per student in fixed costs (mostly for equipment). A similar proportion of total inputs is provided by the host government, for the salary of the counterpart EHO instructor (most of the $900 per student in recurrent costs) and for program facilities. Student subsistence and travel expenses ($6,000 total) are covered almost

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[17] As noted previously, start-up costs are not formally identified as "fixed" or "recurrent", since there is technically nothing to "recur". The category of "direct costs" refers to operational, as distinguished from overhead, types of expenses.

[18] These amounts represent a proportional allocation to the St. Lucia EHO program based on its share of all HOPE professional staff.

TABLE 2

ECONOMIC COSTS OF EHO TRAINING
SAINT LUCIA
PER STUDENT, BY SOURCE
($US AND % OF TOTAL)

	USAID OPG	PROJECT HOPE	GOVT. OF ST. LUCIA	STUDENT	TOTAL
On-Going Costs					
Recurrent	11,697 (44.9)	1,033 (4.0)	888 (3.4)	813 (3.1)	14,431 (55.4)
Fixed	982 (3.8)	820 (3.1)	1,062 (4.1)	---	2,864 (11.0)
Support	920 (3.5)	7,849 (30.1)	---	---	8,769 (33.6)
Subtotal, On-Going	13,598 (52.2)	9,703 (37.2)	1,951 (7.5)	813 (3.1)	26,064 (100.0)
Start-Up Costs					
Direct Costs	3,320 (29.8)	1,817 (16.3)	494 (4.4)	---	5,632 (50.5)
Support	491 (4.4)	5,034 (45.1)	---	---	5,525 (49.5)
Subtotal, Start-Up	3,811 (34.2)	6,851 (61.4)	494 (4.4)	---	11,157 (100.0)
TOTAL	17,409 (46.8)	16,554 (44.5)	2,445 (6.6)	813 (2.2)	37,221 (100.0)

Figures may not add to totals due to rounding.
SOURCE: Project HOPE budget data; author's calculations.

entirely by the USAID fellowship; however, an estimated $800 (3% of total costs) is left to the student.[19] Of start-up costs, 34% of the total was borne by AID ($3,800 per student); 61% was provided by Project HOPE, of which about $1,800 per student went for on-site expenditures; and the host government contributed some $500 per student (4% of the total), again chiefly for faculty and facilities.

Table 3, organized similarly to Table 1, shows the contribution of basic cost elements but focuses on the per-student costs paid by the USAID grant. These costs are presented because, for several reasons, they may be considered to form a more realistic basis than full economic costs for AID resource allocation decisions. The level and distribution of inputs provided by Project HOPE and by the host government may be substantially different from the amounts required for EHO training; they may vary, for example, with the availability of donated items or of office space, leading to a potentially wide range of input combinations to the program. It in fact appears that much of the effect of Project HOPE contributions has been to "enrich" the Morne Complex program, to compensate for its lack of an institutional base. AID resources, in contrast, are generally used for necessary costs which must be met at market rates.[20] In the EHO program, AID funds prove to be used chiefly for recurrent costs. The largest portion of these (38% of the total, or $5,100 per student) go for fellowships and are paid directly to students. The next largest items are faculty costs (20%, or $2,700 per student); transportation and travel (12%, or $1,700 per student), and management personnel (9%, or $1,200 per student). The 7% of AID resources for fixed costs ($1,000 per student) go principally for equipment and library subscriptions. Most AID start-up costs under ($4,000 per student) went for travel (31%), faculty (25%) and equipment (10%).

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[19] This figure is based on an estimate of $279 per month living expenses in Castries, made by Project HOPE staff, which is some 10% higher than the level provided for under the training grant. The amount primarily reflects the costs to 3 St. Lucian students in the second EHO class, who share a single stipend. Annex 3 and Table 3-1 show the components of student living costs and their treatment under the program fellowship.

[20] The terms of the grant agreement between AID and Project HOPE are not entirely clear on this point, except for the limitation on expenditures outside of the program budget. Essential items not available through non-market means must be obtained by direct purchase, so the demarcation between inputs is somewhat arbitrary. The rate at which the OPG budget has been expended is an important question in this regard, but one which lies outside of the direct scope of this analysis.

TABLE 3

COSTS TO AID (OPG) OF EHO TRAINING
SAINT LUCIA
PER STUDENT ($US AND % OF TOTAL)

	ON-GOING COSTS		START-UP COSTS		TOTAL	
Recurrent Costs						
Faculty	2,666	(19.6)	956	(25.1)	3,622	(20.8)
Program Management	1,195	(8.8)	155	(4.1)	1,350	(7.8)
Supplies	889	(6.5)	143	(3.8)	1,032	(5.9)
Transportation and Travel	1,674	(12.3)	1,172	(30.8)	2,846	(16.3)
Operation and Maintenance	---		---		---	
Communications	146	(1.1)	152	(4.0)	298	(1.7)
Student Support and Travel	5,126	(37.7)	---		5,126	(29.4)
Subtotal Recurrent Costs	11,697	(86.0)				
Fixed Costs						
Facilities	---		---		---	
Equipment	465	(3.4)	381	(10.0)	846	(4.9)
Library	391	(2.9)	156	(4.1)	547	(3.1)
Supporting Activities	57	(0.4)	202	(5.3)	259	(1.5)
Miscellaneous	69	(0.5)	4	(0.1)	73	(0.4)
Subtotal Fixed Costs	982	(7.2)				
Subtotal Direct Costs	12,679	(93.2)	3,320	(87.1)	15,999	(91.9)
Support Costs	920	(6.8)	491	(12.9)	1,411	(8.1)
TOTAL COST*	13,598	(100.0)	3,811	(100.0)	17,409	(100.0)

* Figures may not add to totals due to rounding.
SOURCE: Project HOPE budget data; author's calculations.

Comparison of EHO training with other programs conducted at the Morne Complex provides a further approach to assessing cost-effectiveness, as shown in Table 4. Data on the Environmental Health Aide (EHA) and Dental Health Services (DHS) courses, also supported under the grant to Project HOPE, tend to confirm the cost pattern that is observed for EHO training. Because these programs shared the great majority of resources, including facilities, management, and equipment, it may be expected that input utilization and operating characteristics will be similar, as will the budget breakdowns.[21] Yet due chiefly to differences in course duration and specific resource requirements, substantially different cost-effectiveness outcomes are achieved for programs.[22] The three ten-week EHA classes had start-up costs of approximately $1,700 per student, of which 51% (or $830 per student) went for direct costs and the remaining 49% went for overhead expenses. On-going costs, totalling $3,500 per student, were principally recurrent in nature with most going for faculty and transportation. Fixed costs were relatively minor, accounting for 7% of the total ($200 per student). Comparative evaluation was not possible, but on the whole the combined $5,000 cost per graduate appears to be a reasonable cost for training.

The costs for training dental personnel in St. Lucia are substantially greater than those for the other HOPE programs. These DHS figures refer to the combined experience of the dental hygienist course (completed in September 1982) and dental nurse training (which was transferred to Trinidad after 8 months of operations in May 1982). Start-up costs amounted to $21,000 per student, of which the smallest proportion of any costs under the HOPE grant (23%) went for support costs. The total includes over $5,000 per student in donated clinic equipment. On-going costs were $31,400 per student, including $15,300 for recurrent expenses.[23] Much of the high cost of dental students is clearly the result of low student enrollment and large investments in equipment and personnel. This analysis is extended in Annex 4.

The total costs of training activities in St. Lucia attributable to all sources are summarized in Table 5. Of AID's approximately $414,000 in inputs over the period under study, 29% or $118,400 were used for start-up expenses, including $75,000 for EHS. 70% of AID's contribution

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21 Much of the similarity in relative component cost levels results from the use of a joint accounting system, from which program expenditures has to be allocated on a formula basis. Of greater interest here are differences in the scale of resource utilization among the programs.

22 These factors may also have led to different intensities of resource utilization, but evidence from program staff does not point in this direction.

23 Fixed costs are underestimated here, since the dental students did not use classroom space but instead worked in a government clinic, for which costs were not charged or assigned.

TABLE 4

COMPARISON OF FULL ECONOMIC COSTS OF
EHO, EHA, AND DHS TRAINING
SAINT LUCIA
PER STUDENT ($US AND % OF TOTAL)

	EHO	EHA	DHS
Number of Classes	2	3	1
Class Duration	21 months (average)	10 weeks	13 months (DH)[1] 23 months (DN)
Date Started	5/81	4/81	9/81
Number of Students Enrolled	29	40	8
Number of G.E. Students[2]	13.8	40	5.3
On-Going Costs			
Recurrent	14,431 (55.4)	2,041 (59.2)	15,320 (48.8)
Fixed	2,864 (11.0)	234 (6.8)	3,314 (10.6)
Support	8,769 (33.6)	1,172 (34.0)	12,746 (40.6)
Total, On-Going	26,064 (100.0)	3,447 (100.0)	31,380 (100.0)
Start-Up Costs			
Direct	5,632 (50.5)	833 (50.5)	16,065 (76.6)
Support	5,525 (49.5)	817 (49.5)	4,914 (23.4)
Total, Start-Up	11,157 (100.0)	1,650 (100.0)	20,979 (100.0)

NOTES: 1. Dental Hygienist and Dental Nurse programs, respectively.
2. See text for explanation of "graduate-equivalent" measure.

SOURCE: Project HOPE budget data; author's calculations.

TABLE 5

TOTAL COSTS FOR TRAINING ACTIVITIES UNDER
AID GRANT TO PROJECT HOPE
ST. LUCIA
AUGUST 30,1980 TO JUNE 30, 1982 ($US)

	AID OPG	HOPE	GOSL[1]	STUDENT[1]	TOTAL
PROGRAM COSTS					
Start-Up					
EHS	75,138	135,065	9,743	---	219,946
DHS	43,293	66,617	1,280	---	111,190
Subtotal Start-Up	118,431	201,682	11,023	---	331,136
On-Going					
EHO	187,651	133,898	26,918	11,215	359,682
EHA	43,103	50,493	10,966	33,333	137,895
DHS	60,756	80,994	7,013	17,550	166,313
Subtotal On-Going	291,510	265,385	44,897	62,098	663,890
SUBTOTAL, PROGRAM COSTS	409,941	467,067	55,920	62,098	995,026
Other Items					
Health Science Library[2]	5,000	317,456	---	---	322,256
Donated Services[3]	---	25,663	---	---	25,663
TOTAL EXPENSES	414,941	810,086	55,920	62,098	1,343,045
BUDGET REPORT[4]	413,3885	810,090			

NOTES:
1. Government of St. Lucia inputs and costs to students estimated, based on information provided by Project HOPE staff, St. Lucia.
2. Estimated value of books provided to Castries Central Library through St. Lucia Ministry of Health, plus freight cost.
3. Reflects difference between "market value" and actual salary of dental educator, included by Project HOPE but omitted from analysis for reasons of consistency.
4. Amounts shown on Financial Status Report, dated August 31, 1982.
5. Variation from "total expenses" reflects adjustment in support costs allocated to AID (see text).

SOURCE: Project HOPE budget data; author's calculations.

went for on-going costs, including $187,700 (45% of the total) to EHO training. HOPE"s total recorded inputs were less oriented to on-going costs; of $810,000 overall, 25% ($201,700, somewhat greater than the comparable AID amount) went for program start-up; an additional 33% ($265,400, or about the same as AID inputs here) were used for on-going expenses, while a full 39% ($217,500) went for books that were donated to the St. Lucian government. These AID and HOPE totals computed by individual programs are seen to correspond closely to the amounts listed in HOPE budget reports for that period, with adjustments made to the base for the cost-effectiveness calculation.

Inputs from the Government of St. Lucia and students (or other sources) to the St. Lucian training were much smaller than those by AID and HOPE, at about $60,000 each. 20% of host inputs ($11,000) was used during program start-up, with the remaining amount ($45,000) going for on-going costs. Nearly half of all St. Lucian inputs were used for on-going expenses of EHO training ($27,000, or 48%). Resources provided by students beyond the coverage of program stipends were concentrated in the EHA and DHS courses; given the relative adequacy of fellowship levels in the EHO program, only 18% ($11,200) of the total came from EHO students (or other sources). Of the total inputs to training-related activities, estiamted at $1,343,000 during the 21-month period ending in June 1982, 74% ($995,000) went for program costs, including $664,000 (49%) for on-going expenses, and within these, $360,000 (27% of the total) were used for EHO training.

B. Comparison of Program Alternatives

Two options have been suggested as alternative means of providing the training that is currently being given at the Morne Complex. These -- institutionalization of the program in St. Lucia, and transfer of students to existing training institutions in the region -- represent a long-term response to the demand for EHO graduates by Eastern Caribbean LDCs, in contrast to the "transfusion" approach that was initially taken by AID and Project HOPE. As noted previously, a number of factors have emerged to recommend reconsideration of the decision to begin a third 2-year class of EHO students in St. Lucia. Such factors might include: a greater capacity to train EHOs at existing schools than was formerly the case; improved student qualifications; a potentially greater interest on the part of LDC governments in regard to training at MDC institutions; and AID priorities which have become more concerned, since the St. Lucia program began, with issues of regionalization and cost-effectiveness.[24]

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[24] Sources for these judgments were, respectively: Mr. Alvin Barnett, Principal, Barbados Community College; Mr. Philip Kneller, Head of Faculty, Porject HOPE, St. Lucia; Dr. Harry Drayton, Training Project Director, PAHO, Barbados; and Mr. Mark Laskin, Chief, Health, Nutrition and Population Division, AID RDO/C, Barbados.

Institutionalization of St. Lucia is an option that would ease the cost burden that is currently borne by AID and Project HOPE, and which would maintain an LDC-based training capacity. Transfer of the program would seem to offer a more efficient utilization of available regional training resources, setting aside the questions of admissions requirements, appropriateness of training, and graduate certification. Taking the 21-month experience of St. Lucian training as a basis for projecting future expenses, the cost implications of these alternative strategies may be briefly examined.

Under an institutionalized program, a large part of the costs that are now being incurred by AID and HOPE would be eliminated, thus reducing the aggregate economic costs to the region as well as the direct program costs to AID.[25] Table 6 presents a set of relevant component costs for the St. Lucia program. It compares the costs per student under existing staffing and enrollment patterns with those that might be expected if expatriate professionals were replaced by national staff and if associated administrative costs were lowered. The table shows that such changes could in fact have a significant impact on program cost-effectiveness: total per-student costs might be reduced by nearly 50%, to $14,500, and direct costs to AID might fall by 25% or more, to $11,100. Lower faculty costs and the elimination of Project HOPE support costs account for the majority of these effects; the support cost reduction alone represents $7,800 less in total costs. Personnel costs would also be cut back, assuming the availability of local staff to fill the positions. Under these conditions, HOPE might be phased out of the program, and over a short time AID's funding role might be shifted over to the LDCs as the EHO program grant period ended.

The viability of this strategy rests on the capacity and the willingness of the St. Lucian and other LDC governments to assume the program's operational and financial responsibilities. The cost reductions set out in the table, while substantial, would nonetheless be accompanied by major burdens on educational and economic resources of the local governments or of other donors. In the absence of a firm commitment by St. Lucia or outside donors to continue the program, it seems likely that the high opportunity cost of program resources would militate against a maintenance of EHO training effort at the Morne Complex.

A second option to be considered is a transfer of the EHO program to an existing institution in the region which has training capability in place. This alternative would reduce a portion of the costs of EHO training for the LDCs, by bringing about many of the changes shown in

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[25] It is assumed that over a short period of time all aspects of training operations would be taken over by the St. Lucian (or other LDC) government, including financial support. The estimates that are shown reflect a one-time shift in costs rather than a phased transition, although intermediate cost levels can easily be determined.

TABLE 6

ESTIMATED ON-GOING COSTS OF EHO TRAINING
ST. LUCIA
EXPATRIATE VS. NATIONAL STAFF
PER STUDENT ($US)

	WITH EXPATRIATES[1]		WITH NATIONALS[2]		NET DIFFERENCE	
	AID OPG COST	TOTAL COST	AID OPG COST	TOTAL COST	AID OPG COST	TOTAL COST
Recurrent Costs						
Faculty[3]	2,666	3,336	1,005	1,675	-1,661	-1,661
Program Management[4]	1,195	2,199	1,311	1,371	+116	-828
Transportation and Travel[5]	1,674	1,692	1,090	1,090	-584	-602
Other[6]	6,162	7,204	6,052	7,094	-110	-110
Subtotal Recurrrent	11,697	14,431	9,458	11,230	-2,239	-3,201
Fixed Costs[7]	982	2,864	604	2,390	-378	-474
Support Costs[8]	920	8,769	920	920	---	-7,849
TOTAL[9]	13,598	26,064	10,982	14,540	-2,616	-11,524

NOTES:
1. Under actual staffing, enrollment, and cost patterns of St. Lucia training program.
2. Assumes only substitution of appropriate St. Lucian staff for expatriate professionals in positions indicated and associated budget changes; estimates by Project HOPE staff, St. Lucia (see text).
3. Assumes 2 GOSL positions @ US $5,556 (EC $15,000) per year.
4. Assumes 1 GOSL position @ US $7,400 (EC $20,000) per year.
5. Based on elimination of relocation and home leave expenses and HOPE headquarters staff travel.
6. Assumes 75% reduction in communications expenses.
7. Assumes elimination of program housing and HOPE supporting activities costs, and 50% reduction in equipment donations.
8. Assumes support costs would remain at present AID level. Funds would go to national government rather than to Project HOPE.
9. Figures may not add to totals due to rounding.

SOURCE: Project HOPE budget data; author's calculations (see Table 2-8 for detail).

Table 6, and it would also promote the local assumption of program responsibilities for the future, after AID participation has been concluded. It was originally intended to incorporate into this study a relatively detailed analysis of the costs of EHO training at different institutions in the Caribbean region, including at least Barbados Community College (BCC) and the Jamaica campus of the University of the West Indies (UWI). Time constraints and difficulties in obtaining comparative cost data greatly limited the scope of such an investigation. Nonetheless, available information does yield several useful starting-points.

The Pan-American Health Organization recently completed a survey (June 1982) of allied health sciences programs at a number of Caribbean institutions, including BCC and UWI, which provides basic data on the full costs of training. The survey was very broad, however, and was conducted over only a short period, so that the results it offers appear in a highly aggregated form.[26] Supplemental estimates have been developed regarding EHO training at BCC for this study, in a memorandum (November 1982) which is copied in Annex 5. Cost figures from these sources are compared with the on-going cost findings of this St. Lucia study in Table 7, with formats made consistent and the data adjusted for comparability.[27] The table presents the total costs and costs to AID of the St. Lucian EHO program, along with a) the PAHO estimate of costs for the 2-year EHO certificate course offered at BCC; b) the updated 2-year program estimate made by Mr. Barnett for BCC; c) the previous figures adjusted proportionately to reflect the cost of 3 years at BCC, for LDC students who would be required to take a year of pre-science instruction to meet the school's 5 "O" level admissions requirements; and d) the PAHO cost estimate for the 3-year diploma course for EHOs at the University of the West Indies, Jamaica. (PAHO estimates cover 1981, and the recent BCC figures are projections for 1982-1984). From that the total costs of St. Lucian EHO training are over twice as great as those estimated for a two-year course at BCC ($25,900 vs. $9,800-$10,500), and are 50% higher than those for three years of instruction at BCC or UWI ($15,800 and $16,300, respectively).

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26 In particular, that survey's category of "institutional costs" encompasses all but the "student support and travel" category used in this analysis. Such an approach is convenient as well as methodologically appropriate for reviewing the "bottom lines" of a wide range of program at once, but it fails to provide further explanatory detail. In addition, documentation of the cost figures given proved to be unavailable outside of Trinidad.

27 All non-student maintenance costs for St. Lucia were counted as "institutional," and student home travel expenses were estimated at a similar level for the three programs.

TABLE 7

COMPARISON OF ON-GOING COSTS OF SELECTED EHO TRAINING PROGRAMS PER STUDENT ($US)

	ST. LUCIA		BARBADOS COMMUNITY COLLEGE			U.W.I.
	TOTAL COST	AID OPG COST	1981 [1]	1982/2 year[2]	1982/3 year[3]	JAMAICA 1981[4]
Program Characteristics						
Level	Certificate		Certificate	Certificate	Certificate	Diploma
Duration (years)	2		2	2	3	3
Students Enrolled	29		19	---	---	55
Cost Categories						
Institutional Costs and Fees[6]	20,125	8,472	4,625[5]	1,850[5]	2,775[5]	6,291[5]
Student Maintenance[7]	5,596	4,783	4,938	8,400	12,600	9,450
Home Travel[8]	224	224	250	250	375	600
TOTAL	25,945	13,479	9,813	10,500	15,750	16,341

NOTES:
1. Data from PAHO "Comparative Costing" survey (June 1982), p.11; annual figures adjusted for two-year program duration.
2. Data provided by Mr. Alvin Barnetc (Principal) in memorandum dated 11/22/82; figures are projections (Annex 5).
3. Two-year data in preceding column adjusted to include cost of additional year of training (see text).
4. Data from PAHO "Comparative Costing' survey (June 1982), p. 7; annual figures adjusted for three-year program duration.
5. Estimates based on less than "full economic cost" definition used for St. Lucia program.
6. Numbers in this row are not strictly comparable (see text). St. Lucia figures refer to all estimated costs excluding student maintenance and home travel; format required by inconsistency of available data.
7. Includes accommodation, meals, local transportation, and miscellaneous student living expenses.
8. Standard of one round-trip ticket (@ U.S. $125) per year adopted to provide comparability; St. Lucia amount adjusted for 29 enrolled students from St. Lucia. Jamaica level estimated at $200/round-trip.

SOURCE: Project HOPE budget data; author's calculations (except as indicated).

Living costs vary somewhat among the programs, and even among estimates for a single program; the minor difference between St. Lucia and the other schools are due chiefly to the availability of campus housing and food services at BCC and UWI, which are more convenient but also potentially costly. "Institutional Costs and Fees," covering tuition and fees for BCC and UWI, and all operating costs in St. Lucia, create the major cost variance: $1,900-$2,600 at BCC, $6,300 at Jamaica, and $20,100 at St. Lucia. As was seen in Table 6, the majority of St. Lucia's high costs may be traced to the use of expatriate personnel and administrative support by Project HOPE.

It is not clear in this case that the "full economic costs" of the St. Lucia program provide the best basis for comparison with the expenses of other EHO training programs. In the first place, it was not possible to determine the exact methodology that was used in the PAHO study, or, hence, the interpretation that should be attached to these estimates. For the BCC program, for example, the level of "institutional costs" per EHO graduate varies by over 100% between the PAHO and Barnett figures, with the earlier one notably the higher of them. The 1982-1984 projection explicitly counts only tuition and fees, which may omit instruction costs that are not recovered by tuition. The PAHO estimates were developed taking proportional shares of departmental budgets, and so may be expected to be more inclusive;[28] however, operating budgets may not reflect market costs of many items, particularly where government subsidies are involved, and analysis may not be sufficiently sensitive to identify cross-subsidization within institutions. Overall, it appears that the estimates made in this study of full institutional costs in St. Lucia are more comprehensive than those with which they are being compared.

In the second place, there are such substantial differences between the programs themselves -- in types and combinations of inputs, in training processes, and in graduate certification -- that in any interprogram comparison the "apples and oranges" (or "apples and mangoes") problem has been impossible to overlook. The distinctive features of the St. Lucia training and graduates, as discussed in the Eighteen-Month Evaluation, stand out so clearly that any major assessment of EHO training in the region would have to focus in large measure on differences in EHO "production processes" and "outputs." If, as in this study, all EHOs produced are treated as equivalent, then it may be more appropriate to compare programs in terms of the direct costs to AID or other decisionmakers.[29]

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[28] Personal communication with Mr. E. Ramesar, University of the West Indies, Trinidad (telephone).

[29] See the discussion of Table 3 (above) as well on this point.

From this perspective, it is possible to compare the "out-of-pocket" costs to those making funding decisions without the need to balance complex issues of graduate equivalence with those of full economic cost. The $10,500 estimate supplied by Mr. Barnett provide a firm projection of the 2-year costs per EHO student that would be incurred under a grant or fellowship from AID. If prospective trainees do not meet the BCC admission requirement of 5 "O" levels, they would have to take a preliminary year of pre-science training to enter the EHO program. In this case, the costs to AID would rise by $4,300 per student, to $14,800. The actual average would fall between these amounts.[30] A comparable estimate of the cost to AID for training EHO's through a third class in St. Lucia is $13,500, as shown in the table.[31] In summary, the projected AID costs per student range from $10,500-$14,800 in the two programs.[32]

These amounts appear sufficiently similar that any decision about future EHO training arrangements must clearly be made on the basis of criteria other than direct cost. Several relevant considerations remain cost-related:

- The distribution of full economic costs as it affects the aggregate allocation of development resources within the Caribbean region. In other words, the other costs of training in St. Lucia, or at other sites, will expand or reduce the pool of inputs that might be applied to other programs (including training), but this relationship is not direct.

- Additional economic benefits of training programs which are conducted in different ways. An example here would be the stimulation of U.S. private sector donations to the region through private voluntary organizations, such as occurred in the St. Lucia program.

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30 HOPE St. Lucia staff point out that the qualifications of training candidates have risen beyond their earlier standard, to where only a minority of student in a third LDC EHO class are likely to have less than 5 "O" levels.

31 The 21-month per student cost is not a perfect basis for projecting future costs, but it is difficult to determine the probable direction of bias. Reduced scale economies from a smaller number of programs, as well as inflation, would make this an underestimate, while greater operating efficiency with experience might also be predicted. In general this historical cost is expected to be reasonably reliable.

32 Similar estimates could not be obtained for any of the UWI programs, as would have been desirable, so the BCC figures must be taken as representative.

- Potential costs to LDCs of the absence of workers for a third year of instruction at BCC, and the potential benefits to students.

- Future costs for the developement of new training programs in the region, as determined on the basis of projections about the supply of and demand for EHOs and other types of health workers.

- Regional preferences, on the part of ministries of health and education, as well as intergovernmental organizations, concerning patterns of institutional development. Important elements here are the interest of the St. Lucian and other LDC governments in maintaining a training capacity at the Morne Complex, and their likely financial commitment to this effort.

These issues require further study, both to develop relevant estimates and to assess their implications for decisionmaking about the mode of EHO training. The cost-effectiveness comparisons that are afforded by available data, while inexact, provide one input to such examination.

IV. CONCLUSION

A systematic examination of the costs associated with the EHO training conducted by Project HOPE in St. Lucia confirms previous estimates of full economic on-going costs in the range of $26,000 per student ($26,064). Of this amount, 55% ($14,400 per student) goes for recurrent expenses, the majority to student support and travel and to personnel. Fixed costs, principally for facilities and equipment, were $2,900 per student, and Project HOPE support costs accounted for 34% of the total, or $8,000 per student. AID funds covered 52% of on-going expenses, including $900 per student in HOPE support and overhead costs. Start-up costs for the EHO program totalled approximately $154,000, or $11,200 per student as of June 30, 1982.

With some margin for error, these results appear highly reliable. The methodology that was used first identified all relevant cost items, then allocated these costs between the three grant-supported training programs conducted at the Morne Complex, on a quarterly basis. Values were estimated or inputed where necessary. The number of "graduate-equivalent" EHO students was used as a measure of program output; further assessment of the quality or efficacy of graduates, in terms of capabilities, certification, or country needs, did not prove feasible. The detail that was afforded by this analysis permitted a close examination of the significance of different components of total cost.

A large proportion of fixed and support costs/for EHO training are directly attributable to the circumstances surrounding the initiation of this program, and to subsequent reductions in the full scope of training activities at the Morne Complex. Much of the high cost of expatriate staff, for example, in addition to that for HOPE Center support, would not have been incurred if local personnel and other capacity had been available on-site. Yet to the extent that relevant conditions may have changed and alternative programs may be able to meet LDC needs, it appears appropriate to consider redirection of the training effort.

For decisionmaking purposes it may be useful to separately consider program costs to the AID program grant, in addition to the full economic costs of EHO training. By provisionally excluding the contributions made by Project HOPE, the St. Lucian Government, and the EHO students (the opportunity costs for which cannot be readily determined, but which lie outside of AID's direct purview), choices about the use of AID resources are focused on the $13,000 per graduate that might be directed in other ways. From this perspective, additional inputs may be seen as a "bonus" of AID support in St. Lucia.

Analysis of the costs of EHO training may also be placed in the context of the full set of programs run at the Morne Complex. Although costs were allocated out to individual training activities, this procedure is not fully consistent with reality. As at larger institutions, all

programs tend to benefit from joint economies in production; for example, the low unit costs of EHA training are likely to have been promoted by the availability of resources targeted for the EHO course. Program changes occuring since the beginning of the grant period, such as the reduced scale of program operations, have clearly led to higher unit costs than were anticipated. Reductions in training operations which continue to narrow the base over which fixed costs are distributed (without lowering support costs) would further raise the average cost of producing EHOs in St. Lucia, while any expansion of program operations would lower unit costs.

The cost impact of different options for extension and institutionalization of the EHO program have been discussed. Strategies which reduce reliance on expatriate personnel would have the greatest effect on the economic cost of training, through the lowering of salaries, travel, and support. Recurrent costs to AID would also be substantially reduced, by a smaller proportion.

It has not been possible to thoroughly compare the cost of St. Lucian EHO training with that of similar programs in the region, such as Barbados Community College, because of the unavailability of complete data. Preliminary evidence indicates that the economic costs of HOPE training remain substantially greater than those for EHO instruction at BCC, even when an additional year of pre-science instruction is allowed for LDC students at the latter school. Comparison of estimated direct costs to AID in the two programs shows approximate equivalence. Accordingly, decisions about the location of EHO training must be made in large measure on the basis of criteria other than direct cost.

A major conclusion of this analysis is that cost concerns cannot be separated from the historical, political, and professional considerations which underly the operation of the St. Lucia program. The diversity of perspectives represented by the persons interviewed for this study cannot be readily integrated into recommendations for action which are based on cost-effectiveness alone. In combination with response to issues which have been raised in the Eighteen-Month Evaluation and in other discussions, this assessment of cost-effectiveness patterns may contribute to more informed decisions about the allocation of USAID resources.

ANNEX 1

PERSONS CONTACTED

Project HOPE

HOPE Center, Millwood, Virginia

Mr. William L. Brockschmidt
Vice President,
Finanace Division

Ms. Carol A. Fredriksen
Director of Program Administration
International Division

John M. Grana, Ph.D.
Economist, Deputy Director
Center for Health Information

Mr. William B. Layden
Budget Manager
Assistant Secretary for Project HOPE

E. Croft Long, M.B., B.S., Ph.D.
Vice President
International Division

James Magero, Ed.D.
Associate
Strategic Planning Division

Richard S. Meltzer, M.D.
Chairman
Health Sciences Faculty

Mr. Don G. Weaver
Director of Programs
International Division

Morne Complex, Saint Lucia

Thomas Egan, Pharm.D.
Pharmacist Educator

Mr. Philip B. Kneller
Sanitarian Educator, Head of Faculty

Ms. Sandra Koblenz
Administrative Assistant

U.S. Agency for International Development

Washington, D.C.

Ms. Paula Feeney
Health Advisor
Latin America and Caribbean Division

Regional Development Office for the Caribbean, Bridgetown, Barbados

Ms. Toni Christiansen-Wagner
PVO Officer

Mr. Mark Laskin
Chief
Health, Nutrition, and Population Division

Mr. Ted D. Morse
Assistant Director

Mr. Allen Randlov
Regional Public Health Officer

Mr. William B. Wheeler
Mission Director

Other Organizations

Mr. Alvin F. E. Barnett
Principal
Barbados Community College

Harold Drayton, Ph.D.
Director
PAHO Regional Project for the
Education and Training of Allied Health Personnel
Barbados, West Indies

Mr. Esmond D. Ramésar
Director
Extra-Mural Studies Unit
University of the West Indies
St. Augustine, Trinidad

ANNEX 2

DETAILED COST TABLES

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TABLE 2-1

TOTAL COST
EHO ON-GOING
($US)

	AID	HOPE	GOSL	STUDENT	TOTAL
RECURRENT COSTS					
Faculty	36,793		9,250		46,043
Salaries (expatriate)	29,900				29,900
Salaries (local)			9,250		9,250
Benefits and Payroll Taxes	6,893				6,893
Program Management	16,489	13,796	59		30,344
Salaries (expatriate)	6,331	12,095			18,426
Salaries (local)	8,344	779	59		9,182
Benefits and Payroll Taxes	1,320	922			2,242
Prof. Services	494				494
Supplies	12,268	224			12,492
General	12,130	224			12,354
Printing	138				138
Transportation and Travel	23,105	240			23,345
Freight	1,335				1,335
Program Transportation and Travel	13,699				13,699
HOPE HQ Travel	807				807
Relocation and Home Leave	7,264	240			7,504
Operations and Maintenance			2,950		2,950
Custodial Services			1,600		1,600
Utilities			1,350		1,350
Communications	2,013				2,013
Student Support	70,744			11,215	81,959
Living Costs	66,007			11,215	77,222
Home Travel	4,737				4,737
SUBTOTAL, RECURRENT	161,412	14,260	12,259	11,215	199,146

TOTAL COST
EHO ON-GOING
($US)
(Continued...)

	AID	HOPE	GOSL	STUDENT	TOTAL
FIXED COSTS					
Facilities		1,321	14,659		15,980
Classroom and Office Supplies			13,427		13,427
Program Housing		1,321	1,232		2,553
Equipment	6,413	8,854			15,267
General	3,576				3,578
Rental	2,835	8,854			11,689
Donations					
Library	5,396	1,099			6,495
Books		1,099			1,099
Subscriptions	5,396				5,396
Supporting Activities	791				791
HOPE HQ Changes	443				443
Per Diems	348				348
Miscellaneous	949	44			993
SUBTOTAL, FIXED COSTS	13,549	11,318	14,659		39,526
SUPPORT COSTS	12,690	108,320			121,010
Summary					
Recurrent	161,412	14,260	12,259	11,215	199,146
Fixed	13,549	11,318	14,659		39,526
Support	12,690	108,320			121,010
TOTAL COSTS	187,651	133,898	26,918	11,215	359,682

TABLE 2-2

TOTAL COST
EHO START-UP
($US)

	AID	HOPE	GOSL	TOTAL
DIRECT COSTS				
Faculty	13,189		2,761	15,951
Salaries (expatriate)	11,178			11,178
Salaries (local)			2,761	2,761
Benefits and Payroll Taxes	2,011			2,011
Program Management	2,136	5,162	700	7,999
Salaries (expatriate)	1,246	4,864		6,110
Salaries (local)	349		700	1,049
Benefits and Payroll Taxes	240	299		539
Prof. Services	301			301
Supplies	1,980			1,980
General	1,497			1,497
Printing	482			482
Transportation and Travel	16,173			16,173
Freight	3,382			3,382
Program Transportation and Travel	6,329			6,329
HOPE HQ Travel	2,063			2,063
Relocation and Home Leave	4,399			4,399
Operations and Maintenance			1,120	1,120
Custodial Services			560	560
Utilities			560	560
Communications	2,103			2,103

TOTAL COST
EHO START-UP
($US)
(Continued...)

	AID	HOPE	GOSL	TOTAL
Facilities			2,239	2,239
Classroom and Office Supplies			1,539	1,539
Program Housing			700	700
Equipment	5,251	10,864		16,115
General	5,239			5,239
Rental	13	736		749
Donations		10,128		10,128
Library	2,156	9,053		11,210
Books		9,053		9,053
Subscriptions	2,156			2,156
Supporting Activities	2,781			2,781
HOPE HQ Changes	2,781			2,781
Per Diems				
Miscellaneous	50			50
SUBTOTAL, DIRECT COSTS	45,821	25,080	6,820	77,720
SUPPORT COSTS	6,776	69,466		76,242
TOTAL COSTS	52,597	94,545	6,820	153,962

TABLE 2-3

TOTAL COST
EHA ON-GOING
($US)

	AID	HOPE	GOSL	STUDENT	TOTAL
RECURRENT COSTS					
Faculty	13,805		4,425		18,230
Salaries (expatriate)	11,587				11,587
Salaries (local)			4,425		4,425
Benefits and Payroll Taxes	2,218				2,218
Program Management	8,735	6,457	59		15,251
Salaries (expatriate)	4,357	6,157			10,514
Salaries (local)	2,919		59		2,978
Benefits and Payroll Taxes	817	300			1,117
Prof. Services	642				642
Supplies	2,927				2,927
General	2,807				2,807
Printing	120				120
Transportation and Travel	9,901	192			10,093
Freight	678				678
Program Transportation and Travel	3,291				3,291
HOPE HQ Travel	144				144
Relocation and Home Leave	5,788	192			5,980
Operations and Maintenance			900		900
Custodial Services			450		450
Utilities			450		450
Communications	906				906
Student Support				33,333	33,333
Living Costs				33,333	33,333
Home Travel					
SUBTOTAL, RECURRENT	36,274	6,649	5,384	33,333	81,640

TOTAL COST
EHA ON-GOING
($US)
(Continued...)

	AID	HOPE	GOSL	STUDENT	TOTAL
FIXED COSTS					
Facilities		124	5,582		5,706
Classroom and Office Supplies			5,103		5,103
Program Housing		124	479		603
Equipment	610	957			1,567
General	214				214
Rental	396	957			1,353
Donations					
Library	1,162	320			1,482
Books		320			320
Subscriptions	I,162				1,162
Supporting Activities	330				330
HOPE HQ Changes	330				330
Per Diems					
Miscellaneous	238	44			282
SUBTOTAL, FIXED COSTS	2,340	1,445	5,582		9,367
SUPPORT COSTS	4,489	42,399			46,888
Summary					
Recurrent	36,274	6,649	5,384	33,333	81,640
Fixed	2,340	1,445	5,582		9,367
Support	4,489	42,399			46,888
TOTAL COSTS	43,103	50,493	10,966	33,333	137,895

TABLE 2-4

TOTAL COST
EHA START-UP
($US)

	AID	HOPE	GOSL	TOTAL
DIRECT COSTS				
Faculty	5,653		1,184	6,836
Salaries (expatriate)	4,791			4,791
Salaries (local)			1,184	1,184
Benefits and Payroll Taxes	862			862
Program Management	916	2,213	300	3,428
Salaries (expatriate)	534	2,084		2,618
Salaries (local)	150		300	450
Benefits and Payroll Taxes	103	128		231
Prof. Services	129			129
Supplies	848			848
General	642			642
Printing	207			207
Transportation and Travel	6,932			6,932
Freight	1,449			1,449
Program Transportation and Travel	2,713			2,713
HOPE HQ Travel	884			884
Relocation and Home Leave	1,886			1,886
Operations and Maintenance			480	480
Custodial Services			240	240
Utilities			240	240
Communications	902			902

TOTAL COST
EHA START-UP
($US)
(Continued...)

	AID	HOPE	GOSL	TOTAL
Facilities			959	959
Classroom and Office Supplies			659	659
Program Housing			300	300
Equipment	2,251	4,656		6,907
General	2,245			2,245
Rental	5	316		321
Donations		4,340		4,340
Library	924	3,880		4,804
Books		3,880		3,880
Subscriptions	924			924
Supporting Activities	1,192			1,192
HOPE HQ Changes	1,192			1,192
Per Diems				
Miscellaneous	21			21
SUBTOTAL, DIRECT COSTS	19,637	10,748	2,923	33,309
SUPPORT COSTS	2,904	29,771		32,675
TOTAL COSTS	22,541	40,520	2,923	65,984

TABLE 2-5

TOTAL COST
EHS START-UP
($US)

	AID	HOPE	GOSL	TOTAL
DIRECT COSTS				
Faculty	18,842		3,945	22,787
Salaries (expatriate)	15,969			15,969
Salaries (local)			3,945	3,945
Benefits and Payroll Taxes	2,873			2,873
Program Management	3,052	7,375	1,000	11,427
Salaries (expatriate)	1,780	6,948		8,728
Salaries (local)	499		1,000	1,499
Benefits and Payroll Taxes	343	427		770
Prof. Services	430			430
Supplies	2,828			2,828
General	2,139			2,139
Printing	689			689
Transportation and Travel	23,105			23,105
Freight	4,831			4,831
Program Transportation and Travel	9,042			9,042
HOPE HQ Travel	2,947			2,947
Relocation and Home Leave	6,285			6,285
Operations and Maintenance			1,600	1,600
Custodial Services			800	800
Utilities			800	800
Communications	3,005			3,005

TOTAL COST
EHS START-UP
($US)
(Continued...)

	AID	HOPE	GOSL	TOTAL
Facilities			3,198	3,198
Classroom and Office Supplies			2,198	2,198
Program Housing			1,000	1,000
Equipment	7,502	15,520		23,022
General	7,484			7,484
Rental	18	1,052		1,070
Donations		14,468		14,468
Library	3,080	12,933		16,013
Books		12,933		12,933
Subscriptions	3,080			3,080
Supporting Activities	3,973			3,973
HOPE HQ Changes	3,973			3,973
Per Diems				
Miscellaneous	71			71
SUBTOTAL, DIRECT COSTS	65,458	35,828	9,743	11,029
SUPPORT COSTS	9,680	99,237		108,917
TOTAL COSTS	75,138	135,065	9,743	219,946

TABLE 2-6

TOTAL COST
DHS ON-GOING
($US)

	AID	HOPE	GOSL	STUDENT	TOTAL
RECURRENT COSTS					
Faculty	16,252	5,665	4,425		26,342
Salaries (expatriate)	12,798	5,183			17,981
Salaries (local)			4,425		4,425
Benefits and Payroll Taxes	3,454	482			3,936
Program Management	6,381	6,570			12,951
Salaries (expatriate)	1,827	5,656			7,483
Salaries (local)	4,029	387			4,416
Benefits and Payroll Taxes	454	527			981
Prof. Services	71				71
Supplies	6,666	112			6,778
General	6,656	112			6,768
Printing	10				10
Transportation and Travel	10,681	89			10,770
Freight	976				976
Program Transportation and Travel	5,506				5,506
HOPE HQ Travel	511				511
Relocation and Home Leave	3,688	89			3,777
Operations and Maintenance			883		883
Custodial Services			483		483
Utilities			400		400
Communications	942				942
Student Support	4,980			17,550	22,530
Living Costs	4,467			17,200	21,667
Home Travel	513			350	863
SUBTOTAL, RECURRENT	45,902	12,436	5,308	17,550	81,196

TOTAL COST
DHS ON-GOING
($US)
(Continued...)

	AID	HOPE	GOSL	STUDENT	TOTAL
FIXED COSTS					
Facilities		788	1,705		2,493
Classroom and Office Supplies			1,116		1,116
Program Housing		788	589		1,377
Equipment	3,717	5,042			8,759
General	2,256				2,256
Rental	1,461	5,042			6,503
Donations					
Library	3,576	2,030			5,606
Books		2,030			2,030
Subscriptions	3,576				3,576
Supporting Activities	286				286
HOPE HQ Changes	130				130
Per Diems	156				156
Miscellaneous	421				421
SUBTOTAL, FIXED COSTS	8,000	7,860	1,705		17,565
SUPPORT COSTS	6,854	60,698			67,552
Summary					
Recurrent	45,902	12,436	5,308	17,550	81,196
Fixed	8,000	7,860	1,705		17,565
Support	6,854	60,698			67,552
TOTAL COSTS	60,756	80,994	7,013	17,550	166,313

TABLE 2-7

TOTAL COST
DHS START-UP
($US)

	AID	HOPE	GOSL	TOTAL
DIRECT COSTS				
Faculty	7,597	4,123		11,720
Salaries (expatriate)	6,363	3,809		10,172
Salaries (local)				
Benefits and Payroll Taxes	1,234	314		1,548
Program Management	6,827	4,802	49	11,678
Salaries (expatriate)	3,623	4,590		8,213
Salaries (local)	1,936		49	1,985
Benefits and Payroll Taxes	658	212		870
Prof. Services	610			610
Supplies	2,135			2,135
General	2,002			2,002
Printing	133			133
Transportation and Travel	16,542	161		16,703
Freight	4,340			4,340
Program Transportation and Travel	7,510			7,510
HOPE HQ Travel				
Relocation and Home Leave	4,692	161		4,853
Operations and Maintenance			400	400
Custodial Services			200	200
Utilities			200	200
Communications	642			642

TOTAL COST
DHS START-UP
($US)
(Continued...)

	AID	HOPE	GOSL	TOTAL
Facilities			831	831
Classroom and Office Supplies			483	483
Program Housing			348	348
Equipment	4,220	27,696		31,916
General	3,864			3,864
Rental	356	328		684
Donations		27,368		27,368
Library	408	6,347		6,755
Books		6,347		6,347
Subscriptions	408			408
Supporting Activities	3,973			2,102
HOPE HQ Changes	3,973			2,102
Per Diems				
Miscellaneous	201	62		263
SUBTOTAL, DIRECT COSTS	40,674	43,191	1,280	85,145
SUPPORT COSTS	2,619	23,426		26,045
TOTAL COSTS	43,293	66,617	1,280	111,190

TABLE 2-8

COST PER STUDENT
EHO ON-GOING
(Total Cost/13.8 GE Students, $US)

	AID	HOPE	GOSL	STUDENT	TOTAL
RECURRENT COSTS					
Faculty	2,666		670		3,336
Salaries (expatriate)	2,166		670		2,166
Salaries (local)					670
Benefits and Payroll Taxes	499				499
Program Management	1,195	1,000	4		2,199
Salaries (expatriate)	459	876			1,335
Salaries (local)	605	56	4		665
Benefits and Payroll Taxes	96	67			162
Prof. Services	36				36
Supplies	889	16			905
General	879	16			895
Printing	10				10
Transportation and Travel	1,674	17			1,692
Freight	97				97
Program Transportation and Travel	993				993
HOPE HQ Travel	58				58
Relocation and Home Leave	526	17			544
Operations and Maintenance			214		214
Custodial Services			116		116
Utilities			98		98
Communications	146				146
Student Support	5,126			813	5,939
Living Costs	4,783			813	5,596
Home Travel	343				343
SUBTOTAL, RECURRENT	11,697	1,033	888	813	14,431

COST PER STUDENT
EHO ON-GOING
(Total Cost/13.8 GE Students, $US)
(Continued...)

	AID	HOPE	GOSL	STUDENT	TOTAL
FIXED COSTS					
Facilities		96	1,062		1,158
Classroom and Office Supplies			973		973
Program Housing		96	89		185
Equipment	465	642			1,106
General	259				259
Rental	205				205
Donations		642			642
Library	391	80			471
Books		80			80
Subscriptions	391				391
Supporting Activities	57				57
HOPE HQ Changes	32				32
Per Diems	25				25
Miscellaneous	69	3			72
SUBTOTAL, FIXED COSTS	982	820	1,062		2,864
SUPPORT COSTS	920	7,849			8,769
Summary					
Recurrent	11,697	1,033	888	813	14,431
Fixed	982	820	1,062		2,864
Support	920	7,849			8,769
TOTAL COSTS	13,598	9,703	1,951	813	26,064

NOTE: Figures may not add to totals due to rounding.

TABLE 2-9

COST PER STUDENT
EHO START-UP
(Total Cost/13.8 GE Students, $US)

	AID	HOPE	GOSL	TOTAL
DIRECT COSTS				
Faculty	956		200	1,156
Salaries (expatriate)	810			810
Salaries (local)			200	200
Benefits and Payroll Taxes	146			146
Program Management	155	374	51	580
Salaries (expatriate)	90	352		443
Salaries (local)	25		51	76
Benefits and Payroll Taxes	17	22		39
Prof. Services	22			22
Supplies	143			143
General	108			108
Printing	35			35
Transportation and Travel	1,172			1,172
Freight	245			245
Program Transportation and Travel	459			459
HOPE HQ Travel	149			149
Relocation and Home Leave	319			319
Operations and Maintenance			81	81
Custodial Services			41	41
Utilities			41	41
Communications	152			152

COST PER STUDENT
EHO START-UP
(Total Cost/13.8 GE Students, $US)
(Continued...)

	AID	HOPE	GOSL	TOTAL
Facilities			162	162
Classroom and Office Supplies			112	112
Program Housing			51	51
Equipment	381	787		1,168
General	380			380
Rental	1	53		54
Donations		734		734
Library	156	656		812
Books		656		656
Subscriptions	156			156
Supporting Activities	202			202
HOPE HQ Changes	202			202
Per Diems				
Miscellaneous	4			4
SUBTOTAL, DIRECT COSTS	3,320	1,187	494	5,632
SUPPORT COSTS	491	5,034		5,525
TOTAL COSTS	3,811	6,851	494	11,157

NOTE: Figures may not add to totals due to rounding.

TABLE 2-10

COST PER STUDENT
EHA ON-GOING
(Total Cost/40 Students Graduated, $US)

	AID	HOPE	GOSL	STUDENT	TOTAL
RECURRENT COSTS					
Faculty	345		111		456
Salaries (expatriate)	2,166				290
Salaries (local)			111		111
Benefits and Payroll Taxes	499				55
Program Management	1,195	161	1		381
Salaries (expatriate)	109	154			263
Salaries (local)	73		1		74
Benefits and Payroll Taxes	20	8			28
Prof. Se-vices	16				16
Supplies	73				73
General	7D				70
Printing	3				3
Transportation and Travel	248	5			252
Freight	17				17
Program Transportation and Travel	82				82
HOPE HQ Travel	4				4
Relocation and Home Leave	145	5			150
Operations and Maintenance			23		23
Custodial Services			11		11
Utilities			11		11
Communications	23				23
Student Support				833	833
Living Costs				833	833
Home Travel					
SUBTOTAL, RECURRENT	907	166	135	833	2,041

COST PER STUDENT
EHA ON-GOING
(Total Cost/40 Student Graduated, $US)
(Continued...)

	AID	HOPE	GOSL	STUDENT	TOTAL
FIXED COSTS					
Facilities		3	140		143
Classroom and Office Supplies			128		128
Program Housing		3	12		15
Equipment	15	24			39
General	5				5
Rental	10	24			34
Donations					
Library	29	8			37
Books		8			8
Subscriptions	29				29
Supporting Activities	8				8
HOPE HQ Changes	8				8
Per Diems					
Miscellaneous	6	1			7
SUBTOTAL, FIXED COSTS	59	36	140		234
SUPPORT COSTS	122	1,060			1,172
Summary					
Recurrent	907	166	135	833	2,041
Fixed	59	36	140		234
Support	112	1,060			1,172
TOTAL COSTS	1,078	1,262	274	833	3,447

NOTE: Figures may not add to totals due to rounding.

TABLE 2-11

COST PER STUDENT
EHA START-UP
(Total Cost/40 Student Graduated, $US)

	AID	HOPE	GOSL	TOTAL
DIRECT COSTS				
Faculty	141		30	171
Salaries (expatriate)	120			120
Salaries (local)			30	30
Benefits and Payroll Taxes	22			22
Program Management	23	55	8	86
Salaries (expatriate)	13	52		65
Salaries (local)	4		8	11
Benefits and Payroll Taxes	3	3		6
Prof. Services	3			3
Supplies	21			21
General	16			16
Printing	5			5
Transportation and Travel	173			173
Freight	36			36
Program Transportation and Travel	68			68
HOPE HQ Travel	22			22
Relocation and Home Leave	47			47
Operations and Maintenance			12	12
Custodial Services			6	6
Utilities			6	6
Communications	23			23

COST PER STUDENT
EHA START-UP
(Total Cost/40 Students Graduated, $US)
(Continued...)

	AID	HOPE	GOSL	TOTAL
Facilities			24	24
Classroom and Office Supplies			16	16
Program Housing			8	8
Equipment	56	116		173
General	56			56
Rental		8		8
Donations		109		109
Library	23	97		120
Books		97		97
Subscriptions	23			23
Supporting Activities	202			30
HOPE HQ Changes	202			30
Per Diems				
Miscellaneous	4			1
SUBTOTAL, DIRECT COSTS	491	269	73	833
SUPPORT COSTS	73	744		817
TOTAL COSTS	564	1,013	73	1,650

NOTE: Figures may not add to totals due to rounding.

TABLE 2-12

COST PER STUDENT
DHS ON-GOING
(Total Cost/5.3 GE Students, $US)

	AID	HOPE	GOSL	STUDENT	TOTAL
RECURRENT COSTS					
Faculty	3,066	1,069	835		4,970
Salaries (expatriate)	2,415	978			3,393
Salaries (local)			835		835
Benefits and Payroll Taxes	652	91			743
Program Management	1,204	1,240			2,444
Salaries (expatriate)	345	1,068			1,412
Salaries (local)	760	73			833
Benefits and Payroll Taxes	86	99			185
Prof. Services	14				14
Supplies	1,258	21			1,279
General	1,256	21			1,277
Printing	2				2
Transportation and Travel	2,015	17			2,032
Freight	184				184
Program Transportation and Travel	1,039				1,039
HOPE HQ Travel	96				96
Relocation and Home Leave	696	17			713
Operations and Maintenance			167		167
Custodial Services			91		91
Utilities			75		75
Communications	178				178
Student Support	940			3,311	4,251
Living Costs	843			3,245	4,088
Home Travel	97			66	163
SUBTOTAL, RECURRENT	8,661	2,346	1,002	3,311	15,320

COST PER STUDENT
DHS ON-GOING
(Total Cost/5.3 GE Students, $US)
(Continued...)

	AID	HOPE	GOSL	STUDENT	TOTAL
FIXED COSTS					
Facilities		149	322		470
Classroom and Office Supplies			211		211
Program Housing		149	111		260
Equipment	701	951			1,653
General	426				426
Rental	276	951			1,227
Donations					
Library	675	383			1,058
Books		383			383
Subscriptions	675				675
Supporting Activities	54				54
HOPE HQ Changes	25				25
Per Diems	29				29
Miscellaneous	79				79
SUBTOTAL, FIXED COSTS	1,509	1,483	322		3,314
SUPPORT COSTS	1,293	11,452			12,746
Summary					
Recurrent	8,661	2,346	1,002	3,311	15,320
Fixed	1,509	1,483	322		3,314
Support	1,293	11,452			12,746
TOTAL COSTS	11,463	15,282	1,323	3,311	31,380

NOTE: Figures may not add to totals due to rounding.

TABLE 2-13

COST PER STUDENT
DHS START-UP
(Total Cost/5.3 GE Students, $US)

	AID	HOPE	GOSL	TOTAL
DIRECT COSTS				
Faculty	1,433	778		2,211
Salaries (expatriate)	1,201	719		1,919
Salaries (local)				
Benefits and Payroll Taxes	233	59		292
Program Management	1,288	906	9	2,203
Salaries (expatriate)	684	866		1,550
Salaries (local)	365		9	375
Benefits and Payroll Taxes	124	40		164
Prof. Services	115			115
Supplies	403			403
General	378			378
Printing	25			25
Transportation and Travel	3,121	30		3,152
Freight	819			819
Program Transportation and Travel	1,417			1,417
HOPE HQ Travel				
Relocation and Home Leave	885	30		916
Operations and Maintenance			75	75
Custodial Services			38	38
Utilities			38	38
Communications	121			121

COST PER STUDENT
DHS START-UP
(Total Cost/5.3 GE Students, $US)
(Continued...)

	AID	HOPE	GOSL	TOTAL
Facilities			157	157
Classroom and Office Supplies			91	91
Program Housing			66	66
Equipment	796	5,226		6,022
General	729			729
Rental	67	62		129
Donations		5,164		5,164
Library	77	1,198		1,275
Books		1,198		1,198
Subscriptions	77			77
Supporting Activities	397			397
HOPE HQ Changes	397			397
Per Diems				
Miscellaneous	38	12		50
SUBTOTAL, DIRECT COSTS	7,674	8,149	242	16,065
SUPPORT COSTS	494	4,420		4,914
TOTAL COSTS	8,168	12,569	242	20,979

NOTE: Figures may not add to totals due to rounding.

ANNEX 3

DESCRIPTION OF METHODOLOGY

Within the framework that has been set out in Chapter II, the process of cost allocation involved four basic tasks:

- For costs to AID and HOPE under the program grant, to identify relevant budget categories and abstract this data from financial reports;
- To assign these costs to the different training programs and distinguish between start-up and on-going activities;
- To identify and assign cost values to inputs provided by the host government; and
- To determine the cost of student support and travel, and calculate the portions covered by program fellowships and by the students themselves.

In addition, it was necessary to compute the output measure of "graduate-equivalent" students for the respective training courses. These steps were carried out as described below.

I. Identification of AID and HOPE Costs

The quarterly Financial Status Reports submitted by Project HOPE to USAID provide detailed information on the expenditures incurred under the program grant for training in St. Lucia. Values assigned by Project HOPE for donations in-kind (books, equipment, and supplies), based on full market value, appear appropriate and are taken as given. Budget items as accounted for by Project HOPE were organized into the categories used in this analysis as follows:

1. Faculty (Personnel)

   a. Salaries - Faculty and Project Management (part)
   b. Employee Benefits (part)
      Payroll Taxes (part)

Costs for faculty were separated out using information supplied by Project HOPE. As discussed in the text, the value of "donated services" ($25,663) included by Project HOPE, reflecting the differences between salary paid to Dr. Charles Hadden and his previous salary, was omitted from the analysis to maintain consistency, insofar as similar "captured values" are not provided for other program personnel. Dr. Hadden's salary, benefits, and payroll expenses were allocated between faculty and program management duties on a 25%/75% basis. No costs for local faculty were borne by AID or HOPE.

2. Program Management (Personnel)

   a. Salaries - Faculty and Project Management (part)
   b. Employee Benefits (part)
      Payroll Taxes (part)
   c. Employee Benefits (part)
      Payroll Taxes (part)
   d. Professional Fees

As above, expenses for program management by HOPE staff were separated out of the personnel totals. Salaries were paid to clerical staff in local currency. All costs of locally purchased services, such as legal services and other short-term contracting, are included in this category. Administration and other program activities by AID and staff of the St. Lucian and other LDC governments are not accounted for.

3. Supplies

   a. Supplies
   b. Printing

Supply costs refer to purchase of expendable items (chiefly office supplies) of under $250 in value, both locally and shipped from the U.S. Excluded are certain donated supply items, which could not be identified separately from equipment donations. Local printing costs are relatively minor.

4. Transportation and Travel

   a. Freight
   b. Program Travel
   c. Headquarters Staff Travel
   d. Relocation and Home Leave

This category includes all travel associated with program operations and Program Council activities, less commuting and home travel by students, AID staff travel, and travel between Washington, D.C., and HOPE Center. Freight costs exclude $5,000 (estimated) for the shipment of books which were donated to the St. Lucian government. Added to Program Travel are certain expenses originally counted within Fellowships. The rental and operating expenses for program vehicles are included here, although purchase costs are counted within Equipment. Relocation and Home Leave costs, higher than initially anticipated, are combined for expatriate faculty and management staff.

5. Communications

Telephones
Telex
Postage

Only those costs incurred by Project HOPE are counted; excluded are a portion of local telephone bills paid by the host government and expenses directly to AID.

6. Student Support

Fellowships

As discussed in Section 3 below, the actual cost of student stipends and home travel were separated out of the total recorded for fellowships, and these were checked against predicted totals.

7. Facilities

Program Housing

The only facility costs paid by AID or HOPE were for temporary staff housing in St. Lucia.

8. Equipment

a. Fixed Assets
b. Occupancy
c. Donated Materials - GIK (Gifts-In-Kind)

Equipment costs include the purchase of fixed assets (of greater than $250 in value), the rental of certain equipment (such as a copying machine), and materials donated through Project HOPE. The majority of the gifts-in-kind were of laboratory equipment, although other items were provided as well.

9. Library.

a. Books - GIK
b. Subscriptions

This category covers expenses for texts as well as references and journal subscriptions, since all course materials were supplied by the program. Most of the library collection was developed through in-kind donation of books; the small proportion of books that were purchased are counted under Equipment. Subtracted from program costs were $317,456 in market value of health sciences books for the St. Lucian government which were shipped by Project HOPE in March 1981 (estimated to be 94% of shipment volume in that month, which were delivered to the MOH).

10. Supporting Activities

    a. Headquarters Housing Charge
       Headquarters Food Charge
       Headquarters Travel Charge
       Food
    b. Per Diems

Supporting activities refer only to program costs charged by HOPE Center for visitors there and to living costs for HOPE headquarters staff while travelling, and thus are distinct from site-related program expenses.

11. Miscellaneous

    Dues
    Insurance
    Misscellaneous
    Gain/Loss Exchange

Miscellaneous costs are relatively minor.

12. Support Costs

    Support Costs

This category, a major part of the training budget, reflects the share of Project HOPE expenses incurred for the support of the St. Lucia OPG program. This includes costs such as those for program staff at HOPE Center; acquisition of goods, temporary warehousing, and preparation of shipments; headquarters printing costs; and overhead. These expenses are based on the proportion of the organization's total professional staff working that was working in St. Lucia each month. The category thus covers the costs of "program overhead," but is not established in the same way as a true overhead rate. Of the total amount, Project HOPE charges approximately 10% to the AID operational program grant. A prorated adjustment was made for a one-month time lag in recording the AID portion.

For the assignment of on-going costs, categories 1-6 are included within "recurrent costs" and categories 7-11 within "fixed costs." These groups are combined within "direct costs" for the assignment of start-up expenses. Support costs, item 12, are treated as a separate category in both of these areas.

The HOPE accounting system provides a reasonably straightforward basis from which to assign costs in these categories. The major ambiguities lie in the Fixed Assets, Supplies, and Donated Materials category, which do not permit a clear distinction to be made between the Equipment and Supplies categories used in this analysis. The estimates made are judged to be reasonably accurate, however, and in any event the overall total remains the same.

B. Allocation of AID and HOPE Costs

Costs within the budget categories listed above were assigned to the Environmental Health Sciences or Dental Health Sciences programs based on information supplied by Project HOPE. For most budget items, particularly recurrent and support costs, this was done according to the relative proportion of St. Lucia faculty time in the two programs, computed quarterly.[1] Other items were split using different rules:

1. Faculty costs to Project HOPE all went to DHS (Dr. C. Hadden).

2. Freight costs were allocated in correspondence to the designation of the items that were shipped in each quarter.

3. Program Travel was allocated using a long-term 2:1 EHS/DHS ratio.

4. Relocation and Home Leave costs were assigned according to the function of the staff for whom they were incurred.

5. Fixed Assets, Donated Equipment, and Donated Books were split based either on knowledge of specific items or on the long-term 2:1 ratio.

6. HOPE Headquarters Charges for the 3/81 quarter were divided 2:1, to account for the December 1980 Program Council meeting at HOPE Center.

Start-up and on-going costs were distinguished according to the date at which training began: the 6/81 quarter for EHS, and the 12/81 quarter for DHS. An exception was made for Donated Equipment, chiefly dental clinic items that were all assigned to start-up, and associated freight costs.

---

[1] These proportions were as follows:

Quarter ending 12/31/80:	100% EHS
3/31/81:	100% EHS
6/30/81:	70.5% EHS, 29.5% DHS
9/30/81:	58.9% EHS, 41.1% DHS
12/31/81:	61.4% EHS, 38.6% DHS
3/31/82:	61.5% EHS, 38.5% DHS
6/30/82:	69.1% EHS, 30.9% DHS

EHO and EHA costs were split on a proportional basis, in recognition of the practical difficulty of separating these expenses. For the start-up period, 70% of EHS costs went to EHO and 30% to EHA, following the ratio of student-months in the period under study. (These amounts would have to be recalculated if the study period was to be extended). On-going expenses were split 1:1 during the three quarters of EHA training (4/81 to 12/81), based on HOPE staff judgment of roughly equivalent resource utilization over that period. The costs of the Dental Hygienist and Dental Nurse programs were not separated.

C. Host Government Inputs

The Government of St. Lucia contributed clerical help (through 6/81),[2] custodial services (cleaning and watchman), electrical and gas utilities, classroom and office space, and program housing (two apartments) to the training programs at the Morne Complex. Values were assigned to these inputs using information supplied by HOPE staff, as indicated in monthly Host Participation Reports. Amounts attributable to the HOPE Pharmacy training program were deducted, at the rate of 25% for clerical help and office space, 50% for housing, and 33% for other items. The remainder was allocated among programs and program periods using the faculty-time ratios set out above, with the exception of classroom space which was used exclusively by EHS.[3]

D. Student Support and Travel

Living costs in St. Lucia for trainees were estimated by Project HOPE staff to average $278 (or EC $750) per month (see Table 3-1). Fellowships were provided under the AID grant in the amount of $248 (EC $670) per month to all of the EHO students from other islands, leaving $30 (EC $80) per month to be covered by the students themselves. (This may have been done through other sources, of course, such as government or family support). A full stipend was shared among the 3 St. Lucian students in the second EHO class. EHA and Dental Hygienist students received no stipend; the two dental nurse students received the monthly fellowship during their 8-month period in St. Lucia (through 5/81) as well as after they had transferred to Trinidad.[4] Total and per-student costs for student support were calculated for each program as shown in Table 3-2.

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2 The St. Lucia government was also to have provided additional clerical staff to the program, but this was not received during the period under study.

3 DHS instruction was received at a government clinic in Castries. Costs were not assigned for the use of this space since it occurred on a part-time basis while normal activities were taking place there. Donated dental equipment has been retained by the clinic.

4 The cost of one of these stipends was reimbursed by an outside source; this does not substantially affect the calculation.

TABLE 3-1

CALCULATION OF STUDENT MAINTENANCE COSTS
ST. LUCIA TRAINING PROGRAMS

	Monthly Cost Estimate					
	TOTAL		FELLOWSHIP (AID)		REMAINDER	
ITEM	$EC	$US[1]	$EC	$US	$EC	$US
Housing	300	111.11				
Meals	250	92.59				
Local Transportation	50	18.52				
Supplies	10	3.70				
Miscellaneous	140	51.85				
TOTAL[2]	$750	$277.78	$670	$248.15	$80	$29.63

NOTES: 1. Conversion calculated at $1 US = $2.7 EC.
2. Figures may not add to totals due to rounding.

SOURCE: Data provided by St. Lucia program staff (see text).

TABLE 3-2

TOTAL AND PER STUDENT MAINTENANCE COSTS
ST. LUCIA, BY PROGRAM

PROGRAM/GROUP	Enrolled Students	No. of Months	Student Months	COSTS Fellow-ship	Remainder	TOTAL[1]
EHO						
5/81 Class	13	14	182	$45,163	$ 5,393	$50,556
1/82 Class						
(Other LDC)	13	6	78	19,356	2,311	21,667
(St. Lucia, @ 1/3 Stipend)[2]	3	6	18	1,489	3,511	5,000
TOTAL EHO				66,007	11,215	77,222
Cost Per GE Student				4,783	813	5,596
EHA						
(No Stipend)	40	3	120	---	33,333	33,333
Cost Per GE Student				---	833	833
DHS						
Dental Hygienist	6	10	60	---	16,667	16,667
Dental Nurse	2	9[3]	18	4,467	533	5,000
TOTAL DHS				4,467	17,200	21,667
Cost Per GE Student				843	3,245	4,088

NOTES:
1. Figures may not add to totals due to rounding.
2. One stipend was shared between the three St. Lucian EHO students.
3. These students transferred to school in Trinidad after 8 months in St. Lucia, with continued fellowship support.

SOURCE: Project HOPE budget and program data; author's calculations.

The program grant also provided one round-trip airfare per year of instruction to all non-St. Lucian EHO students. Because ticket costs vary for different islands, figures supplied by Project HOPE in St. Lucia were used. Airfare costs for the Dental Nurse Students were covered as well.

E. Calculation of Output Measure

As described in the text, a variable was constructed to represent the effective student output of the St. Lucia training program through the end of the study period.[5] This "graduate-equivalent" number was computed separately for the two EHO classes, owing to their different duration, and these were totalled. For the EHA program, all 40 training graduates were counted. The two classes of dental trainees were treated in combination similarly to the EHOs. These calculations are shown in Table 3-3.

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[5] Only enrolled students are counted, although there was one auditor in the Dental Hygienist course. This results in some understatement of total cost-effectiveness, although its quantitative significance cannot be estimated.

TABLE 3-3

CALCULATION OF "GRADUATE-EQUIVALENT" OUTPUT MEASURE

Program	Enrolled Students	Program Duration[1]	Months Completed[2]	G.E.[3]
EHO				
5/81 Class	13	19 months	14	9.6
1/82 Class	16	23 months	6	4.2
TOTAL EHO				13.8
EHA	40	3 months	3 months	40.0
DHS				
Dental Hygienist	6	13 months	10	4.6
Dental Nurse	2	23 months	8	0.7
TOTAL DHS				5.3

NOTES: 1. Rounded to the nearest number of months.
2. As of June 30, 1982.
3. G.E. = Number of students enrolled x $\frac{\text{Months Completed}}{\text{Program Duration}}$ (see text).

SOURCE: Project HOPE budget and program data; author's calculations.

ANNEX 4

COST-EFFECTIVENESS OF ST. LUCIA EHA AND DHS TRAINING PROGRAMS

Tables 4-1 and 4-2 provide additional information on the cost-effectiveness of training conducted under the AID program grant in St. Lucia. These costs were eliminated in the calculation of total and per student costs for EHO training, but because of the common utilization of many resources in all of the training activities it is useful to consider the Environmental Health Aide (EHA) and Dental Hygienist/Dental Nurse (DHS) programs along with the EHO. Basic comparisons between these sets of costs have been presented in Chapter III.

Table 4-1 shows the full economic costs of EHA and DHS training, from all sources. For the 40 students who completed the 10-week course, total on-going costs of $3,400 per trainee were allocated predominantly to recurrent (59%) and support (34%) expenses. Of the $2,000 per student in recurrent costs, approximately $800 per student went for faculty and management personnel. A similar amount (24% of the total) went for student maintenance, all of this paid for by the student or other outside sources. Transportation expenses were 7% of the total, or $250 per student. Of the $200 per student going for fixed costs (6% overall), most was absorbed by facilities. The $1,700 per student in start-up costs were distributed similarly to those for the EHO program, with some 10% each ($200 per student) used for faculty, transportation, and equipment. 34% of on-going costs and 50% of start-up costs, totalling $2,000 per student, went for Project HOPE support expenses.

On-going costs for the combined Dental Hygienist and Dental Nurse programs were substantially higher, at $31,400 per enrolled student for training averaging 15 months in duration. The 49% going for recurrent costs ($15,300 per student) was used chiefly for faculty ($5,000 per student) and student maintenance ($4,300 per student). Fixed costs were relatively low, as in the other programs, with the majority going for clinical and other equipment ($1,700 per student) and the library ($1,100 per student). Of the $21,000 in dental start-up costs, nearly 29% ($6,000 per student) represents the provision of equipment, much of it donated through Project HOPE for use by the students in a government clinic; this was subsequently turned over to St. Lucia.

Examining the contribution made by different sources to these programs in Table 4-2, it is seen that AID inputs fell consistently in the range of 30-40% of the total amounts, mostly for recurrent items, with 2-4% of program totals going for Project HOPE support costs. HOPE contributed on average 60% of start-up costs and 40% of on-going costs, including for DHS 13% of on-going expenses and 39% of start-up. Student inputs for

TABLE 4-1

FULL ECONOMIC COSTS OF EHA AND DHS TRAINING
ST. LUCIA
PER STUDENT ($US AND % OF TOTAL)

	EHA PROGRAM				DHS PROGRAM			
	ON-GOING		START-UP		ON-GOING		START-UP	
Recurrent Costs								
Faculty	456	(13.2)	171	(10.4)	4,970	(15.8)	2,211	(10.5)
Program Management	381	(11.1)	86	(5.2)	2,444	(7.8)	2,203	(10.5)
Supplies	73	(2.1)	21	(1.3)	1,279	(4.1)	403	(1.9)
Transportation and Travel	252	(7.3)	173	(10.5)	2,032	(6.5)	3,152	(15.0)
Operation and Maintenance	23	(0.7)	12	(0.7)	167	(0.5)	75	(0.4)
Communications	23	(0.7)	23	(1.4)	178	(0.6)	121	(0.6)
Student Support and Travel	833	(24.2)	---		4,251	(13.5)	---	
Subtotal Recurrent	2,041	(59.2)			15,320	(48.8)		
Fixed Costs								
Facilities	143	(4.1)	24	(1.5)	470	(1.5)	157	(0.7)
Equipment	39	(1.1)	173	(10.5)	1,653	(5.3)	6,022	(28.7)
Library	37	(1.1)	120	(7.3)	1,058	(3.4)	1,275	(6.1)
Supporting Activities	8	(0.2)	30	(1.8)	54	(0.2)	397	(1.9)
Miscellaneous	7	(0.2)	1	(0.1)	79	(0.3)	50	(0.2)
Subtotal Fixed Costs	234	(6.8)			3,314	(10.6)		
Subtotal Direct Costs	2,275	(66.0)	833	(50.5)	18,634	(59.4)	16,065	(76.6)
Support Costs	1,172	(34.0)	817	(49.5)	12,746	(40.6)	4,914	(23.4)
TOTAL COST*	3,447	(100.0)	1,650	(100.0)	31,380	(100.0)	20,979	(100.0)

* Figures may not add to totals due to rounding.
SOURCE: Project HOPE budget data; author's calculations.

TABLE 4-2

ECONOMIC COSTS OF EHA AND DHS TRAINING
ST. LUCIA
PER STUDENT, BY SOURCE ($US AND % OF TOTAL)

	AID OPG		HOPE		GOSL		STUDENT		TOTAL	
EHA										
On-Going Costs										
Recurrent	907	(26.3)	166	(4.8)	135	(3.9)	833	(24.2)	2,041	(59.2)
Fixed	59	(1.7)	36	(1.0)	140	(4.1)	---		234	(6.8)
Support	112	(3.2)	1,060	(30.8)	---		---		1,172	(34.0)
TOTAL On-Going	1,078	(31.3)	1,262	(36.6)	274	(7.9)	833	(24.2)	3,447	(100.0)
Start-Up Costs										
Direct Costs	491	(29.8)	269	(16.3)	73	(4.4)	---		833	(50.5)
Support	73	(4.4)	744	(45.1)	---		---		817	(49.5)
TOTAL Start-Up	564	(34.2)	1,013	(61.4)	73	(4.4)	---		1,650	(100.0)
DHS										
On-Going Costs										
Recurrent	8,661	(27.6)	2,346	(7.5)	1,002	(3.2)	3,311	(10.6)	15,320	(48.8)
Fixed	1,509	(4.8)	1,483	(4.7)	322	(1.0)	---		3,314	(10.6)
Support	1,293	(4.1)	11,452	(36.5)	---		---		12,746	(40.6)
TOTAL On-Going	11,463	(36.5)	15,282	(48.7)	1,323	(4.2)	3,311	(10.6)	31,380	(100.0)
Start-Up Costs										
Direct Costs	7,674	(36.6)	8,149	(38.8)	242	(1.2)	---		16,065	(76.6)
Support	494	(2.4)	4,420	(21.1)	---		---		4,914	(23.4)
TOTAL Start-Up	8,168	(38.9)	12,569	(59.9)	242	(1.2)	---		20,979	(100.00)

NOTE: Figures may not add to totals due to rounding.
SOURCE: Project HOPE budget data; author's calculations.

living costs were 24% of all on-going EHA expenses and 11% for DHS, higher than that for EHO training due to the low fellowship support in these programs. St. Lucian government inputs were small but significant, at 4-8% of on-going costs.

Although the EHA program is completed, this cost pattern appears highly indicative of what would be experienced if the training were replicated elsewhere under similar arrangements. In contrast, many unforeseen problems were encountered in the DHS programs, leading to much lower enrollment and higher unit costs than had been anticipated; this was reinforced by the heavy investments that were made in personnel and equipment.

ANNEX 5

BARBADOS COMMUNITY COLLEGE

MEMORANDUM

FROM: Principal, Barbados Community College

TO: Dr. David Parker

DATE: 1982-11-22

SUBJECT: E.H.O. TRAINING AT BARBADOS COMMUNITY COLLEGE - AN ESTIMATED PER CAPITA COST

A breakdown of the estimated cost of training of an Environmental Health Officer at the Community College is submitted below as requested by you in our telephone conversation on Thursday, November 18.

	Year 1	Year 2
A. Tuition Fees	$ 1,500	$ 1,500
B. Registration Fee	$ 50 p.a.	
C. Board & Lodging	$ 7,200	$ 7,200 p.a.
D. Pocket Allowance	$ 900	$ 900 p.a.
E. Learning Materials	$ 250	$ 150 One payment
F. Commuting	$ 300	$ 300 p.a.
G. Air Passage (Arrival)	$ 250	
G. Air Passage (Departure)		$ 250 One payment
H. Miscellaneous (such as Student Guild fees, I.D. cards, approved projects)	$ 100	$ 150
TOTAL BDS	$10,550	$10,450

A. Tuition fees are paid to the College in advance annually or in three termly instalments.

C, D, F are paid to the student monthly.

B is paid to the College at the commencement of training.

E is paid to the student at the commencement of each year of study.

Students who need to spend a preliminary year supplementing their general education will not need the same kind of allowance for learning materials but I see no reduction in their case of the items listed as A, B, C, D, F, G.

A. F. E. Barnett

ANNEX 6

REFERENCES

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