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Report No. 8787

PROJECT COMPLETION REPORT

BARBADOS

**EDUCATION PROJECT
(LOAN 1642-BAR)**

JUNE 25, 1990

**Population and Human Resources Operations Division
Country Department III
Latin America and the Caribbean Regional Office**

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GLOSSARY

BIMAP	-	Barbados Institute of Management and Productivity
ETTC	-	Erdiston Teacher Training College
FY	-	Fiscal Year of Bank (07/01 to 06/30)
GFY	-	Government Fiscal Year (04/01 to 03/31)
IBRD	-	International Bank for Reconstruction and Development
MOE	-	Ministry of Education
MOF	-	Ministry of Finance
PCR	-	Project Completion Report
PIU	-	Project Implementation Unit
SAR	-	Staff Appraisal Report
UNESCO	-	United Nations Educational, Scientific and Cultural Organization
UWI	-	University of West Indies

Currency Exchange Rates

Jamaican Dollar per US\$ (Period Average):

1980	-	1.7814
1981	-	1.7814
1982	-	1.7814
1983	-	1.9322
1984	-	3.9428
1985	-	5.5586
1986	-	5.4778
1987	-	5.4867
1988 (May)	-	5.4872

Fiscal Year

April 1 - March 31

Office of Director-General
Operations Evaluation

June 25, 1990

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT

SUBJECT: Project Completion Report: BARBADOS - Education Project
(Loan 1642-BAR)

Attached, for information, is a copy of a report entitled "Project Completion Report: Barbados - Education Project (Loan 1642-BAR)" prepared by the Latin America and the Caribbean Regional Office, with Part II of the report contributed by the Borrower. No audit of this project has been made by the Operations Evaluation Department at this time.

A handwritten signature in black ink, appearing to be 'P. H. H. H.', is written over the signature line.

Attachment

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PROJECT COMPLETION REPORT

BARBADOS

EDUCATION PROJECT (LOAN 1642-BAR)

PREFACE

This is the Project Completion Report (PCR) on the Education Project in Barbados, for which Loan 1642-BAR of US\$9.0 million was approved on December 19, 1978. A supplementary loan of US\$3.0 million was approved by the Board on August 30, 1983 and the original Closing Date of December 31, 1983 was postponed to September 30, 1985. The loan proceeds were completely disbursed on May 29, 1986 on which date the loan account was closed.

The PCR was prepared by the Population and Human Resources Operations Division, Country Department III, Latin America and the Caribbean Regional Office (Parts I and III), and the Borrower (Part II).

The PCR is based on the findings of the Bank project completion mission to Barbados during February 1989, discussions with Government officials involved with the project, and data from the project files in the Bank.

PROJECT COMPLETION REPORT

BARBADOS

EDUCATION PROJECT (LOAN 1642-BAR)

EVALUATION SUMMARY

Introduction

1. This was the first IBRD assisted education and training project in Barbados. It was appraised in July 1978 and approved in December 1978. Total costs were estimated at US\$14.48 million, of which US\$9.00 million was financed by an IBRD loan. This project required 7.25 years for completion, in contrast to the planned 5.0 years. The loan was closed on September 30, 1985. In scope the project remained essentially as planned; however, because of higher than expected price increases in civil works and in technical assistance, the actual costs of the project at the time of completion were US\$22.43 million (55% increase).

Project Objectives and Content

2. The project addressed major educational objectives of the Government by: (a) broadening educational opportunity; (b) improving the quality and relevance of the education and training programs; and (c) enhancing the efficiency and effectiveness of the system. A loan supplement in August 1983 increased the loan amount by US\$3.0 million to cover large and unanticipated price increases. A loan amendment in September 1984 provided for the use of loan funds in the preparation of a second project for further development of the education and training system. The project included: (a) constructing, furnishing and equipping of (i) seven primary schools to replace ten obsolete and unsuitable schools in rural areas; and (ii) three primary schools on the outskirts of the capital city to serve a growing population; (b) constructing, furnishing and equipping the expansion of six existing secondary schools to provide about 2,600 science and practical training places; (c) equipping and furnishing one new secondary school, including science and practical training places for a total of 1,225 students; (d) constructing, furnishing and equipping of a new facility to house a library, a demonstration/microteaching area, a lecture theater, and a general workshop and instructional aids production area; (e) constructing, furnishing and equipping of an expansion to the Barbados Institute for Management and Productivity (BIMAP); and (f) related study-tours abroad, specialist services for teacher training, and project management and professional fees.

Implementation

3. The 22 month delay, from Loan Signing until Loan Closing, resulted from: (a) delays in civil works caused by problems in obtaining architectural specialists to finalize designs and tender documents of first phase schools, inadequate counterpart funding beginning in FY 82/83, and minor design changes in certain institutions; and (b) delays in equipment procurement caused by inadequate technical specifications of the more complex items. Other furniture and equipment procurement lagged in accordance with slower completion of civil works. Because of their extensive involvement, as counterparts in preparation of the project, key staff of participating institutions were able to play a major role in project design and implementation.

Project Results

4. Quantitative goals of the project have been essentially met, except as affected by an unanticipated decline in school age population and lower demand for new teachers; and a lower demand for in-plant training and overall employment opportunities because of recession in key industries. The moderate decline in school age population, combined with a scarcity of alternative employment opportunities for teachers, had a negative impact on the goal of decreasing the teacher-student ratios and the associated reductions in unit recurrent costs. As decreases in the teacher-student ratios were planned to be made through teacher attrition, rather than massive "layoffs", this goal will only be achieved gradually.

Project Sustainability

5. When the planned teacher-student goals are reached, the recurrent costs of the project schools will be about 11% less than before the project. As the economy continues to recover, it is expected that attractive employment alternatives for the younger teachers will result in the teacher-student goals being met in the early 1990's. This aspect, along with the qualitative improvements already being experienced, helps assure the sustainability of the primary and secondary school components of the project. Although the management training institute's expanded programs have increased its recurrent costs by about 40%, the high level of participation during the past 16 years of its membership of some 400 private and public firms clearly indicates their continuing commitment in assuring its financial sustainability.

Principal Lessons Learned

6. The major lessons learned, or again confirmed, as a result of the experiences during project implementation are summarized as follows:

- (a) Thorough and well-documented preparation and appraisal, that may build on the extensive participation of key staff of project institutions, is an important factor in the successful implementation of any project. Nevertheless, for this first education and training project, a project launch workshop, with Bank and borrower staff, might have helped identify potential implementation problems and action for their timely resolution.
- (b) Local price contingencies for civil works proved unrealistically low, in part, because of excess demand in the construction industry. Appraisal staff and their country counterparts must seek to inform themselves fully of both government and large private investment plans, especially in small island economies such as Barbados subject to supply constraints, and evaluate their inflationary implications on civil works costs during the project implementation period.
- (c) Specialized staff, such as educators appraising the project should, ideally, continue their supportive role via project supervision during, at least, the first two years. This is necessary to assure that initial implementation of the technical aspects of the project are fully understood and start well. For the same reason, supervision missions should be fielded at appropriate and, generally, uniform intervals.
- (d) The specifications and grouping of complex equipment and most of the power tools in vocational-technical education and training require comprehensive review in the field, with those who have prepared them, by competent technical educators to assure successful tendering.

PROJECT COMPLETION REPORT

BARBADOS

EDUCATION PROJECT (LOAN 1642-BAR)

PART I. PROJECT REVIEW FROM BANK'S PERSPECTIVE

A. Project Identity

- Project Name: Education Project
- Loan No.: 1642-BAR
- RVP Unit: Latin America and Caribbean Region,
Country Department III
- Country: Barbados
- Sector: Education
- Subsectors: Primary; Secondary General and Technical;
Teacher Training; Industrial Management and
Productivity Training

B. Project Background

1. Sector Development Objectives (At time of project appraisal). The major education policy objectives of the Government were: (a) equalization of educational opportunity through extension of education to all up to age 16, and provision of sufficient places at the secondary school level for all graduates of primary schools; (b) modernization and re-direction of secondary educational content through greater emphasis on training, and expanded and improved resources for science and other practical studies; and (c) improved efficiency in order to realize the above aims without increasing the relatively high costs of the education and training system.

2. Basic Strategy and Policy Context. The basic strategy in achieving the modernization and re-direction of the educational system was to: (a) help improve quality, especially by raising teacher competence and increasing instructional aids; and (b) simultaneously introduce cost-effective measures to assure more economical use of resources in the overall education and training system. The Government policy of development of a well-educated and appropriately skilled labor force has resulted in the assignment of high priority to vocational and technical training relevant to the needs of the country's industrial development, and to the development of a broader based secondary education system. The IBRD assisted project complemented the assistance provided by IDB and other multilateral and bilateral agencies for the development of skilled worker and technician level training, curriculum development, industrial management and in-plant training programs; and has helped achieve the major policy objectives.

3. Linkages Between Project, Sector and Macro Policy Objectives. The project's emphasis, as set forth in paragraphs 1 and 2, clearly supported the attainment of the Government's central policy objectives of: (a) strengthening the manufacturing sector; (b) diversifying agricultural production to, among other purposes, help reduce food imports; and (c) increasing revenue and return in investment in tourism.

C. Project Objectives and Description

4. Project Objectives. The project addressed the major policy objectives of the Government by: (a) broadening educational opportunity; (b) improving the quality and relevance of the educational and training programs; and (c) enhancing the efficiency and effectiveness of the system. A supplemental loan in August 1983 increased the loan amount by US\$3.0 million to cover large and unanticipated price increases, and a loan amendment in September 1984 approved financing from the loan for the preparation of a second project for further development of the education and training system.

5. Project Components. The project included: (a) constructing, furnishing and equipping of (i) seven primary schools to replace ten obsolete and unsuitable schools in rural areas, and (ii) three primary schools on the outskirts of the capital city to serve population shifts; (b) constructing, furnishing and equipping of expansions to six existing secondary schools to provide about 2,600 science and practical training places; (c) equipping and furnishing one new secondary school, including science and practical training places for a total of 1,225 students; (d) constructing, furnishing and equipping of a new facility at the Teacher Training College to house a library, a demonstration/micro-teaching area, a lecture theater, and a general workshop and instructional aids production area; (e) constructing, furnishing and equipping of an expansion to the Barbados Institute for Management and Productivity (BIMAP); and (f) related study-tours abroad, specialist services for teacher training, project management, professional fees and project preparation. Project results are detailed in Table 9 of Part III.

D. Project Design and Organization

6. A total of 29.8 staff weeks in the field over a 12 month period was utilized by four different missions, comprised of six staff specializations, in the identification and preparation of the project (Table 13). This phase was followed, after a two month lapse of time, by a 9.4 staff weeks appraisal mission. The 39.2 staff weeks of preparation and appraisal activities led to the development of a clear conceptual foundation for the project. The extensive participation of key staff of the project institutions resulted in full agreement and understanding by all relevant parties. During the process of appraisal the scope of the project was modified and reduced in accordance with a better understanding of the country's financial capacity.

7. The project was innovative in that it initiated the process of amalgamation of small uneconomic, ill-housed, poorly equipped and inadequately managed primary schools. These were replaced by an appropriate lesser number of newer and larger primary schools having enhanced internal efficiency and improved quality and relevance of instruction. By the time of Loan Closing on September 30, 1985, the success of this process was sufficiently apparent that a second project, including a component to further expand the amalgamation of small primary schools, was approved for appraisal; and a loan (Loan 2688) was signed on May 21, 1986.

E. Project Implementation

8. Critical Variances in Project Implementation. The major factors responsible for the nearly three years delay in the completion of civil works were: (a) inability of the PIU to obtain appropriately qualified local architectural staff for prompt design of first phase institutions; (b) designs and bidding documents for four first phase institutions, to be tendered during August 1978 to June 1979, were so slow in preparation that tendering actually took place during December 1979 to March 1981 or 6 to 21 months later than planned (see Table 1, Annex 3); (c) minor delays encountered in procurement of sites for nine of the ten primary schools and for the management training center; (d) revision of designs for the management training center resulting from conceptual differences between the PIU Manager and the Director of BIMAP with respect to the type of facilities to be constructed; (e) a sharp increase in unit costs of civil works which occurred during a period of high demand in the construction industry and rapid increase in construction costs, and which affected 15 of the 17 institutions requiring construction; and (f) as economic conditions worsened, a shortage of counterpart funding of civil works beginning in FY 82/83. Project implementation ultimately required 22 months beyond the originally estimated 60 months after Loan Signing. About 20% of the equipment for the secondary schools and BIMAP was not received until about 18 and 42 months respectively after the completion of civil works. Delays in equipment procurement were caused by difficulty in obtaining bids through ICB, due, in some measure, to inadequate specifications.

9. The Bank supervision of project implementation was uneven. There was no architect on a field mission during the 25 month period between December 1980 and January 1983 (Table 5) when most civil works problems were occurring. However, it cannot be said with any certainty that the presence of an architect could have had a significant positive effect. While the Bank discussed with the Government the cash flow problem created by escalating costs, it is not likely that any other feasible actions could have been taken at the time, especially in view of the grave financial conditions of those years.

10. Project Risks. The three major risks in project implementation were correctly identified. Of these, both the failure to introduce more cost-effective norms in regard to teacher-student ratios, and difficulty in the recruitment of architectural staff for the design of civil works were

realized. In regard to the former, no improvement was made in the 1:21 teacher-student ratio in primary schools, with actual performance falling 28% short of the goal of 1:29 (Table 9). Performance in the secondary schools was only marginally better, with a shortfall of 22% in the 1:23 goal. Because of a tight market for architects and related staff in Barbados, the perceived risk in the recruitment of architectural staff quickly became real. Although the government had taken action to have posts created and funds appropriated at time of appraisal, it was not until early 1982 that these staff positions were filled. The major problem of counterpart funding, and the contributory large price increases in civil works, were not foreseen.

11. Actions Taken or Not Taken Which Affected Implementation. In view of the problems in the recruitment of architectural/civil works design staff and resulting delays in designs and contracting (Annex 3, Table 1), it is probable that it would have been more cost effective to have contracted most of the design work.

F. Major Results of Project (Refer Part III Table 9)

12. Project Objectives. With the exception of teacher-student ratio goals, and the associated improvements in recurrent costs, project objectives were largely met. It was intended that the increase in the number of students per teacher would be primarily reached through teacher attrition. However, attrition rates during the course of project implementation have been significantly less than expected because deteriorating economic conditions in Barbados resulted in fewer alternative employment opportunities for the relatively young teaching force. When the economy recovers it is expected that the attrition rate will quickly expand. Quantitative goals have been essentially met, except as affected by: the decline in school age population and a correspondingly lower demand for teachers; and a lower demand for in-plant training, and overall employment opportunities, because of a recession in key industries.

13. Impact of Project. The project has had a positive effect on sectoral growth and policy attainment, and on manpower, employment and industrial development as discussed below. (a) Sectoral growth and policy attainment have been aided through: the development of an institutional base for attainment of the policy goals of consolidation of small and inefficient rural primary schools with inadequate and obsolete physical facilities into larger, better designed, equipped and staffed, and more efficient primary schools. (b) Manpower, employment and industrial development has been enhanced through expanding and upgrading of practical training and the teaching of science in the upper secondary school system; upgrading and expanding management training for both the private and public sectors; assisting individual firms in developing and operating in-plant training schemes (Table 9); and providing special training assistance to small businesses and entrepreneurs.

G. Project Sustainability

14. When the planned teacher-student ratio goals are reached, the recurrent costs of the primary and secondary school components will be about 11% less than those at the pre-project ratios. As the economy recovers, employment alternatives for teachers will, over the short and medium term, result in the teacher-student goals being met in the early 1990's. This aspect, along with the qualitative improvements already being experienced, assures the sustainability of these components of the project. Although the recurrent costs of BIMAP'S expanded programs have increased about 40%, the continuing high level of participation of its membership of some 400 private and public firms clearly indicates their continuing commitment in assuring its financial viability. The willingness of its management and trainees in courses on productivity to pay fees, equal to about 35% of the total recurrent costs, further attests to the financial sustainability of BIMAP.

H. Bank Performance

15. Major Strengths and Weaknesses. The Bank, with the UNESCO Cooperative Program's assistance, prepared and appraised the project. The general thoroughness of these activities, and the extensive participation of key staff of the project institutions, resulted in national education and training administrators having an in-depth knowledge of the project. This knowledge was undoubtedly a major factor contributing to the local team's above average performance in project implementation. It was especially important in view of the Bank's uneven record in fielding adequately staffed supervision missions. The major discernible weakness in the appraisal process was in the Bank team's failure to evaluate correctly existing and potential inflationary strains on civil works costs during 1979-82, resulting in under-estimation of annual price increases by about 100%.

16. Supervision missions were fielded at erratic intervals. The time intervals between the eight missions, over a seven-year period, were: 5-5-12-17-8-14-12 months respectively (Table 5). With a norm of 6 month intervals, the project should have had about 14 supervision missions. Further compounding the effects of the occasional long intervals between missions, after the first year of implementation, was the lack of continuity in mission staffing. During the critical years of December 1980 through February 1984 only three one-person missions, rather than the normal eight, were fielded. The only member participating in more than two of the missions was an architect who participated in four missions over a 63 month period of time. An unfortunate consequence of the lack of continuity of mission composition is that during a one week mission a new member or one who has not been in the country for 12-18 months is obliged to devote almost full time to determining project status. In such cases, more detailed and critical analysis or effective guidance and support are not possible. During the period of 1981 and 1982, no architect was fielded

by the Bank for civil works supervision and advisory assistance. Furthermore, although the major portion of the project was vocational/technical in nature, neither vocational or technical educators were on any of the supervision missions.

17. Lessons Learned. The major lessons learned, or again confirmed, as a result of the experiences during project implementation and the preparation of the PCR are summarized as follows.

- (a) Thorough and well-documented preparation and appraisal, and the extensive participation of key staff of project institutions, is an important factor in the successful implementation of any project. Nevertheless, for this first education and training project, a project launch workshop, with Bank and borrower staff, might have helped identify potential implementation problems and actions for their timely resolution.
- (b) Local price contingencies for civil works proved unrealistically low, in part, because of excess demand in the construction industry during the early project phase. Appraisal staff and their country counterparts must be fully aware of government and large private investment plans, especially in small island economies such as Barbados, subject to rapid cost increase during a period of high capacity utilization in the construction industry, and evaluate their inflationary implications on civil works costs during the project implementation period.
- (c) Specialized staff, such as educators appraising the project, should ideally continue their supportive role by means of project supervision through, at least, the first two years. This is necessary to assure that implementation of the educational aspects are fully understood and starts well. Supervision missions should be fielded at appropriate and, generally, uniform intervals.
- (d) The specifications and grouping of complex equipment and most of the power tools in vocational-technical education and training require comprehensive review in the field, with those who have prepared them, by competent technical educators to assure successful tendering.

I. Borrower Performance

18. Major Strengths and Weaknesses. A major strength of the borrower was the extensive involvement of key staff of participating institutions in preparation and appraisal of the project. The management performance of the PIU was generally satisfactory throughout the implementation cycle. This was in spite the fact that for seven extended periods of time (up to two months each) the project manager was called upon for short-term

assignments in other high level government positions. During most of these periods, however, he kept in touch with the project so that he could advise on the more important matters. Rapidly escalating costs, the borrower's financial problems and inability to recruit local or civil works design personnel, while major constraints to implementation, were largely beyond the borrower's control. Minor delays in procurement of sites for nine primary schools and BIMAP, largely because of legal problems, could probably have been alleviated had a lawyer been assigned, on a part-time basis, to the PIU. Moderate problems in equipment procurement for the phase 2 secondary schools and for BIMAP were partially a result of inadequate technical specifications and packaging. The MOE Planning Office failed to predict with sufficient accuracy a moderate decline in school enrollments, especially at the primary level. However, because of the generally deplorable state of physical facilities at the majority of the older schools, no over-investment in new facilities has resulted.

J. Project Relationships

19. Bank-Borrower Relationships. With the possible exception of the Bank architect, who participated in four missions, the continuity of participation for Bank supervision mission members was not sufficient to develop with the PIU, or other Government officials, close professional relationships essential to support timely and effective project implementation. The major lesson learned here is that continuity and composition of supervision missions are very important.

20. Borrowers Internal Relationships. A few relatively minor problems occurred in communications between the PIU Manager and the Director of BIMAP over interpretations of the intent of the Appraisal team regarding BIMAP facilities (para. 29).

K. Consulting Services

21. The local consultants recruited for the preparation of the proposed Second Education and Training Project performed satisfactorily. The proposed project data and information were quickly prepared and the project was appraised in May/June 1985. No other consultants were planned for, or were utilized, in project implementation. The specialists financed under the loan for strengthening the PIU, management team and design work, performed satisfactorily.

L. Project Documentation and Data

22. Legal Agreements. The Loan Agreement dated December 29, 1978, the Amending Agreement for the Supplemental Loan dated September 27, 1983, and the Amendment dated May 10, 1985, in order to allow for the financing of preparation activities for the Second Education Project, were all clearly

and concisely drafted. The memorandum (Special Procedure R83-262 of August 11, 1983) recommending the supplemental loan, provided clear and in-depth detail in support of the Amending Agreement, and the full justification and the financing plan for its utilization.

23. Appraisal Report and Working Papers. The Appraisal Report, the major Working Papers, and project Preparation Reports were adequate for project implementation.

24. Availability of Relevant Data to PCR Mission. A short pre-mission seminar on preparation of data for the PCR mission was conducted with key staff members during a supervision mission for Loan 2638-BAR in August 1988. Much of the data had been prepared by the time the PCR mission arrived in the field on January 18, 1989, and all was ready for review, analysis and discussion by the middle of the mission.

PART II. PROJECT REVIEW FROM BORROWER'S PERSPECTIVE

A. Adequacy and Accuracy of Factual Information in Part III

25. The project implementation data (Table 4), project costs and financing data (Tables 6 and 7), direct benefits of the project and project studies (Tables 9 and 10), and compliance with covenants (Table 11) defining the project profile at completion, were all prepared by the borrower. They were discussed thoroughly with the participating institutions while the PCR mission was in the field.

B. Evaluation of Bank's Performance and Lessons Learned

26. The Bank made significant contribution to the evolution, preparation and development, through appraisal, of the project. However, there were aspects of the supervision of project implementation which should have been strengthened. These included: supervision of the vocational-technical components by qualified specialists; earlier assistance in developing the accounting system of the PIU to better reflect the auditing and reporting requirements of the Bank; more assistance in planning and implementing the procurement of equipment. The PIU staff had to rely on short-term advice by mission members for the difficult tasks of preparation of technical specifications; grouping of equipment items into appropriate packages for tendering; and the accounting, and auditing requirements of the Bank.

27. The major lessons learned were: (a) a short seminar, conducted by the Bank staff early in the implementation cycle, would have assisted in the preparation of equipment lists, technical specifications, grouping for efficient tendering, preparation of other tender documents, and bid evaluation; thus minimizing trial and error learning, procurement delays, and price increases; (b) the PIU should make sure that it clearly understands the Bank requirement for accounting, auditing and reporting; and (c) more accurate population data must be developed to facilitate realistic projections of demand for school places.

C. Evaluation of Borrower's Own Performance and Lessons Learned

28. Considering this was the first education and training project with the Bank, the Borrower's performance was generally satisfactory. Despite the capability and commitment of the staff to meet the challenges of the project, there were some problems which weakened the quality of performance. The project suffered from a decision-making process within the Government which was often slow. There were periods when the project manager was called upon for high level short-term assignments in other government positions. In such cases the temporary managers were limited by their unfamiliarity with project and Bank procedures, and were often reluctant to make substantial decisions. Finally, PIU staff lacked familiarity,

because of no previous experience with Bank projects, of certain technical requirements of tendering and reporting.

29. The major lessons learned were: (a) to speed up the decision making process, appropriate direct linkages should be formally established between the project manager and the more relevant top decision-makers; (b) for managing a project of this size and complexity, a project manager should be able to devote his full-time attention to the project; and (c) the project manager should be appointed sufficiently early that he can participate in the project appraisal, and PIU technical staff should receive essential training on Bank procurement and reporting requirements in order to increase the prospects for timely project implementation.

PART III. STATISTICAL INFORMATION

A. Related Bank Loans

Table 1: IBRD LOANS RELEVANT TO THE PROJECT

Loan Number Project Title	Year of Approval	Purpose of Project	Status	Comments
2688-BAR Second Educ. Training	1986	Follow-up to Educ. I, further upgrading of primary and secondary; expansion and/or up-grading of: post- secondary technical training; non-formal training; and manpower research; and improve educational planning and management in MOE.	Under imple- mentation	Implementation proceeding well. Cofinanced by IDB

B. Project Timetable

Table 2: PLANNED, REVISED AND ACTUAL DATES OF PROJECT TIMETABLE

Item	Planned Date	Revised Date	Actual Date
Identification I	5/77	--	5/77
Identification II	7-8/77	--	7-8/77
Preparation I	3/78	--	3/78
Preparation II	5/78	--	5/78
Appraisal Mission	6/78	--	7/78
Loan Negotiations	10/78		10/25/78
Board Approval	2/79	--	12/19/78
Loan Signing	--	--	12/29/78
Loan Effectiveness	12/78	--	12/29/78
Project Completion	12/82	12/84; 6/85; 9/85	9/01/85
Loan Closing	12/83	9/30/85	9/30/85
Supplemental Loan:			
Negotiations	7/83	--	7/21/83
Board Approval	8/83	--	8/30/83
Loan Signing	--	--	9/27/83
Effectiveness	12/83	2/28/84	2/07/84
Loan Closing	9/85	--	9/30/85

30. Comments on Timetable. The thorough identification and preparation of the project enabled it to be appraised and processed through Loan Signing with an elapsed time of only five months. As there were no Conditions of Effectiveness, project implementation was initiated immediately after Loan Signing. However, by the end of FY79 implementation progress was beginning to drop behind schedule, and by the end of the first quarter of FY81 the inevitable effects of an approximate 85% increase in construction costs were of serious concern (para. 31). This problem ultimately led to the necessity of a supplemental loan approved by the Board on August 30, 1983 and extension of the Loan Closing Date to September 30, 1985.

C. Loan Disbursements

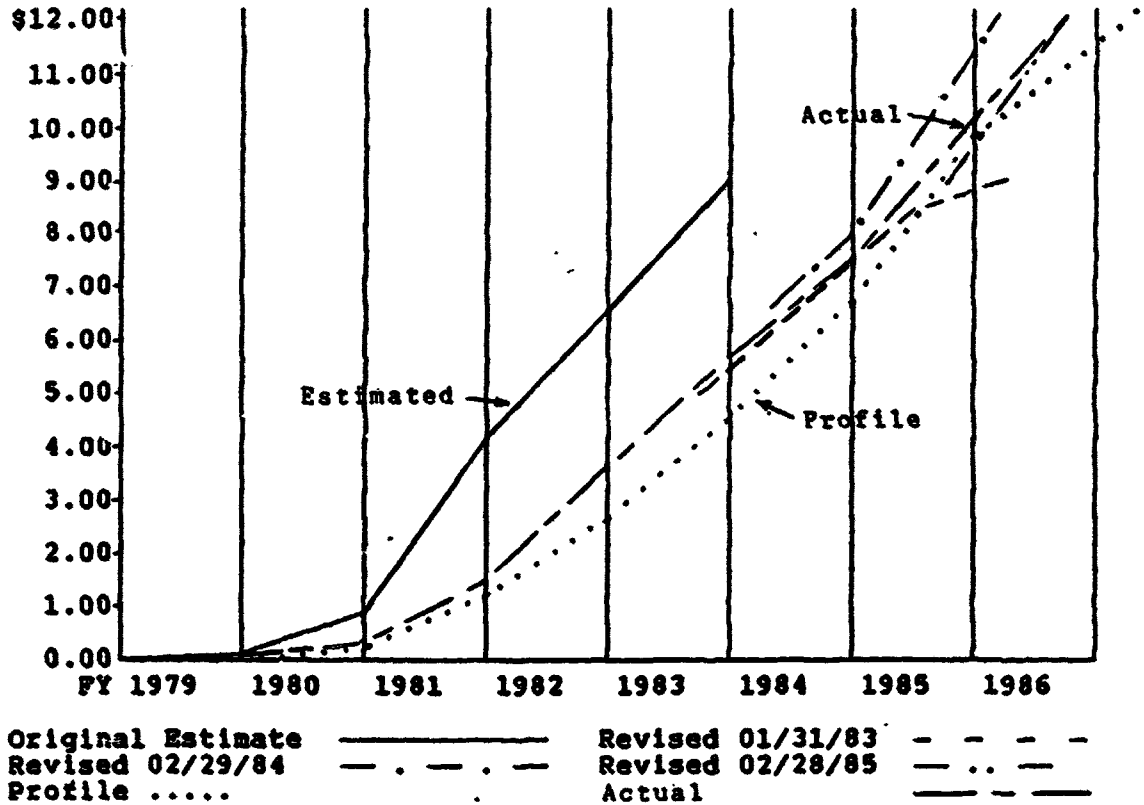
Table 3: CUMULATIVE ESTIMATED AND ACTUAL DISBURSEMENTS (US\$million)

	1979	1980	1981	1982	1983	1984	1985	1986
Estimate (Original)	0.04	0.86	4.15	6.43	9.00	-	-	-
Estimate (Supplemental) -US\$3 million	-	-	-	-	-	7.80/a	9.80/a	12.00
Actual	0.02	0.23	1.40	3.55	5.67	7.36	10.14	12.00
Actual as % of Estimate	50	27	34	55	63	94	103	100

Date of Final Disbursement: 05/29/86

a/ PCR estimates as they were not estimated in Amendment of 09/27/83 in Memo to Board of 08/11/83.

Time Line of Planned, Revised and Actual Disbursement Schedule



D. Project Implementation

Table 4: PLANNED AND ACTUAL COMPLETION DATES OF COMPONENTS

Project Components	Planned Completion	Actual Completion	Months of Delay
<u>Civil Works</u>			
Primary Schools (10 new):			
Group 1 (2)	03/81	10/81	7
Group 2 (8)	09/82	05/85	32
Secondary Schools (6 expansions):			
Group 1 (2)	12/81	09/82	9
Group 2 (4)	09/82	06/85	33
Other Institutions:			
Teacher Training College (1 bldg.)	09/81	02/82	5
Management Institute BIMAP (1 bldg.)	09/81	12/82	15
<u>Furniture and Equipment</u>			
Primary Schools (10):			
Group 1	03/81	09/82	18
Group 2	09/82	12/85	39
Secondary Schools (7):			
Group 1	03/81	06/82	15
Group 2	09/82	12/86	51
Other Institutions:			
Teacher Training College	09/81	03/82	6
Management Institute	09/81	09/85	48
Consultant and Specialist Services and Fellowships	06/80	05/86	59

31. Comments on Project Implementation. Delay in completion of civil works falls into two groups: 5 to 9 months; and 15 to 33 months. The former delay occurred early in the implementation cycle as construction costs began to rise. The latter, and much longer delay occurred between mid-1981 and the end of 1984 as a result of a re-phasing of public expenditures (para. 32). The escalation in costs led to the Government and the Bank negotiating the aforementioned supplemental loan, without which about one-third of the schools would have been dropped from the project. The delays in procurement and installation of furniture and equipment generally resulted from delays in civil works. The delays in consultant and specialist services and fellowships, which included support to the PIU, were a result of the failure to identify qualified consultants within the Caribbean Region and contract extensions, with corresponding higher costs, caused by delay in the civil works and other components. By the end of FY83 more than 120% of the funds allocated for this purpose under the loan had already been utilized, but many requirements remained unmet and supplemental financing was sought. The data in Table 5 shows that Bank supervision of project implementation was uneven after the first year, with a 12 month lapse between the third and fourth missions and a further 17 month lapse until the fifth one. From the beginning of CY1981 through project completion on September 1, 1985 only four missions were fielded with an average of 13 months between missions. Despite the above problems, the rate of project disbursements were consistently ahead of the LAC profile by an average of 20%.

Table 5: SUPERVISION MISSION FREQUENCY, STAFF PARTICIPATION, AND PERFORMANCE RATING

Mission	Month/ Year	Intervals in Months	No. of Persons ^{1/}	Staff Weeks (Field)	Performance Rating by Activity ^{2/}
					<u>S P M F</u>
Superv. I	2/79		2(GE,CE)	2.0	1 1 1 1
Superv. II	7/79	5	1(CE)	1.0	1 1 1 1
Superv. III	12/79	5	2(A,GE)	2.4	1 1 1 1
Superv. IV	12/80	12	1(A)	1.0	1 1 1 1
Superv. V	5/82	17	1(GE)	1.0	2 2 1 2
Superv. VI	1/83	8	1(A)	1.0	2 2 1 2
Superv. VII	3/84	14	2(GE,FM)	2.0	2 2 1 2
Superv. VIII	3/85	12	2(A,GE)	<u>2.0</u>	1 1 1 1
TOTAL				<u>12.4</u>	
Completion	2/89		1(TE,IS)	2.0	

^{1/} A=Architect; CE=Civil Engineer; GE=General Educator; TE=Technical Educator
IS=Implementation Specialist; FM=Financial Management Specialist.

^{2/} S=Overall project status; P=Procurement progress status; M=Management
performance status; F=Project finance status.

E. Project Costs and Financing

**Table 6: PROJECT COSTS (US\$ million)
(Including Contingencies)**

Category of Expenditure	Estimated Costs ^{1/}			Revised Costs ^{2/}			Actual Costs ^{3/}		
	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total
1-Civil Works	4.77	6.60	11.37	6.96	8.75	15.71	7.62	8.94	16.56
2-Furniture & Equipment	0.61	1.93	2.54	0.14	2.34	2.48	0.64	1.86	2.50
3-Technical Assistance	0.14	0.43	0.57	0.30	0.90	1.20	0.84	2.52	3.36
4-Fees	--	--	--	--	0.01	0.01	--	0.01	0.01
Total Costs	5.52	8.96	14.48	7.40	12.00	19.40	9.10	13.33	22.43

- ^{1/} From Capital Costs table on page 30 of SAR, second line from bottom, with B\$ figures converted to US\$ (B\$ x 0.5 = US\$).
- ^{2/} No cost estimates by Category of Expenditure for the revised costs could be found in the files. Therefore, the estimated costs were calculated on the basis of the data on local, foreign, and total project cost estimates and on T.A. presented in para 4 of Special Procedure Memo R83-262 of 08/11/83 "Loan 1642-BAR, Increase in Loan Amount", from IBRD Vice President and Secretary to the Executive Directors; and from Schedule 1 of the Amending Agreement of 03/27/83. Through a careful analysis of the data, a reasonably accurate breakdown of local and foreign costs, and total costs by individual categories can be calculated.
- ^{3/} From project accountants records and verified by Auditors Report of March 31, 1987.

32. Comments on Project Costs. The total cost overrun in US dollar equivalent was 55% of original estimates and foreign costs were 49% more than estimated. These increased costs, which required the aforementioned supplementary loan to help finance, were the result of: (a) the necessity of an average of two years delay for about one-third of the construction program to conform with the reduction in public investment expenditures during a period of sharp increase in costs and attendant financial problems for the Government; (b) unit cost increases by late 1980 in civil works of about 85% of original 1978 estimates; (c) the costs of consultants and specialist services were about 50% higher than estimated, due to the lack of qualified applicants from the Caribbean Region and delays in project implementation necessitating contract extensions; (d) unstable soil conditions on one site requiring extensive work and some minor increases in building areas; and (e) the inclusion of costs of preparation for a proposed second education and training project.

Table 7: PROJECT FINANCING
(US\$ million)

Source of Funds	Planned (Loan Agreement)	Amended (Loan Agreement)	Final
IBRD	9.00	12.00	12.00
Government	<u>5.50</u>	<u>7.40</u>	<u>10.43</u>
Total Costs	14.50 (Rounded)	19.40	22.43

33. Comments on Project Financing. Because of the increased costs discussed in paragraph 32, the Government and the Bank negotiated a second loan of US\$3.0 million to supplement the original US\$9.0 million. These additional funds were used to finance 60% of the remaining costs of civil works, up from 50% in the first loan; and 100% of the remaining costs of consultants, specialists services and fellowship training; and 100% of the costs (up to US\$0.25 million) for preparation of a proposed second education and training project.

Table 8: ALLOCATION OF LOAN PROCEEDS AND ACTUAL DISBURSEMENTS

Category	Amended	Actual
	Allocations -----in US\$-----	Disbursements -----
(1) Civil Works	8,300,000	8,776,486.61
(2) Furniture and Equipment	2,250,000	2,074,116.74
(3) Consultant and specialist services and fellowships	940,000	1,141,915.65
(4) Fee	7,481	7,481.00
(5) Unallocated	502,519	---
Total	12,000,000	12,000,000.00

F. Project Results

Table 9: DIRECT BENEFITS OF PROJECT

Indicators	Projected at Appraisal		Actual at Closing Date (1987-88)		Estimated at Full Development	
<u>Annual Enrollments and Outputs</u>						
Primary Schools	5,880	(930)	5,553	(880)	5,550	(880)
Secondary Schools	7,100	(1,410)	6,616	(1,310)	6,616	(1,310)
Teacher Training College						
Two Year Course	300	(145)	148	(72)	150	(72)
In-Service Course	200	(200)	165	(165)	165	(165)
BIMAP						
Management Training	1,080		1,177		1,150	
In-Plant Training	1,500		1,043		1,500	
Instructional Staff-FT	16		16		14	
<u>Teacher: Pupil Goals</u>					<u>Shortfall</u>	
Primary Schools	1:29		1:21		28%	
Secondary Schools	1:23		1:18		22%	

34. Comments on Direct Benefits of Project. Actual enrollments in both primary and secondary schools have fallen short of estimates because the decline in school age population was greater than expected. The enrollments and outputs of the Teacher Training College have been less than expected because of: the decline in primary school age population; the young age of the teaching force; and the relative lack of attractive alternative employment opportunities, slowing attrition among teachers and reducing the expected demand for new teachers. In-service course enrollments at the Teacher Training College were also about 18% less than projected as a result of the University of West Indies (UWI) Faculty of Education having initiated in-service training courses. While not identifiable in the numerical data in Table 9 or in Table 4, a significant benefit from in-service training for school administrators was the development of administrative handbooks for both levels of administrators. In the 1987/88 school year these courses were attended by 86 administrators. While the BIMAP management training course has been able to meet its enrollment goals, its future growth may be somewhat curtailed because the Barbados Campus of UWI has initiated courses for a B.Sc. degree in Management. The BIMAP in-plant training program has not yet reached its projected annual participation, as a result of a recent setback in expected growth of the electronics, sugar processing, mining and furniture making industries. This decrease in the demand for training is expected to be only short-term. The reduction in BIMAP' full-time instructors is a result of the growing availability of qualified part-time staff.

Table 10: PROJECT STUDIES

Activity	Purpose as Defined in Loan Amendment of May 10, 1985	Status	Impact of Activity
Project Preparation	Preparation of a proposed second education project.	Activity successfully completed.	New project appraised, Loan Agree- ment signed 05/21/86, & implemen- tation pro- ceeding fairly well.

35. Comments on Project Preparation Study. The loan amendment which authorized the financing of project preparation was essential to the rapid preparation and appraisal of a follow-on project. It also resulted in a greater in-depth understanding of the proposed project by local administrators and key staff, because it was carried out largely by local education and training personnel.

G. Status of Loan Covenants

Table 11: COMPLIANCE WITH LOAN COVENANTS

Section	Covenant	Status of Compliance
<u>Loan Agreement - 12/29/78:</u>		
3.01 (a),(b), (c),(d),	Establish Project Unit by June 30, 1979; properly staff, fund, and provide MOE assistance	In full compliance
3.04 (a),(b)	Establish and maintain agreed class size and teacher-student ratios as soon as each becomes operational; continue to improve cost effectiveness of system; conduct intensive re-training courses annually for project teachers	In full compliance, with the exception of teacher-student targets which are not yet fully attained
3.05	Increase selected staff of Teacher Training College	In full compliance
3.06 (a),(b)	MOE and BIMAP agreement for lease of facilities to BIMAP as it shall require from time-to-time for use in its evening class management training program by 06/30/80; and for BIMAP to increase professional staff by three by 01/01/80 and by another four by 07/01/80; and BIMAP prepare and send to Bank annual reports.	In full compliance
3.07	Intensive up-grading course required for all senior school administrators and MOE staff on an annual basis during 1980-1982.	In full compliance by 09/84
3.08	Proposal for carrying out fellowship training prepared and sent to Bank by 06/30/79	In full compliance
3.09 3.10	Preparation of lists, specifications, documents, etc. shall be in accordance with Bank requirements, reviewed by Bank prior to tendering, etc.	In full compliance
3.11	Keep Bank informed annually as to attain- ment of educational objectives and of any major education policies or plans formulated.	In full compliance
3.12	All sites for project schools would be acquired by 03/31/79	In compliance with some delay
4.02	Accounting and Auditing requirement	In full compliance

H. Use of Bank Resources

Table 12: STAFF INPUTS BY PROJECT CYCLE IN STAFF WEEKS

Stage of Project Cycle	<u>Planned</u>		<u>Revised</u>		<u>Final</u>	
	HQ	Field	HQ	Field	HQ	Field
Through Appraisal	-	39.2	-	-	-	39.2
From Appraisal through Board Approval	-	-	-	-	-	-
From Board Approval through Effectiveness Supervision	-	-	-	-	-	-
	-	18.0(5yrs)	-	12.4(7yrs)	-	12.4(7yrs)

36. Comments on Staff Inputs. Staff inputs through appraisal were appropriate both in staff weeks and mission composition (Table 13) to assure a well prepared and appraised project. However, the implementation of the project was undoubtedly hindered as a result of uneven timing and staffing of supervision missions (Table 5 and Annex 3, Table 2). Data on staff inputs at Headquarters was not available.

Table 13: MISSION DATA BY STAGES OF PROJECT CYCLE

Mission	Month/Year	Intervals in Months	No. of Personnel/	Staff Weeks	Date of Report
Identif.	5/77		1(GE)	0.8	06/17/77
Identif.	7-8/77	2	4(A,GE,E,TE)	8.0	08/31/77
Preparation	3/78	6	4(DC,GE,E,TE)	0.4	04/05/78
Preparation	5/78	2	5(A,GE,E,DC,TE)	17.0	06/12/78
Appraisal	7/78	2	4(EP,E,A,TE)	9.4	07/27/78
TOTAL				39.2	
Superv. I	2/79		2(GE,CE)	2.0	03/02/79
Superv. II	7/79	5	1(CE)	1.0	07/24/79
Superv. III	12/79	5	2(A,GE)	2.4	12/28/79
Superv. IV	12/80	12	1(A)	1.0	12/29/80
Superv. V	5/82	17 2/	1(GE)	1.0	05/18/82
Superv. VI	1/83	8	1(A)	1.0	02/04/83
Superv. VII	3/84	14	2(GE,FM)	2.0	04/05/84
Superv. VIII	3/85	12	2(A,GE)	2.0	03/25/85
TOTAL				12.4	
Completion	2/89	--	1(TE,IS)	2.0	

1/ A=Architect; CE=Civil Engineer; DC=Division Chief; E=Economist; EP=Educational Planner; GE=General Educator; TE=Technical Educator; IS=Implementation Specialist; FM=Financial Management Specialist.

2/ A limited supervision mission.

Annex 1

PROJECT COMPLETION REPORT

BARBADOS

EDUCATION PROJECT (LOAN 1642-BAR)

Participation in Project Completion Mission

BARBADOS: Loan 1642-BAR, Project Completion Mission-Education I

Bank Team:

W. Wesley Hobbs, Technical Education Planner-Analyst
L.B. Darville, Implementation Specialist

Government Team:

Mr. Besley Maycock, Permanent Secretary of Education
Mr. Darwin Goodridge, Director of Project Implementation Unit
Mr. Desmond Durant, Education Officer of PIU
Mr. Ralph Boyce, Chief Education Officer
Ms. Camilita Archer, Senior Education Officer-Primary
Ms. Thelma Brathwaite, Senior Education Officer-Secondary
Mr. Stanley Medford, Senior Planning Officer-MOE
Mr. Victor Bedford, Buildings Officer-MOE
Mr. Rudy Gibbons, Director of BIMAP
Mr. Lloyd Phillips, Project Accountant
Mr. John Inniss, Principal Erdiston Teacher Training College
Dr. Earl Winton, Dean Faculty of Education, UWI

Annex 2

PROJECT COMPLETION REPORT

BARBADOS

EDUCATION PROJECT (LOAN 1642-BAR)

Record of Project Progress Reports Submitted
(By Year)

1. 1979 Quarterly Progress Report as at June 30, 1979.
2. Quarterly Progress Report as at September 30, 1979
3. Update of the September 30, 1979 report as of November 30, 1979
4. Quarterly Progress Report for the period ending December 31, 1979
5. 1980 Quarterly Progress Report for the period ending June 30, 1981
6. Status Report for the Quarter ending June 30, 1980
7. Status Report for the Quarter ending December 31, 1980
8. 1981 Quarterly Progress Report for the period ending June 30, 1981
9. Status Report as at October 31, 1981 for the period September - October 1981
10. Status Report as at September 15, 1981 for the period August - September 1981
11. Status Report as at December 31, 1981
12. 1982 Status Report for the Period January - June 1982
BIMAP Component (Barbados Institute of Management and Productivity)
13. Status Report as at September 30, 1982
14. Status Report as at March 31, 1982
15. Status Report as at June 30, 1982
16. Status Report as at December 31, 1982
17. 1983 Status Report as at September 30, 1983
18. 1984 Status Report as at September 30, 1984
19. Status Report as at December 31, 1984
20. 1985 Status Report as at September 30, 1985

PROJECT COMPLETION REPORT

BARBADOS

EDUCATION PROJECT (LOAN 1642-BAR)

Table 1. Planned Civil Works Tendering Schedule

Institution or Building	<u>Tender Dates</u>		Months Delay	<u>Contract Signed</u>		Delay
	Planned	Actual		Planned	Actual	
Primary Schools:						
Eden Lodge	06/79	12/79	6	09/79	3/80	6
Grace Hill	06/79	06/80	12	10/79	08/80	10
St. George	11/80	12/80	1	01/81	03/81	2
St. Luke	06/81	07/81	1	07/81	11/81	4
Pine Wildey	04/81	04/82	12	05/81	09/82	16
St. Patricks	10/81	03/83	17	11/81	09/83	22
West Terrace	04/81	11/83	31	05/81	03/84	34
St. Joseph	05/81	06/84	37	06/81	10/84	40
Sharon	07/81	04/84	33	08/81	08/84	36
Westbury	09/81	07/84	34	11/81	10/84	35
Secondary Schools:						
Coleridge	08/80	08/80	0	09/80	04/81	7
Parkinson	03/81	07/81	4	04/81	01/82	8
Alleyne	07/81	04/82	9	04/81	09/82	16
West St. Joseph	07/81	11/82	16	07/81	01/83	18
Alexandra	08/81	11/83	27	10/81	05/84	31
The Lodge	09/81	11/84	38	10/81	12/84	14
Other Institutions:						
Erdiston TTC	06/79	12/79	6	10/79	06/80	8
BIMAP	03/79	03/81	24	12/79	07/81	19

Table 2: Supervision Mission Participation

Supervision Mission	Date	Interval (Months)	Participants	Weeks in Field
I	02/79		Kouros, GE; and Van-Tienhoven, CE	1
II	07/79	5	Van-Tienhoven, CE	1
III	12/79	5	Kouros, GE; and Concepcion, A	1.3
IV	12/80	12	Concepcion, A	1
V	05/82	17	Keith, GE	1
VI	01/83	8	Concepcion, A	1
VII	03/84	14	Cespedes, GE; and Echaveria, FM	1
VIII	03/85	12	Concepcion, A; and Cespedes, GE	1

A=Architect; CE=Civil Engineer; FM=Financial Management; and
GE=General Educator