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INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
INTERNATIONAL DEVELOPMENT ASSOCIATION

APPRAISAL OF
A SECOND EDUCATION PROJECT
IN
JAMAICA

February 18, 1971

Education Projects Department

CURRENCY EQUIVALENTS

J\$1	=	US\$1.20
US\$1	=	J\$0.83
US\$1,000,000	=	J\$833,333

MEASURES

1 m ²	=	10.76 sq ft
1 km ²	=	0.38 sq mi
1 hectare	=	2.47 acres

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This report is based on the findings of an appraisal mission which visited Jamaica during May 1970. The mission consisted of Messrs. S.Z. Sung (technical educator), G. Naleppa (architect) and U. Richter (economist) from the Bank, and Mr. C. L. Germanacos (education planner, consultant). Messrs. C. P. van Dijk (economist) and S. Futagami (ITV specialist) from the Bank assisted the mission briefly.

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MAP

JAMAICA

BASIC DATA

General

Total area	4,400 sq mi (11,400 km ²)
Total population (1969 estimate)	1.94 million
Population growth rate	2.7% p.a.
Population density	436 per sq mi (168 per km ²)
Gross National Product (1969)	J\$887 million
(at current market prices)	US\$1,064 million
GNP per capita (1969)	J\$457
(at current market prices)	US\$548
GDP growth rate (1966-69)	3.3% p.a.
(at factor cost, constant prices)	
GDP by Sector (1969)	
Agriculture	9.0%
Manufacturing and mining	26.2%
Construction	12.9%
Other	51.9%
Government revenue as a percentage of GNP (1969)	18.5%

Education

- Primary school enrollment as a percentage of the 6-11 age group (1967-68)	86.4%
- First cycle secondary school enrollment as a percentage of the 12-14 age group (1967-68)	80.4%
- Second-cycle secondary school enrollment as a percentage of the 15-18 age group (1967-68)	9.3%
- Post-secondary enrollment as a percentage of the 19-22 age group	7.1%
- Literacy rate, 15 years and over (1960)	86%
- Government expenditure on education as a percentage of total expenditure (1967-68)	16.6%
- Total expenditure on education as a percentage of GNP (1967-68)	3.7%

GLOSSARY AND ABBREVIATIONS

Grading Terminology

For the purposes of this report, a standard grading terminology is used, viz., Grades 1-6 for primary and Grades 7-13 for secondary schools, the grade number referring to the year of schooling reached at that point. Jamaica is now beginning to use this terminology.

Schools

- | | | |
|-----------------------------|---|--|
| Senior Department | : | Grades 7-9 attached to primary schools for those primary school graduates who fail to gain entry into secondary schools. |
| High School | : | A secondary school for Grades 7-11/13, (first and second cycle secondary). Entry into Grade 7 is selective. |
| Junior Secondary School | : | A secondary school for Grades 7-9 only, (first cycle secondary). |
| Comprehensive (high) School | : | A secondary school for Grades 7-11/13 or Grades 10-11/13. It accepts all pupils from a given catchment area into Grade 7 on a non-selective basis and into Grade 10 on a selective basis. It offers a broad curriculum which includes practical and academic subjects. |

Abbreviations

- | | | |
|------------------|---|--|
| G.C.E. 'O' Level | : | General Certificate of Education, Ordinary Level. An examination on completion of Grade 11, set and graded by examining boards in the United Kingdom. |
| G.C.E. 'A' Level | : | General Certificate of Education, Advanced Level. This examination on completion of Grade 13, set and graded by U.K. examiners, serves as the university entrance qualifying test. |
| C.A.S.T. | : | The College of Arts, Science and Technology |
| I.T.V. | : | Instructional Television |
| J.S.A. | : | The Jamaica School of Agriculture |
| U.W.I. | : | The regional University of the West Indies |

JAMAICA

APPRAISAL OF A SECOND EDUCATION PROJECT

SUMMARY AND CONCLUSIONS

i. A major constraint to economic development in Jamaica is the inadequacy of the education system to supply the labor market with skilled or readily trainable middle level manpower and the higher education system with the quantity and quality of intake to meet professional and sub-professional manpower needs.

ii. This report appraises a second education project to support the improvement and expansion of secondary education, teacher training and vocational training, and improved services for primary and out-of-school education. The project derives from the second phase of a long-term education development plan as did the first IBRD education project (Loan No. 468-JM) from the first phase.

iii. The proposed project comprises:

(a) construction and equipment of:

- two new and additions to 26 comprehensive secondary schools;
- twelve new junior secondary schools;
- one new and additions to one teacher training college;
- one new technical teacher training department in the College of Arts, Science and Technology (CAST);
- two new vocational training centers;
- an instructional television (ITV) and education materials and aids center;

(b) technical assistance for educational planning and specialists' services for the above-mentioned items and the project unit.

iv. Enrollment capacity of the 45 project schools would be increased by 19,300 new places. About 50% of new places would be at second cycle secondary level where, as a result of the new curricula, this output would be better prepared for higher studies, employment or on-the-job training.

v. The proposed project would support the strategy developed to achieve a better match between educational output and the manpower needs of the economy. Expansion would be accompanied by (a) gradual elimination of the ineffective post-primary departments of primary schools and transfer of their students to junior secondary schools; (b) introduction of broad

curricula in comprehensive secondary schools with options in industrial, agricultural, commercial, craft and home economics subjects; (c) improvement of education services and teacher training; and (d) expansion of vocational training. Further educational expansion should be preceded by a manpower study and a review of the education plan.

vi. Adequate intake for the project schools is assured, as is also the teacher supply, although initially some teachers for the technical subjects of the comprehensive schools may have to be expatriates. Curricula are satisfactory. The technical assistance component would provide specialists to assist with educational planning, establishing testing procedures, training Jamaicans in administering comprehensive schools, upgrading teacher-trainers, improving the ITV program and strengthening the Project Unit.

vii. Schedules of accommodation, equipment and furniture are economical and appropriate. Costs are reasonable. Buildings would be designed by firms of consulting architects. Contracts for construction and procurement would be awarded on the basis of international competitive bidding. The project would be executed by the Project Unit established under the first IBRD education project but suitably reinforced.

viii. The estimated total project cost is US\$28.2 million equivalent with a foreign exchange component estimated at US\$12.5 million equivalent (excluding interest and commitment charges during construction). The proposed loan of US\$13.5 million would finance all foreign exchange costs, estimated at US\$12.5 million (93% of the proposed loan) and interest and commitment charges during construction estimated at US\$1 million (7% of the loan). Disbursement would be over four years, the anticipated period of construction.

ix. During negotiations, the government has provided assurances as set out in para. 7.01. The project is suitable for a Bank loan of US\$13.5 million equivalent to Jamaica for a period of 25 years including a 10 year grace period.

I. INTRODUCTION

The Request

1.01 The Jamaican Government, with Unesco assistance, prepared a long-term education plan for 1966-1980, the earlier portion of which was translated into two project-oriented programs. The first was assisted by a Bank loan of US\$9.5 million made in 1966 (468-JM) and by Canada. Under the first Bank loan the Government established 50 junior secondary schools and expanded teacher, agricultural, industrial and commercial training. This project, after initial delays, is now making satisfactory progress and should be completed by December, 1971. Its educational objectives of expanding and improving junior secondary education and indirectly primary education are being achieved. A cost overrun of about US\$9.4 million (borne by the Government) over the 1966 estimate of total cost of US\$19.4 million is expected. The major causes of this were: increased costs of labor and materials beyond the earlier forecasts, site problems, larger school areas and initial cost underestimates. More effective project management might have led to better results.

1.02 In January, 1970, Jamaica requested Bank financing for a second education project, prepared with Unesco assistance. The proposed project was appraised in May, 1970, by a mission consisting of Messrs. S. Z. Sung (technical educator), G. Naleppa (architect), and U. Richter (economist) of the Bank and C. L. Germanacos (education planner, consultant), assisted by Messrs. C. P. van Dijk (economist) and Mr. S. Futagami (ITV Specialist).

1.03 As modified after the appraisal, the proposed project would comprise:

(a) Construction, furniture and equipment for:

- two new and additions to 26 comprehensive high schools;
- twelve new junior secondary schools;
- one new and additions to one teacher training college;
- one new technical teacher training department in CAST;
- two new vocational training centers; and
- a center for ITV and education materials and aids.

(b) Twenty-three man-years of specialists' services and 20 man-years of fellowships.

1.04 Modifications to the request resulted in a reduction of places, mainly junior secondary, from the requested 39,000 to 19,300, and more effective utilization of existing facilities in the schools to be expanded. The cost of the modified project is estimated at US\$28.2 million exclusive of interest and commitment charges during construction.

Social and Economic Background

1.05 In an area of 4,400 sq mi, of which 60% is cultivable, Jamaica supports almost two million people, with more than 30% in the urban area of Kingston and St. Andrew. The greater part of the remainder, because of the mountainous terrain and smallholding land system, are widely spread throughout the rural areas. The natural growth rate of population, 2.7% at present, is expected to decline to 1.8% by 1980. Some 45% of the population is under 15 years of age. The demographic pressures have found an outlet in emigration in recent years, mainly to the U.S. and Canada.

1.06 In the last decade, GDP (Annex 1) has increased by about 5% annually in real terms and amounted to US\$994 million in 1969. GNP per capita was US\$548 in 1969. The main sources of economic growth have been bauxite and alumina production, tourism and manufacturing.

1.07 Jamaica's labor force consisted in 1968 of approximately 720,000 persons of whom nearly 37% were employed in agriculture. The most dynamic sectors of the economy are mining, refining and quarrying but employ only a small part (1.6%) of the labor force. The percentage of the total labor force employed has fallen between 1960 and 1969 from 14.7% to 11.6% in manufacturing and from 8.2% to 6.4% in construction, despite above-average growth in these sectors.

1.08 There is much unemployment among the untrained sectors of the labor force, estimated at nearly 18% of the labor force with higher rates among the females. It is particularly high among school-leavers without vocational training. At the same time, there is a great demand for skills at all levels. The government is trying to remedy this situation through labor-intensive public work programs and intensification of technical and vocational training. The "skill constraint" could remain a major determinant of Jamaica's social and economic development.

II. THE EDUCATION AND TRAINING SYSTEM

The Administration of Education (Chart 1)

2.01 The Ministry of Education has been considerably strengthened to handle the expanded system and the curricular reforms following upon the first Bank education project. Supervisory services have been re-organized and reinforced; primary and junior secondary school curricula have been developed and tested; a re-organized education materials and aids division is making textbooks, supplementary materials and teacher guides available to primary and junior secondary schools. The government proposes to create a new division to ensure more effective co-ordination and development of technical education.

The Education System (Chart 2)

2.02 The main features of the structure are:

- (i) primary education of five years, now changing to a 6-year course (Grades 1-5/6);
- (ii) 3-year first cycle secondary education (Grades 7-9);
- (iii) 2-year second cycle secondary (Grades 10-11), with an additional two years (Grades 12-13) for university entrance preparation;
- (iv) higher education: (a) 2-3 years post-secondary training after Grade 11, and (b) university education after Grade 13.

Six technical schools (Grades 8-11) and five vocational training centers provide skill training. CAST and the Jamaica School of Agriculture (JSA) train technicians.

2.03 At primary level, quality has suffered from poor accommodation, overcrowding, equipment shortages and untrained teachers. Improvement will result from pupil transfers from the senior departments to new junior secondary schools; a growing supply of trained teachers; curriculum reform; and increased provision of teaching materials. Enrollments (Chart 3 and Annex 2) of 299,000 represent 86.4% of the relevant age group. Primary enrollment in private schools represents less than 11% of the total.

2.04 In 1968, of the 116,000 students in first-cycle secondary (80% of the relevant age group), 82,600 are in "senior departments" of primary schools and about 33,000 in junior secondary or high schools. The first Bank project is adding a further 33,000 new junior secondary school places, providing an improved education compared with that in the primary school senior departments. At second cycle secondary level, the enrollment of 15,200 is 9.3% of the relevant age group. Enrollments in private secondary schools are about 5% of the total secondary level enrollment.

2.05 Except in the case of two pilot comprehensive high schools and the technical schools, the secondary schools' curriculum has been traditionally oriented toward the academic subjects of the U.K. General Certificate of Education (G.C.E.). Recently, the high schools, despite limited resources, have been broadening the curriculum by the inclusion of commercial and technical subjects but lack facilities and teachers.

2.06 Output from second-cycle secondary education is inadequate to meet the demands of the economy and the needs of higher education establishments. As a result, the post-secondary institutions recruit students with lower academic qualifications than the regulation requirement.

2.07 The teacher-student ratio (1:19) in high schools is over-generous. About 60% of the teachers are academically qualified but few are professionally trained; the University of the West Indies (U.W.I.) Faculty of Education is now expanding its in-service teacher-training programs. A high turnover of staff occurs, both of nationals who are attracted to the USA, Canada and the UK, and of contracted expatriates who still form about 10% of the teaching force.

2.08 The technical high schools, in particular, find difficulties in recruiting teachers since there are no provisions for technical teacher training in the country, except for a limited number of teachers of commercial subjects. With the proposed broadening of the curricula of all high schools to include technical subjects, the country will have to rely heavily on expatriate teachers until such time as national institutions begin to meet the needs.

2.09 Enrollments in higher education (4,600) represent 7% of the age-group 19-22. One third attend university courses, including non-degree courses. Six teacher training colleges, four of which have been assisted by the first Bank project, now have an annual output of 1,000 primary and junior secondary school teachers. Technicians are trained at CAST and JSA. These two institutions are now being expanded within the first Bank education project to increase output to 245 and 140 respectively from the day-time courses.

2.10 The regional U.W.I. is the main source of higher level manpower with 1,762 Jamaican students (1969) taking degree courses in agriculture, engineering, medicine, sciences, arts and social studies. Education (teaching and administration) courses are followed by only 41 but the teacher supply for secondary schools is supplemented by graduates of the arts, social sciences and natural sciences faculties.

2.11 Since 1964, instructional television programs have been transmitted to about 350 of the 800 senior department and junior secondary schools. The government intends to expand the system in the first place by increasing the ITV program coverage to include the first three grades of primary school, with concentration on the basic skills of language and number.

Education and Training outside the Formal Education System

2.12 To supplement the limited output of the secondary high schools, correspondence courses are organized for senior department and junior secondary school-leavers leading to a Jamaica Certificate of Education of a standard lower than the external G.C.E. "O" Level. This, for the time being, allows holders to sit the primary teacher training college entrance examinations. In 1968 about 9,500 students enrolled in the correspondence courses, attending neighborhood schools after school hours.

2.13 A small apprenticeship program with 540 apprentices undergoing training gives an output of 120 annually. In addition, 25 youths are sent overseas each year for apprenticeship training. These figures are quite

inadequate even when supplemented by the output of about 480 from the two vocational schools and three Ministry of Education trade training centers. Consequently, the Ministry of Labor has recently established, with ILO technical assistance, nine vocational training centers with an enrollment of 1,060 in day and evening courses in various trades. It is planned to construct three more and use all on a double shift basis. Two Youth Camps provide a variety of short-term training courses for out-of-school youths: the level of skill acquired is rudimentary. The Ministry of Trade and Industry runs a small training school for tourism industry personnel. The graduates of all these training courses readily find employment as the total annual output of less than 3,000 falls short of the estimated need of 7,600.

Educational Development Strategy

2.14 Development Strategy: An outline education plan for 1966-1980 serves as the basis for short-term education programs. The development strategy is, while controlling expansion, to re-orient and improve the content of education and to make the system more efficient and productive, and more closely related to economic and social developmental needs. Fundamental and interacting policy objectives are to equalize educational opportunity, ensure by 1980 an appropriate education for 97% of the 6-14 years age group, and ensure an adequate supply of qualified output from second cycle secondary institutions to meet the demands of the economy and higher education.

2.15 The Quantitative Targets: The targets for enrollment and qualified teacher requirements (Annex 3) are summarized below:

	1967-1968			1980-1981		
	Enroll- ments	% of Age Group	Teachers On Post	Enroll- ments	% of Age Group	Teachers Required
Primary	299,100	86.4%	6,647 ^{/2}	432,000	100%	10,800
First Cycle Secondary	115,800 ^{/1}	80.4%	-	180,000	92%	6,000
Second Cycle Secondary	15,200	9.3%	700 ^{/3}	34,000	15%	1,700
Higher	4,600	7.1%	-	9,500	9%	-
Total	434,700	60.5%		655,500	66.6%	

^{/1} Includes 82,600 in senior departments of primary schools.

^{/2} Public schools only; some of these are in the senior departments.

^{/3} Only university graduates in all types of secondary schools.

2.16 The major thrust of the present plan is the complete transfer of students from the senior departments of primary schools to the more appropriate first-cycle secondary schools and the expansion of second-cycle secondary education.

III. EDUCATION FINANCE

Financing of Education

3.01 Public education is financed through the budget of the central government, most of it directly but a small part in the form of transfers to local authorities. The Ministry of Education budget provides for public primary and secondary schools, teacher training colleges, CAST and JSA; and it assists "grant-aided" schools ^{1/} and provides scholarships for university students. The Ministry of Finance and Planning budget covers Jamaica's contribution to the U.W.I. and is also responsible for the in-service training of civil servants. Other Ministries finance relevant specialized training.

3.02 Private expenditure amounted to approximately 0.6% of G.N.P. between 1964 and 1969. Most is in the form of private school fees. Private industry, in particular the bauxite companies, contribute in the form of in-plant training, donations to schools and scholarship funds.

Total Expenditure on Education

3.03 Public expenditure on education and training (Annex 4) increased at an average rate of nearly 16% per year between 1964 and 1969. Such expenditure, amounting to J\$39.1 million in 1969, is 19.1% of total government expenditure in that year and constitutes the largest single item in the central budget; the percentage share of education expenditure in GNP is 4.4% (5.0% including private expenditure). In particular, capital expenditure showed a rapid increase after 1967 due to the construction of junior secondary schools and post-secondary facilities.

Recurrent Expenditure

3.04 Public recurrent expenditure on education increased from J\$16.4 million in 1964 to J\$30.2 million in 1969, slightly higher than the growth rate of total public recurrent expenditure. The percentage share remained virtually unchanged at about 20% (Annex 4).

3.05 The share of primary education is falling, due to the creation of junior secondary schools in 1966 which absorbed those students formerly

^{1/} Private schools with approximately the same fees and salary scales as government schools and receiving direct public financial assistance to the extent that they are classified as public schools.

in the senior departments of primary schools. This factor also explains the rapid rise in spending on secondary education which now claims a substantial part of the education budget. The proportion spent on technical education and vocational training is small (4% in 1969-1970) but the annual growth rate of about 24% in the last five years is high.

3.06 Annual recurrent costs per student at US\$35 in primary education, US\$228 for second-cycle secondary education, US\$726 and US\$782 for post-secondary technical education and teacher training, and about US\$1,450 for higher education are reasonable. (Annex 5 compares these figures with those in certain other countries).

Capital Expenditure

3.07 Public capital expenditure on education rose from J\$1.9 million in 1964 to J\$8.8 in 1969, or from 5.3% to 14.2% of total public capital expenditure. This percentage is expected to increase to 15.9% in 1970 (Annex 4).

Foreign Assistance

3.08 Assistance to education has been provided by IBRD (for construction of junior secondary schools and post-secondary training institutions), the Government of Canada (for construction of primary schools), and USAID (for instructional television). Some technical assistance on educational planning, teacher training and in-service training has also been received from other sources, with UN and Canadian technical assistance alone amounting to approximately J\$0.8 million in 1970/71. The UK, Canada and the US provide teachers for primary and secondary schools, post-secondary institutions and the U.W.I. The same countries and Germany have sent technical instructors to Jamaica. The ILO is assisting the government in setting up a centralized agency for industrial and vocational training.

Projections of Future Education Expenditure

3.09 Public expenditure on education in constant prices is likely to rise at a rate of about 12% annually up to 1975. The proportion of this to total government expenditure would remain around 20% in this period but the percentage to GNP would rise from 4.4% in 1969 to 5.6% in 1975 (Annex 6).

3.10 Recurrent expenditure on education is expected to reach about 24% of the government's recurrent budget in 1975 (Annex 6). This is high by international standards and further increases need to be effectively controlled. The recurrent expenditures generated by the proposed second Bank project amount to about J\$5.7 million, taking up about 9% of total recurrent expenditures on education by 1975.

IV. THE NEED FOR THE PROJECT

Manpower Needs for Economic Growth

4.01 A manpower requirement survey in 1967 gave the Jamaican labor force as 707,000 persons, of whom 598,000 (85%) were actually employed (Annex 7). Only establishments with at least 10 employees were included so that actual employment figures are higher. In consequence, projections of the labor force based on the 1967 stock as shown in Annex 7 are considered as minimum requirements.

4.02 The survey showed a high rate of unemployment (20%) among the semi-skilled and unskilled group and a shortage of about 2% in the professional and technical workers' group. These findings were reinforced by another survey in 1968 covering 591,000 employed persons. Unemployment was highest (24%) among persons with no formal schooling or only primary education. Unemployment rates among the more highly educated was reduced in part due to female non-participation in the labor force.

4.03 Emigration of about 9,000 economically-active people per annum has occurred mostly among the professional and technical workers (13%), sales personnel (11%) and craftsmen (10%); that is, the very occupations for which manpower needs are greatest and for which the highest number of work permits is issued to foreign workers. Given the continuation of income differentials between Jamaica and the high-income countries, the drain on Jamaican skills is likely to continue. Comparing the stock of professional personnel in 1967 with work permits in force that year for foreign workers, professionals on work permit accounted for 12% of the stock of doctors, 75% of engineers, 58% of architects, 60% of quantity surveyors, 20% of accountants and 30% of university graduate teachers in secondary schools. These figures emphasize the existing shortages in the professional and technical occupations.

4.04 They also reflect the two persistent manpower problems confronting Jamaica - a shortage of skilled manpower and a labor surplus of unskilled workers in both urban and rural areas. The shortages of skills are mostly in the sub-professional categories - technicians for industry, commerce and agriculture, para-medicals and craftsmen. In addition, the percentage of employed persons not performing efficiently, due to inadequate education and training, is high, especially among craftsmen and clerical workers.

4.05 To meet these shortages, the education system should provide a greater output at secondary level of education, the source for higher education inputs and for middle-level job intake; diversify the upper cycle secondary education in accordance with manpower needs, and improve the quality of the output in terms of educational and skill levels.

4.06 Assuming that the economy will grow annually by 6% during 1967-1980 and a labor productivity growth rate of between 2% and 3%, the labor force will increase to about 774,000 by 1980. Allowing for a higher relative rise of professional, technical, managerial, executive and administrative staff and of clerical and sales personnel, the combined participation rate of these groups would be 22.5% by 1980 as compared with 18.2% in 1967.

4.07 On these assumptions and based on a cross classification of occupations with educational levels derived from the manpower survey, the estimated additional requirements of the labor market by education level outputs are (Annex 8):

<u>Output Education Level</u>	<u>1967-75 (compounded)</u>	<u>1975-80 (compounded)</u>	<u>Total</u>
Degree or equivalent	5,830	5,620	11,450
Completed secondary education (Grade 11)	18,180	18,670	36,850
Completed Grade 11 without certificate	11,560	11,810	23,370
Sub-total Secondary Grade 11	29,740	30,480	60,220
Below Grade 11	24,230	21,990	46,220

4.08 To achieve these outputs, enrollments in the education system at second cycle and higher education should be as shown in Annex 3 (see also para. 2.15 above). The critical shortage is in second cycle secondary education where the total enrollment in 1967/68 was 15,200 (Annexes 2 and 9), inadequate to meet the total demand for entrants to higher education institutions and the labor market; the government target is to expand by 1980 to 49,800. However, on the basis of the minimum required outputs in the period 1967-1980 a target of 34,000 seems adequate on present evidence to meet the purely manpower and higher education needs at this level (Annex 10). The proposed expansion to 34,000 by 1980 would give a cumulative output of about 64,800 with completed secondary education to meet the projected labor market requirements of about 60,000 (para. 4.07). However, allowing for dropouts, the 34,000 enrollment target is a minimum requirement, which may have to be revised upward with new evidence.

4.09 A manpower survey and a review of the education plan is desirable at this time, to ensure that proposed enrollment targets are in conformity with the needs of Jamaica for economic development. Technical assistance from bilateral sources will provide the manpower survey specialists. The proposed project includes technical assistance for educational planning which would be based on up-to-date statistics and projections from the survey. Such a survey and review of the education plan is also essential prior to further major investment in education.

Needs of Educational System

4.10 Primary and junior secondary teacher training facilities need about 500 more places if they are to improve by 1980 the qualified teacher percentage, meet expansion needs, and permit reducing the pupil-teacher ratio in primary and first-cycle secondary schools from 52:1 and 35:1 to 40:1 and 30:1, respectively (Annex 11 Part A).

4.11 At second-cycle level (Annex 11 Part B), outputs from the U.W.I. Faculties of Sciences, Arts and Education should suffice for second-cycle secondary school demands for teachers of academic subjects, provide a leavening of university graduates in the junior secondary schools and reduce substantially the proportion of expatriate teachers. There is, however, an urgent need to assure the supply of technical subjects' teachers if the schools are to offer a more comprehensive curriculum. The course for agricultural subjects' teachers should be operating at JSA as formulated in the first Bank education project. In addition, it is necessary to create a technical teacher training institution. The government is awarding over 100 "teacher" scholarships a year to ensure an adequate teacher supply. A greater proportion of these should be awarded to students desirous of qualifying as teachers of technical, mathematics and science subjects. The government has given assurances during negotiations that an adequate provision for technical teacher training will be made.

4.12 The government intends to maintain the specialist committees which are developing curricula for the primary and junior secondary schools, and to increase the supply of suitable textbooks and supplementary materials to these schools. Special attention is to be paid to materials in support of the ITV and correspondence programs. Additional resources for preparation and production of these books and materials will be needed. To introduce new material and techniques into a larger number of primary schools, the ITV programs are to be increased and this entails additional production facilities.

4.13 Curricula for the second-cycle secondary schools are largely determined by the requirements of external examinations. This need not prevent the development of good curricula consistent with the needs of Jamaica, as has already been partially done in a number of cases, and recognized by external examination authorities. The government has given assurances during negotiations that curriculum committees for this purpose will be set up and appropriate curricula will be developed within two years of signing the proposed loan. Jamaica has its own resources and can draw upon the U.W.I. Faculty of Education and specialists from bilateral sources to carry out this work.

4.14 As the number of comprehensive schools increases, school administrators and supervisors will need management training. Technical assistance will be required for this purpose. The Government has given assurances during negotiations that such training will be made available within eighteen months of signing the loan.

V. THE PROJECT

A. General

5.01 The proposed project, at a total estimated cost of US\$28.2 million (Annex 12), would comprise the following:

- (a) Secondary Level Schools. Construction and equipment of:
 - extensions to 17 existing high schools for conversion to comprehensive schools, adding 1,600 first-cycle and 5,090 second-cycle places;
 - addition of comprehensive type second-cycle facilities at 9 existing junior secondary schools, adding 3,620 second-cycle places;
 - two new secondary comprehensive schools for 960 first-cycle and 800 second-cycle places; and
 - twelve new junior secondary schools for 6,240 first-cycle places.
- (b) Teacher Training. Construction and equipment of:
 - a new primary teacher training college for an enrollment of 300 and boarding facilities for 300;
 - additions to an existing teacher training college for an additional enrollment of 200 junior secondary school teacher trainees and boarding facilities for 200; and
 - additions to CAST to establish a Technical Teacher Training Department with an enrollment of 300 and output of 80 annually.
- (c) Vocational Training. Construction and equipment of two new vocational training centers for an enrollment and output of 160.
- (d) Quality Improvements to Primary Education. Construction and equipment of an ITV and Education Materials and Aids Center.
- (e) Technical Assistance. Fourteen man-years of specialists and 20 man-years of fellowships to provide assistance on educational planning, establish suitable testing procedures for selection and guidance of students into the second-cycle secondary system and support (a), (b) and (d) above (Appendix).

- (f) Project Unit. Nine man-years of specialists to reinforce the Project Unit.

B. Elements of the Project

Secondary Level Schools (Annex 12, Items A1-A40)

5.02 The project secondary schools would assist the government to achieve the main objectives for education development within the framework of the 1966-1980 plan, adding about 18,300 places to the secondary system.

5.03 With 8,800 places added in first-cycle secondary and 9,500 in the second-cycle, or over 50% of the new places, emphasis is on the second cycle in order to meet urgent needs. The number of first-cycle places has been substantially reduced because of financial and managerial constraints. The project schools are located to fill gaps in the planned school network in conformity with population distribution.

5.04 Entry into the first-cycle is on a non-selective basis, each school serving a group of primary feeder schools. Entry into the second-cycle will be selective since only 25% of first-cycle leavers would enter the second-cycle. Sufficiency of intake into the proposed schools is assured. The government has given assurances during negotiations that within two years of signing the loan, suitable testing procedures will be established for the selection and guidance of students into the second-cycle system. For this, technical assistance has been included in the proposed project.

5.05 The first-cycle curriculum will include industrial arts, agriculture, and home economics. The second-cycle curriculum will allow greater emphasis on mathematics and science and provide pre-vocational courses in industrial, commercial, home economics and agricultural subjects (Annex 13). Students can thus obtain adequate qualifications for further studies and will be better prepared for on-the-job training.

5.06 Grades 12 and 13 facilities would be available in only a limited number of schools to ensure economic-sized classes at that level. The output at Grade 11/13 in 1975 is estimated at about 11,000 (Annex 10), an increase of 5,200 over the 1968 output. This will ensure adequate intake into higher education levels and also meet employment needs.

5.07 Teachers will be provided for project first-cycle schools by the training program established under the first Bank project. Teachers for the technical programs of the comprehensive second-cycle, however, will need some external technical assistance and/or contracted expatriates (para. 2.08 and Annex 14). Based on a more realistic teacher/student ratio of about 1:25 in average, the total number of teachers required in all the project secondary schools is about 1,500. The government has

given assurances during negotiations that (a) by the closing date of the loan, the new teacher/student ratio of approximately 1:25 will be established and maintained thereafter for the comprehensive schools in the project and of approximately 1:30 for the junior secondary schools in the project; (b) all project institutions will be staffed at all times with suitably qualified administrators, teachers and instructors in adequate numbers.

Teacher Training (Annex 12, Items B1-B3)

5.08 Provision for one new primary teacher training college and expansion of an existing college (Mandeville) would raise the proportion of trained teachers in primary schools from 52% to 80%, and provide all first-cycle secondary schools with qualified staff by 1980. The government intends to expand another of the existing primary teacher training colleges (Bethlehem) from its own resources.

5.09 Adequate intake is assured although initially all entrants are unlikely to be of the academic standard desired (para 2.06). With the application of a more economical teacher-student ratio (1:15), no difficulty is envisaged in staffing the proposed colleges but fellowships are needed for upgrading some of the existing personnel and training prospective teacher trainers; provision would be made under the proposed loan for this purpose.

5.10 The new primary teacher college would be in the relatively densely populated area of Savannah la Mar with adequate primary and junior secondary schools in the area for teaching practice purposes. Staff housing is required to attract and retain teacher-trainers. Full boarding facilities are also needed.

5.11 Diversification of the second-cycle secondary curriculum with the introduction of a number of practical courses calls for an annual supply of about 80 teachers of technical subjects. The proposed Technical Teacher Training Department at CAST is designed to meet this demand and provide teacher training in the mechanical, electrical and building trades and in commerce, home economics and agriculture. (For agriculture, courses would be held at JSA for the subject matter, with CAST providing pedagogical training.) The 20 teacher trainers required will be obtained by the Government from bilateral sources, mainly from Canada.

Vocational Training Centers (Annex 12 - Items C1 and C2)

5.12 The two vocational training centers, with a capacity of 160 (and possibly 320 under double usage), would partially fill the need for craft training. The shortage of trained instructors precludes greater expansion as the UNDP/ILO-sponsored instructor training scheme has not yet gained momentum. Applicants are likely to outnumber vacancies. Each center would offer 6 to 12-month courses in four trades - welding, pipe fitting, electrical installation and millwright fitting at Savannah la Mar, and electrical maintenance, heavy duty mechanics, plumbing and welding at St. Ann's Bay.

Quality Improvements to Primary Education (Annex 12, Item D1)

5.13 ITV and Education Materials and Aids Center. At present, ITV is limited to the transmission of 29 programs per week, including 13 new ones, all directed at senior departments of primary schools. Teachers have confirmed the effectiveness of ITV in those schools where picture quality is acceptable. The local commercial station is available during mornings only for transmission; studio space and equipment is rented for four mornings weekly, all that is available.

5.14 The project would extend the programs into the primary schools to improve English and mathematics teaching and produce specific programs to serve the correspondence course students. For this, additional transmission and production facilities are required to allow the preparation and weekly transmission of 21 new programs and expanded production of teaching materials and aids. The government has given assurances during negotiations that by the completion of this part of the project and subject to existing television capacity, about three hours fifty minutes of ITV programs will be broadcast each school day between 9:10 a.m. and 3:30 p.m. over the national television network. Technical assistance has been provided in the project to ensure improved ITV program production and better educational materials and aids, including better picture quality, and on-the-job and overseas training for technical personnel (Schedule to Appendix).

Technical Assistance (Appendix)

5.15 The proposed project provides for a total of 23 man-years of specialists and 20 man-years of fellowships at an estimated cost of US\$1.1 million as follows:

- (a) 4 man-years of an educational planner and a statistician to carry out the review of the education plan (para. 4.09);
- (b) 5 man-years of specialists and 2-1/2 man-years of fellowships to assist in the development and training programs of the comprehensive school and the establishment of suitable testing procedures for selection and guidance of students to the second-cycle secondary educational system (paras. 4.14 and 5.04);
- (c) 15-1/2 man-years of fellowships to support the teacher-training programs (para 5.09);
- (d) 5 man-years of specialists and 2 man-years of fellowships to improve the ITV services (para 5.14); and
- (e) 9 man-years of an architect, a quantity surveyor and an equipment specialist to strengthen the project unit (para 6.02).

The specialists are likely to be expatriates. The above requirements take into account international and bilateral technical assistance available to Jamaica.

Cost of the Project

5.16 The cost of the proposed project is estimated at J\$23.5 million or US\$28.2 million. The project cost breakdown are shown in Annex 12 and are summarized below:

	J\$'000			US\$'000			% of Total Project Cost
	<u>Local</u>	<u>Foreign</u>	<u>Total</u>	<u>Local</u>	<u>Foreign</u>	<u>Total</u>	
1. Conversion of 17 High Schools to Comprehensives	3,325	3,021	6,346	3,990	3,625	7,615	27.0
2. Conversion of 9 Junior Secondary Schools to Comprehensives	1,761	1,516	3,277	2,113	1,819	3,932	14.0
3. 2 new Comprehensive Schools	680	516	1,196	816	619	1,435	5.1
4. 12 new Junior Secondary Schools	2,677	1,644	4,321	3,213	1,973	5,186	18.4
5. 2 Teacher Training Colleges	871	566	1,437	1,045	680	1,725	6.1
6. 2 Vocational Training Centers	123	163	286	147	196	343	1.2
7. ITV & Educational Materials & Aids Center	568	604	1,172	682	725	1,407	5.0
8. Technical Assistance	154	617	771	185	740	925	3.3
9. Contingencies:							
Physical (8.6%)	966	643	1,609	1,159	771	1,930	6.9
Prices (16.2%)	<u>1,976</u>	<u>1,074</u>	<u>3,050</u>	<u>2,371</u>	<u>1,289</u>	<u>3,660</u>	<u>13.0</u>
Total Project Cost	<u>13,101</u>	<u>10,364</u>	<u>23,465</u>	<u>15,721</u>	<u>12,437</u>	<u>28,158</u>	<u>100.0</u>
Interest and other charges		886			1,063		
Total		<u>11,250</u>			<u>13,500</u>		

5.17 The costs by various types of expenditures would be as follows:

	J\$ '000			US\$ '000			% of Total Project Cost
	<u>Local</u>	<u>Foreign</u>	<u>Total</u>	<u>Local</u>	<u>Foreign</u>	<u>Total</u>	
<u>Construction</u>							
Academic & Communal	5,937	3,339	9,276	7,124	4,007	11,131	39.4
Boarding	262	147	409	315	176	491	1.7
Staff Houses	689	388	1,077	827	465	1,292	4.6
Site Development	1,045	588	1,633	1,254	706	1,960	7.0
Professional Fees	<u>1,392</u>	<u>348</u>	<u>1,740</u>	<u>1,670</u>	<u>418</u>	<u>2,088</u>	<u>7.4</u>
Sub-Total	9,325	4,810	14,135	11,190	5,772	16,962	60.1
<u>Furniture</u>	529	353	882	635	424	1,059	3.8
<u>Equipment</u>	151	2,867	3,018	181	3,441	3,622	12.9
<u>Technical Assistance</u>	154	617	771	185	740	925	3.3
<u>Contingencies:</u>							
Physical (8.6%)	966	643	1,609	1,159	771	1,930	6.9
Prices (16.2%)	<u>1,976</u>	<u>1,074</u>	<u>3,050</u>	<u>2,371</u>	<u>1,289</u>	<u>3,660</u>	<u>13.0</u>
Total Project Cost	<u>13,101</u>	<u>10,364</u>	<u>23,465</u>	<u>15,721</u>	<u>12,437</u>	<u>28,158</u>	<u>100.0</u>
Interest and other charges		886			1,063		
Total		11,250			13,500		

5.18 These estimates are based on January 1971 prices, with due regard to the experience under the first Bank education project. They reflect a high utilization of accommodation and austere standards of construction, furnishing and equipment but are consistent with functional requirements. Construction costs for academic, communal and boarding facilities are estimated at J\$8.60 per square foot (US\$10.32 per sq ft).

5.19 Construction costs have risen by about 50% over the last four years. It is expected that, during project implementation, an average cost escalation of about 10% per annum on local currency component and 6% per annum on foreign exchange component for civil works will occur. To cover price increases and unforeseen expenditures, a contingency provision for site development, civil works, professional services, furniture, equipment and technical assistance has been included in the total project cost (Annex 15); it would be equivalent to 19.9% of the total project cost, or 24.8% of the total without contingencies.

5.20 The foreign exchange component (Annex 12) amounting to US\$12.5 million, excluding about US\$1.0 million interest and other charges during the construction period, equivalent to 44.2% of the estimated total project cost of US\$28.2 million, has been calculated as follows: (a) site development and building at 36%, (b) furniture 40%, (c) equipment 95%, (d) professional services 20% and (e) technical assistance 80%.

5.21 For new schools, estimated costs per student place at US\$685 for comprehensive schools, US\$654 for junior secondary schools, US\$1,412 for teacher training college, and US\$1,997 for trade training centers are reasonable. Comparable figures in neighboring countries are shown in Annex 16.

5.22 When operating at full capacity, the project would add about J\$5.7 million annually, to the Ministry of Education's 1975 recurrent budget, corresponding to 9% of the total.

5.23 The project would not include financial provision for the construction and equipment of the Technical Teacher Training Department at CAST for which the government is now considering an offer of aid from Canada. The government has, in any case, given assurances during negotiations that an adequate provision for technical teacher training will be made.

VI. IMPLEMENTATION AND DISBURSEMENTS

6.01 General. The Jamaican building industry can cope with a large expansion program in school building. Capacity for local manufacture of basic school furniture is also sufficient. There are several private architectural firms in Jamaica able to handle large and complex architectural work. Tendering procedures in the country are satisfactory.

6.02 Project Administration. The Project Unit in the Ministry of Education in charge of implementing the first education project would be responsible for the second project. The government has given assurances that the Project Unit established under Loan Agreement 468-JM will administer the proposed project with the same functions and under the same conditions set out in that agreement, together with an additional requirement that the Project Unit will develop a satisfactory maintenance scheme for all project schools. However, in the interest of closer cost control and because of the complexity of the second project, the Project Unit requires strengthening. The proposed project, therefore, includes provision for an architect, a quantity surveyor and an equipment specialist, for a total of 9 man-years. The government has given assurances that these three posts will be included in the Project Unit and agreed that appointment of the architect and quantity surveyor under terms and conditions acceptable to the Bank will be a condition of effectiveness of the loan. The government has also agreed to establish and maintain a coordination committee, which shall include repre-

sentatives of the Ministry of Education, the Ministry of Finance and Planning and the Ministry of Labor, to coordinate the Project work and to provide advice and guidance to the Project Unit.

6.03 Professional Fees and Supervision. Design and supervision of construction for new project schools and large extensions would be carried out by private architects. Similar services for smaller extensions and conversions would be done by the Project Unit's own technical staff. The government has given assurances during negotiations that architectural and engineering consultants and civil work contractors for the project would be acceptable to the Bank and be employed upon terms and conditions satisfactory to the Bank. Space requirements, building standards, designs and construction drawings used in the first project should be applied wherever feasible in the second project for economy in professional fees and speed in implementation. Based on the experience of the first project, the government intends that architectural and supervisory fees will be made independent of cost increases.

6.04 Site Selection and Acquisition. Land required for the expansion and conversion of existing schools is available. All the sites for new project schools have been selected but not yet all acquired. The government has given assurances during negotiations that all sites will be available for the construction included in the project within one year of the signing of the loan.

6.05 Contracts and Procurement. Construction contracts for the project will be awarded on the basis of international competitive bidding by pre-qualified contractors. Bids would be invited in groups of schools or in single units to allow tendering by both international and Jamaican contractors on one single unit or several schools within the group of schools in each bid invitation. All civil works contracts are likely to be won by local firms.

6.06 Furniture and equipment estimates were reviewed for all project items; detailed lists with itemized costs will be compiled during design stages and submitted for Bank review. Contracts for the supply of equipment and furniture would be awarded under international competitive bidding. Items would be grouped to the extent practicable to form sizeable bid packages to encourage such competition. Domestic manufacturers of furniture and equipment would be accorded as a margin of preference the existing rate of customs applicable to competing imports or 15% of the c.i.f. price, whichever is the lower. Imports of teaching equipment are duty-free.

6.07 Implementation Period. The proposed project would be completed within four years of signing the loan (Chart 4).

6.08 Disbursement. The proposed Bank loan would be disbursed to finance the foreign exchange component of the project including the interest and other charges during construction. It is assumed that equipment and

technical assistance will be obtained abroad and the remaining goods and services for the project will be procured locally. In view of this, the foreign exchange component of the various expenditures is estimated as follows: site development and construction, 36%; furniture, 40%; equipment, 95%; professional services, 20%; and technical assistance, 80%. The proposed allocation of loan funds is indicated in paragraph 5.17. The disbursement forecast is shown in Chart 5. Undisbursed amounts would be cancelled.

VII. RECOMMENDATIONS

7.01 During loan negotiations, agreement was reached on the following principal points:

- (a) the development of curricula for the comprehensive schools and selection procedures for entry into second-cycle; training programs for school administrators and technical teachers (paras. 4.11, 4.13, 4.14, 5.04 and 5.23);
- (b) average student/teacher ratios for the comprehensive schools and the junior secondary schools (para 5.07);
- (c) increased broadcasting hours for instructional television (para 5.14);
- (d) the use of the present Project Unit, as expanded to include additional specialists, and the appointment of a coordination committee to advise the Project Unit (para. 6.02); and
- (e) the availability of school sites (para. 6.04).

7.02 A condition of effectiveness of the loan would be the appointment of an architect and quantity surveyor for the Project Unit (para. 6.02).

7.03 The project constitutes a suitable basis for a Bank loan of US\$13.5 million equivalent to Jamaica for a term of 25 years including a grace period of 10 years.

Appendix

Technical Assistance

Details of the technical assistance program are given below and in the accompanying schedule:

(i) Educational Planning

1 educational planner 2 man-years

1 statistician to assist the above specialist 2 man-years

(ii) Comprehensive High Schools

1 specialist in administration and organization of comprehensive schools 1 man-year

1 specialist in tests and measurements to assist in the development of selection and guidance procedures 2 man-years

1 specialist in in-service training of comprehensive school administrators and supervisors 2 man-years

5 fellowships - each fellowship would be for training abroad in countries with an established comprehensive secondary school system 2-1/2 man-years

(iii) Teacher Training

6 fellowships for upgrading (higher degrees) existing or prospective teacher trainers 12 man-years

7 fellowships for retraining of existing or prospective teacher trainers 3-1/2 man-years

(iv) ITV and Educational Materials and Aids Center

1 engineer for ITV technical operations 2 man-years

1 engineer for ITV studio equipment 2 man-years

1 specialist for ITV and educational materials and aids 1 man-year

1 fellowship for ITV technical operations 1 man-year

1 fellowship for ITV studio operations 1 man-year

(v) Project Unit

1 architect to supervise design and construction of the Project institutions and to develop a satisfactory maintenance scheme 3 man-years

1 quantity surveyor for the preparation of bills of quantities and supervision 3 man-years

1 equipment specialist for the preparation of equipment list and specifications 3 man-years

The technical assistance program would be flexible. Within the total amount allocated to technical assistance and subject to Bank agreement, the length of the specialists' visit or the fellowship award could be varied as needs and circumstances may warrant over the project period. In particular, where bilateral or other multilateral assistance for any of the above is obtained, the specific project item allocation could be used for another need related to the project.

February 18, 1971

JAMAICA: Schedule of Technical Assistance

	<u>Year 1</u>				<u>Year 2</u>				<u>Year 3</u>				<u>Year 4</u>			
	<u>Quarter</u>				<u>Quarter</u>				<u>Quarter</u>				<u>Quarter</u>			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
<u>Educational Planning</u>																
Educational Planner			X	X	X	X	X	X	X	X						
Statistician			X	X	X	X	X	X	X	X						
<u>Comprehensive High Schools</u>																
Specialist in Administration and Organization			X	X	X	X										
Specialist in Tests and Measurements	X	X	X	X	X	X	X	X								
Specialist in In-service Training			X	X	X	X	X	X					X	X		
Fellowships: Administration and Organization	X	X			X	X										
Industrial			X	X												
Agricultural			X	X												
Commercial					X	X										
<u>Teacher Training (Fellowships)</u>																
Higher Degrees (3)	X	X	X	X	X	X	X	X								
Higher Degrees (3)					X	X	X	X	X	X	X	X	X	X		
Re-training (2)	X	X														
Re-training (2)					X	X										
Re-training (3)										X	X					
<u>ITV</u>																
Engineer for Technical Operations					X	X	X	X	X	X	X	X	X			
Engineer for Studio Equipment			X	X	X	X	X	X	X	X						
Specialist in ITV & Educ. Materials and Aids			X	X	X	X										
Fellowships: Technical Operations							X	X					X	X		
Studio Operations					X	X	X	X								
<u>Project Unit</u>																
Architect	X	X	X	X	X	X	X	X	X	X	X	X				
Quantity Surveyor	X	X	X	X	X	X	X	X	X	X	X	X				
Equipment Specialist			X	X	X	X	X	X	X	X	X	X			X	X

February 17, 1971

SCHEDULE TO APPENDIX

GROSS DOMESTIC PRODUCT AT FACTOR COST BY INDUSTRIAL ORIGIN - 1960-1969

(Current Values, J\$ Million)

Industrial Sector	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
										(Preliminary)
Agriculture, Forestry and Fishing	51.9	55.5	57.4	68.4	68.5	69.0	75.2	77.9	77.5	74.8
Mining, Quarrying and Refining	41.6	44.2	46.2	45.5	52.2	57.8	62.0	65.0	72.4	95.9
Manufacturing	58.7	65.4	65.7	78.7	84.3	89.2	99.2	103.3	115.3	121.1
Construction and Installation	51.1	51.8	52.0	52.1	58.1	63.6	69.2	72.9	94.9	107.0
Electricity, Gas and Water	4.5	5.4	5.8	6.2	7.1	8.0	9.0	9.1	10.1	11.1
Transportation, Storage and Communication	35.4	37.0	38.3	37.6	40.4	44.0	48.4	53.2	57.8	61.1
Distribution - Wholesale and Retail	77.8	76.3	76.9	77.0	80.2	85.8	91.2	94.1	102.3	112.5
Financial Institutions	16.2	20.1	21.8	18.8	20.8	26.4	29.6	32.7	35.0	38.7
Ownership of Dwellings	13.5	15.0	15.9	17.2	18.8	20.4	22.0	22.4	22.8	24.9
Public Administration	26.6	30.0	34.4	37.2	41.1	44.6	50.2	60.6	69.7	77.2
Miscellaneous Services	54.5	60.8	66.5	72.9	76.4	85.4	90.0	94.4	99.1	103.9
Gross Domestic Product at Factor Cost	431.8	461.5	480.9	511.6	547.9	594.2	646.0	685.6	756.9	828.2

Source: Department of Statistics, National Income and Product, 1969.

ACTUAL AND PROJECTIONS OF SCHOOL AGE POPULATION AND ENROLLMENT TARGETS

ANNEX 2

in 000s

	1967			1975			1980		
	Total Population	Enrollment 1967-1968	Enrollment 1967-1968 as % of Total Population	Total Population	Enrollment 1975-1976	Enrollment 1975-1976 as % of Total Population	Total Population	Enrollment 1980-1981	Enrollment 1980-1981 as % of Total Population
A. <u>Primary Level</u> (Age - Group 6 through 11)	346	299.1 (267 in public)	86.4%	390	348 (300 in public)	89%	432	432 (388 in public)	100%
B. <u>Secondary Level</u> (Age - Group 12 through 18)									
(i) <u>First Cycle Secondary</u> (Age-Group 12 through 14)	144	115.8	80.4%	184	160	87%	196	180	92%
(a) Senior Departments Primary Schools		(82.6)							
(b) Junior Secondary Schools		(14.3)							
(c) Comprehensive Schools		(1.5)							
(d) High Schools		(12.3) + (3.6 in private)							
(e) Technical Schools		(1.5)							
Sub-Total	144	112.2 + (3.6 in private)	80.4%	184	160	87%	196	180	92%
(ii) <u>Second Cycle Secondary</u> (Age-Group 15 through 16)	85			120	22	18%	126	31	24.6%
(a) High Schools		8.1							
(b) Technical Schools		1.7							
(c) Comprehensive Schools		0.7							
(d) Agricultural Schools		0.1							
(e) Vocational & Trade		0.6							
Sub-Total	85	11.2 + (2.4 in Private)	16%	120	22	18%	126	31	24.6%
(iii) <u>Grades 12/13 - (6th Forms)</u> (Age-Group 17 through 18)	79	1.6	2%	112	3	2.7%	122	3	2.5%
Sub-Total (Age-Group 15-18)	164	15.2	9.3 1/2%	232	25	10.8%	248	34	13.7%
TOTAL SECONDARY (Age-Group 12 through 18)	308	131.0	42.5%	416	185	44.5%	444	214	48.2%
C. <u>Higher Level</u> (Age-Group 19 through 22)	65			90			108		
(i) <u>Post-Secondary</u>									
(a) Primary and Junior Secondary Teacher Training		1.8			3.0			3.0	
(b) College of Arts, Science and Technology		1.1			2.0			2.5	
(c) Jamaica School of Agriculture		0.2			0.5			0.5	
(d) Others								0.5	
Sub-Total	65	3.1	4.8%		5.5	6.1%		6.5	6%
(ii) <u>University of West Indies</u>		1.5	2.3%		2.5	2.8%		3.0	2.8%
TOTAL HIGHER	65	4.6	7.1%	90	8	8.9%	108	9.5	8.8%
GRAND TOTAL A + B + C (Age-Group 6 through 22)	719	434.7	60.5%	896	541	60.4%	984	655.5	66.6%

1/ A difficulty arises in the choice of age groups as denominators, as students in the age groups 17 and 18 can attend 6th forms or post-secondary classes.

Source: Ministry of Education and IBRD mission projections.

PROJECTED ENROLLMENT TARGETS AND TEACHER REQUIREMENTS

Public and Private Education

	1967-1968			1975-1976			1980-1981		
	Enrollments	Teachers on Post	Teacher-Pupil Ratio	Enrollments	Teacher-Pupil Ratio	Teachers Required	Enrollments	Teacher-Pupil Ratio	Teachers Required
Primary (Grades 1-6)	382,000 ^{1/}	6,647 ^{2/}	1:52 ^{2/}	348,000	1:40	8,700	432,000	1:40	10,800
First Cycle Secondary Level (Grades 7-9)	33,000	1,238 ^{3/}	-	160,000 ^{4/}	1:30	5,300	180,000	1:30	6,000
Second Cycle Secondary	15,200	700 ^{5/}	-	25,000	1:20	1,250	34,000	1:20	1,700
Teacher Training Colleges	1,813	141	1:13	3,000	1:15	200	3,000	1:15	200
College of Arts, Science and Technology	1,100	74	1:14	2,000	1:14	144	2,500	1:14	170
Jamaica School of Agriculture	164	13	1:12	500	1:15	33	500	1:15	33
Others	-	-	-	-	-	-	500	1:15	33
University of the West Indies	1,500	-	-	2,500	-	-	3,000	-	-

^{1/} Includes 82,600 in senior departments of primary schools and 32,000 in private schools.

^{2/} Public schools only.

^{3/} In junior secondary schools and non-university graduates in high schools.

^{4/} Includes 58,000 in senior departments.

^{5/} University graduates in all types of secondary schools.

Source: Ministry of Education and IBRD mission projections.

December 21, 1970

PUBLIC EXPENDITURE ON EDUCATION AND TRAINING, 1964/65 - 1970/71
(Current \$ '000)

	1964/65		1965/66		1966/67		1967/68		1968/69		1969/70 (Revised Estimates)		1970/71 ^{1/} (Budgeted)	
	Recurrent	Capital	Recurrent	Capital	Recurrent	Capital	Recurrent	Capital	Recurrent	Capital	Recurrent	Capital	Recurrent	Capital
Ministry of Education														
1. Primary Education	6,645	946	7,068	844	7,275	1,063	8,310	1,642	9,648	1,129	10,225	1,513	11,975	1,810
2. Secondary Education	3,700	327	4,002	467	3,894	642	5,238	282	5,711	4,274	8,528	2,512	8,332	4,732
(a) First Cycle	(-)	(-)	(-)	(-)	(-)	(227)	(702)	(604)	(839)	(4,709)	(2,025)	(5,252)	(2,860)	(4,186)
(b) Second Cycle	(3,700)	(397)	(4,002)	(467)	(3,894)	(422)	(4,536)	(379)	(4,872)	(265)	(6,503)	(267)	(5,472)	(553)
3. Post-Secondary Education	1,009	288	1,279	145	1,510	159	1,819	234	1,864	536	1,984	338	2,301	1,034
(a) Teacher Training	(814)	(75)	(1,001)	(124)	(1,211)	(152)	(1,525)	(232)	(1,584)	(531)	(1,695)	(234)	(1,944)	(241)
(b) College of Arts, Science and Technology	(195)	(213)	(205)	(21)	(194)	(7)	(223)	(2)	(221)	(5)	(201)	(104)	(257)	(793)
(c) Other ^{2/}	(-)	(-)	(73)	(-)	(105)	(-)	(71)	(-)	(59)	(-)	(88)	(-)	(100)	(-)
4. Higher Education	220	-	228	16	241	-	255	-	278	-	259	-	245	-
5. Public & School Libraries	299	10	364	36	382	70	468	113	446	11	457	4	595	50
6. School, Radio & Television Broadcasts	-	-	44	-	54	-	34	-	53	-	65	-	136	-
7. Administration (incl. supervisory staff)	602	-	646	-	948	-	945	-	1,209	-	1,331	-	866	-
8. Other ^{2/}	925	84	921	219	986	167	892	187	692	160	735	29	1,068	250
Less Appropriations-in-Aid	51	75	55	-	70	4	93	-	137	-	94	-	131	-
Total Ministry of Education	13,349	1,647	14,497	1,691	15,220	2,104	17,888	3,161	19,764	6,810	23,490	7,404	25,387	7,883
as % of Central Government														
Recurrent and Capital Expenditure	16.2%	4.5%	16.7%	4.1%	15.3%	4.9%	16.2%	6.2%	15.4%	13.0%	16.5%	11.9%	15.5%	9.1%
as % of Central Government														
Total Expenditure	12.6%		12.6%		12.2%		13.0%		14.7%		15.1%		13.3%	
Ministry of Finance and Planning														
1. University of the West Indies	1,262	140	1,297	188	2,001	71	2,344	172	2,601	83	3,038	53	3,531	785
2. Scholarships and Training	354	-	317	-	362	-	444	-	592	-	559	-	660	3,000
Ministry of Agriculture and Lands														
1. Jamaica School of Agriculture	150	11	159	-	172	19	165	121	252	35	290	513	322	689
2. Farmers' Training	6	24	8	44	5	31	5	31	47	-	-	-	-	-
Ministry of Rural Land Development														
Farmers' Training	-	-	-	-	-	-	-	-	-	-	39	16	48	34
Ministry of Health														
1. West Indies School of Public Health	8	-	7	-	5	-	5	-	5	-	5	-	-	-
2. Allowance Trainee Nurses	249	-	252	-	285	-	263	-	291	-	354	-	584	-
3. Dental Auxiliary Training School	-	-	-	-	-	-	-	-	-	28	-	178	66	32
Ministry of Youth and Community Development														
1. Approved Schools	124	6	130	6	137	8	152	7	148	20	93	24	250	6
2. Youth Camps	184	-	269	-	278	50	258	215	375	128	315	180	465	468
Ministry of Labor and National Insurance														
Training	9	-	7	-	12	-	89	-	194	-	659	-	672	472
Ministry of Trade and Industry														
Training	31	-	39	-	52	-	98	-	98	-	220	-	327	-
Land Acquisition	-	50	-	76	-	86	-	72	-	72	-	100	-	62
Other ^{2/}	661	49	789	69	964	89	1,182	66	1,295	123	1,166	354	1,113	371
Total Expenditure on Education and Training	16,387	1,927	17,771	2,074	19,433	2,458	22,893	3,845	25,662	7,299	30,228	8,822	33,425	13,802
as % of Central Government														
Recurrent and Capital Expenditure	19.9%	5.3%	20.5%	5.0%	19.6%	5.7%	20.7%	7.6%	20.0%	13.9%	21.2%	14.2%	20.4%	15.9%
as % of Central Government														
Total Expenditure	15.4%		15.4%		15.4%		16.6%		18.2%		19.1%		18.9%	
as % of Central Government Revenue	18.4%		17.8%		19.1%		20.4%		22.2%		21.7%		22.9%	
as % of GNP	3.2%		3.1%		3.2%		3.7%		4.1%		4.4%		-	

Source: Ministry of Finance, Financial Statements

^{1/} Evening Institutes, Correspondence Courses, Scholarships to Jamaica School of Agriculture.^{2/} Recurrent Expenditure: Publications Branch, Examination Expenses, Maintenance of School Buildings
Capital Expenditure: Residential Accommodation for Teachers.^{3/} Recurrent Expenditure: Teachers' Pension, Adult Library, Institute of Jamaica (Part spent on Education)
Capital Expenditure: University Hospital, Vocational Training, Trade Union Institute.^{4/} Figures for 1970-71 are the ones shown in the Budget which have not yet included the new salary increase and therefore differ from those in Annex 5 where the effect of salary changes has been taken into account.

December 10, 1970

ANNUAL RECURRENT COST PER STUDENT

	<u>Jamaica^{1/}</u>			<u>Nicaragua</u>	<u>Venezuela</u>
	<u>1964</u>	<u>1967</u>	<u>1968</u>	<u>1966</u>	<u>1967</u>
	(US\$)	(US\$)	(US\$)	(US\$)	(US\$)
Primary Education	26	31	35	46	99
Secondary Education					
First Cycle	-	62	71)	124	267
Second Cycle	192	214	228)		
Post-secondary Education					
Teacher Training	780	763	782	150 ^{2/}	1,156
College of Arts, Science and Technology	696	793	726		
Jamaica School of Agriculture	n.a.	n.a.	1,422		
Higher Education	n.a.	n.a.	1,452	647	1,462

^{1/} For school years (September-June) and including central overhead expenditures.

^{2/} The teacher training is at post secondary level in Jamaica, but at secondary level in Nicaragua.

Source: Ministry of Education, Unesco records and IBRD appraisal report.

December 21, 1970

PROJECTED PUBLIC EXPENDITURE ON EDUCATION AND TRAINING, 1970/1 - 1975/6 /a
(in J\$ million of 1970)

	1970/1		1971/2		1972/3		1973/4		1974/5		1975/6		Annual Increase/b 1970/1-1975/6 (\$)		1976/7	1977/8	1978/9	1979/80	1980/1	Annual Increase 1975/6-1980/1 (\$)	
	Recur- rent	Cap- ital	Recur- rent	Cap- ital	Recur- rent	Cap- ital	Recur- rent	Cap- ital	Recur- rent	Cap- ital	Recur- rent	Cap- ital	1970/1- 1975/6 (\$)							1975/6- 1980/1 (\$)	
Ministry of Education																					
1. Primary Education	13.23	1.81	14.58	1.40	16.10	2.00	18.69	2.50	20.68	2.00	22.91	2.00	11.6		24.81	27.41	30.19	32.89	35.75	9.3	
2. Secondary Education	9.01	4.74	10.45	1.62	12.00	3.95	13.73	5.27	15.58	2.64	17.58	1.87	14.3		19.48	21.42	23.50	25.74	27.78	9.6	
(a) First Cycle Secondary	3.13	4.19	3.78	.66	4.21	1.08	4.65	1.44	5.17	.73	5.79	.51	13.1		6.29	6.71	7.16	7.64	8.27	7.4	
(b) Second Cycle Secondary	5.88	.55	6.67	.96	7.79	2.87	9.08	3.83	10.41	1.91	11.79	1.33	14.9		13.19	14.71	16.34	18.10	19.51	10.6	
3. Post-Secondary Education	2.39	1.03	2.60	.25	2.83	.47	3.06	.78	3.29	.29	3.56	.20	8.3		3.74	3.95	4.16	4.42	4.67	5.6	
(a) Teacher Training	2.01	.24	2.18	.12	2.35	.39	2.53	.68	2.71	.24	2.90	.15	7.6		3.04	3.19	3.35	3.54	3.74	5.2	
(b) College of Arts Science and Tech.	.28	.79	.32	.13	.37	.08	.42	.10	.47	.05	.54	.05	14.0		.58	.63	.68	.74	.79	7.9	
(c) Other /1	.10	-	.10	-	.11	-	.11	-	.11	-	.12	-	3.7		.12	.13	.13	.14	.14	3.1	
4. Higher Education	.25	-	.26	-	.27	-	.28	-	.29	-	.30	-	3.7		.31	.32	.33	.35	.36	3.7	
5. Public & School Libraries	.60	.05	.63	.05	.66	.05	.69	.05	.73	.05	.77	.05	5.1		.80	.82	.85	.88	.91	3.4	
6. School Radio & TV Broadcast	.14	-	.15	.10	.17	.55	.20	.37	.22	.15	.23	-	10.4		.24	.24	.25	.26	.27	3.3	
7. Administration	.83	-	.90	-	.97	-	1.05	-	1.12	-	1.19	-	7.5		1.25	1.30	1.36	1.43	1.50	4.7	
8. Other /2	1.07	.25	1.10	.25	1.13	.38	1.16	.38	1.20	.25	1.23	.15	2.8		1.26	1.28	1.31	1.34	1.37	2.2	
Total Ministry of Education as % of Central Government Recurrent and Capital Expend.	27.52	7.88	30.67	3.67	34.13	7.40	38.86	9.35	43.11	5.38	47.57	4.27	11.6		51.89	56.74	61.95	67.31	72.61	8.8	
as % of Central Government Total Expenditure	14.1%		13.6%		15.3%		16.0%		15.6%		16.0%										
Ministry of Finance and Planning																					
1. Univ. of the West Indies	3.53	.79	3.76	2.25	4.00	2.90	4.26	4.20	4.51	2.70	4.84	1.40	6.5		5.14	5.16	5.81	6.17	6.56	6.3	
2. Scholarships and Training	.66	3.00	.71	-	.77	-	.83	-	.90	-	.97	-	8.0		-	-	-	-	-	-	
Ministry of Agriculture and Lands																					
Jamaica School of Agric.	.32	.69	.36	.10	.40	-	.45	-	.50	-	.56	-	11.8		-	-	-	-	-	-	
Ministry of Rural Land Development																					
Farmers' Training	.05	.03	.06	-	.07	.07	.08	.03	.08	-	.09	-	12.5		-	-	-	-	-	-	
Ministry of Health																					
Health Personnel Training	.65	.03	.68	-	.73	.21	.77	.60	.81	.32	1.17	.09	12.5		-	-	-	-	-	-	
Ministry of Youth and Community Development																					
1. Approved Schools	.25	.01	.26	-	.28	-	.29	.04	.30	.16	.32	.12	5.1		-	-	-	-	-	-	
2. Youth Camps	.49	.47	.64	.80	.82	.60	1.06	.60	1.34	.30	1.72	.10	28.6		-	-	-	-	-	-	
Ministry of Labour and National Insurance																					
Training	.71	.47	.97	.60	1.31	.45	1.59	.45	1.86	.45	2.14	.45	24.7		-	-	-	-	-	-	
Ministry of Trade and Industry																					
Training	.33	-	.40	-	.48	-	.57	-	.66	-	.75	-	17.8		-	-	-	-	-	-	
Other /3	1.11	.43	1.20	-	1.27	-	1.35	-	1.43	-	1.52	-	6.5		-	-	-	-	-	-	
Total Expenditure on Education and Training																					
as % of Central Government Recurrent and Capital Expend.	35.62	13.80	39.71	7.42	44.26	11.63	50.11	15.27	55.53	9.31	61.65	6.43	11.6								
as % of Central Government Total Expenditure	21.0%	17.0%	21.5%	10.9%	22.2%	16.2%	22.9%	18.6%	23.5%	12.6%	24.3%	9.1%									
as % of Central Govt. Revenue	19.7%		18.7%		20.6%		21.7%		20.9%		21.0%										
as % of GNP	23.9%		20.6%		23.1%		25.5%		24.5%		24.9%										
	5.1%		4.7%		5.3%		5.9%		5.6%		5.6%										

NOT AVAILABLE

/a Recurrent and Capital Expenditure for 1970/1-1975/6; Recurrent Expenditure only for 1975/6-1980/1.

/b Recurrent Expenditure only.

/1 Evening Institutes, Correspondence Courses, Scholarships to Jamaica School of Agriculture.

/2 Recurrent Expenditure: Publications Branch, Examination Expenses, Maintenance of School Buildings
Capital Expenditure: Residential Accommodation for Teachers./3 Recurrent Expenditure: Teachers' Pension, Adult Library, Institute of Jamaica (Part spent on Education)
Capital Expenditure: University Hospital, Trade Union Institute.

Source: IBRD mission projections

December 9, 1970

MANPOWER REQUIREMENTS 1967, 1975 AND 1980

Levels of Workers	1967		Increase Required, 1967-1975					1975		Increase Required, 1975-1980					1980	
	Demand (Total Empl.)	As % of Total Empl.	New Entries Req'd.	Return- ing Migrants	Less		Net Increase	Demand	As % of Total Dem.	New Entries Req'd.	Return- ing Migrants	Less		Net Increase	Demand	As % of Total Dem.
					Death & Retire- ment	Emigra- tion						Death & Retire- ment	Emigra- tion			
Professional, Technical and Related	24,960	4.2	19,430	3,600	2,490	10,580	9,960	34,920	5.0	18,730	2,250	4,710	6,620	9,650	44,570	5.7
Managerial, Executive and Administrative	12,810	2.1	5,450	-	1,220	790	3,440	16,250	2.3	5,380	-	2,110	500	2,770	19,020	2.5
Clerical	47,590	8.0	23,880	2,400	5,440	8,640	12,200	59,790	8.5	22,220	1,500	7,780	5,400	10,540	70,330	9.1
Sales	23,280	3.9	11,040	1,600	2,690	870	9,080	32,360	4.6	11,760	1,000	4,240	550	7,970	40,330	5.2
Sub-total	108,640	18.2	59,800	7,600	11,840	20,880	34,680	143,320	20.4	58,090	4,750	18,840	13,070	30,930	174,250	22.5
Sub-total All Others	489,590 ¹	81.8	159,000	16,400	55,300	51,120	68,980	558,570 ²	79.6	134,490	10,300	69,600	31,930	43,260	601,830 ³	77.5
Total	598,230	100.0	218,800	24,000	67,140	72,000	103,660	701,890	100.0	192,580	15,050	88,440	45,000	74,190	776,080	100.0

¹ 110,930 craftsmen and other skilled workers; 378,660 semi-skilled and unskilled workers.

² 134,080 craftsmen and other skilled workers; 424,490 semi-skilled and unskilled workers.

³ 148,040 craftsmen and other skilled workers; 453,790 semi-skilled and unskilled workers.

Source: Central Planning Unit and mission estimates

EDUCATIONAL REQUIREMENTS FOR THE LABOR MARKET

1967 - 1975 and 1975 - 1980

	<u>New Entries into Labor Market</u>		<u>Degree or Equivalent</u>		<u>Completed Secondary</u>		<u>Non-compl. Secondary</u>		<u>Grade 10 and Below</u>
				<u>1967 - 1975</u>					
Professional, Technical and Related Workers	19,430	(30%:)	5,830	(70%:)	13,600	-	-	-	-
Managerial, Executive and Administrative Personnel	5,450		-	(20%:)	1,090	(20%:)	1,090	(60%:)	3,270
Clerical Workers	23,880		-	(10%:)	2,390	(30%:)	7,160	(60%:)	14,330
Sales Workers	11,040		-	(10%:)	1,100	(30%:)	3,310	(60%:)	6,630
Sub-total	59,800		5,830		18,180		11,560		24,230

				<u>1975 - 1980</u>					
Professional, Technical and Related Workers	18,730	(30%:)	5,620	(70%:)	13,110	-	-	-	-
Managerial, Executive and Administrative Personnel	5,380		-	(40%:)	2,160	(30%:)	1,610	(30%:)	1,610
Clerical Workers	22,220		-	(10%:)	2,220	(30%:)	6,670	(60%:)	13,330
Sales Workers	11,760		-	(10%:)	1,180	(30%:)	3,530	(60%:)	7,050
Sub-total	58,090		5,620		18,670		11,810		21,990
Total 1967 - 1980	117,890		11,450		36,850		23,370		46,220

Source: IBRD mission projections

December 21, 1970

ENROLLMENT IN PUBLIC SECONDARY LEVEL AND HIGHER INSTITUTIONS, 1967-68

	Grade 7	Grade 8	Grade 9	Total First Cycle	Grade 10	Grade 11	Sub-Total Grades 10 - 11	Sub-Total Grades 12 - 13	Total Second Cycle	Grand Total First and Second Cycle	Post-Secondary Schools Total
A. <u>SECONDARY LEVEL</u>											
Senior Departments, Primary Schools	31,453	26,048	24,622	82,123	-	-	-	-	-	82,123	
Junior Secondary Schools	4,908	4,016	5,339	14,263	-	-	-	-	-	14,263	
Secondary High Schools	4,364	4,016	3,898	12,278	3,670	4,391	8,061	1,593	9,654	21,932	
Comprehensive High Schools	606	479	427	1,512	353	381	734	-	734	2,246	
Technical High Schools	-	833	803	1,636	814	887	1,701	-	1,701	3,337	
Agriculture School	-	-	-	-	55	48	103	-	103	103	
Home Economics School	-	-	-	-	91	86	177	-	177	177	
Trade Training Centers	-	-	-	-	427	25	452	-	452	452	
 GRAND TOTAL SECONDARY	41,331	35,392	35,089	111,812	5,410	5,818	11,228	1,593	12,821	124,633	
B. <u>HIGHER INSTITUTIONS</u>											
(i) <u>Post-Secondary</u>											
Primary Teacher Training											1,813
College of Arts, Science and Technology											1,100
Jamaica School of Agriculture											164
TOTAL											3,077
(ii) University of West Indies (Jamaican Students only)											1,489
 GRAND TOTAL - HIGHER											4,566

Source: Ministry of Education

Estimated Output from Grades 11/13 Secondary Education
and Vocational Classes (Grade 11)

	Estimated Output	Into Grades 12 - 13	Into Teacher Training	Into Jamaica School of Agriculture	Into College of Arts, Science and Technology	Into University of West Indies	Female Non- Participation	Available For Jobs	Failures and Dropouts from Grades 12 - 13	Grand Total Available for Jobs
1967 - 1968	5,800	900	800	100	400	200	1,100	2,300	300	2,600
1968 - 1969	6,000	900	1,000	100	500	200	1,200	2,100	400	2,500
1969 - 1970	6,500	1,000	1,000	100	500	200	1,300	2,400	400	2,800
1970 - 1971	6,500	1,000	1,200	150	500	200	1,450	2,000	400	2,400
1971 - 1972	7,000	1,200	1,200	150	600	250	1,600	2,000	500	2,500
1972 - 1973	8,000	1,300	1,500	150	650	250	1,750	2,400	500	2,900
1973 - 1974	9,000	1,400	1,500	150	700	250	1,900	3,100	500	3,600
1974 - 1975	11,000	1,500	1,500	150	750	300	2,000	4,800	600	5,400
1975 - 1976	12,000	1,500	1,500	150	750	300	2,100	5,700	600	6,300
1976 - 1977	13,000	1,500	1,500	150	800	300	2,250	6,500	700	7,200
1977 - 1978	14,000	1,500	1,500	150	850	300	2,300	7,400	700	8,100
1978 - 1979	15,000	1,500	1,500	150	950	400	2,400	8,100	700	8,800
1979 - 1980	16,000	1,500	1,500	150	950	400	2,500	9,000	700	9,700
								57,800	7,000	64,800

Source: IBRD mission estimates

Teacher Requirements and Supply
A. Primary and First Cycle Secondary ^{1/}

ANNEX 11

	Primary						Senior Departments and First Cycle Secondary						
	Projected Enrollment	Teachers Required	Teachers on Post		Wastage of Qualified ^{2/}	Output of Qualified	Projected Enrollment	Teachers Required	Teachers on Post ^{3/}		Wastage of Qualified ^{2/}	Output of Qualified	Output of University Graduates
			Qualified	Unqualified					Qualified	Unqualified			
1967-1968	299,000	6,700 ^{4/}	3,000	3,700	180	500	116,000	2,900	2,400	500	140	200	-
1968-1969	310,000	6,900	3,320	3,580	200	500	120,000	3,000	2,460	540	150	340	-
1969-1970	315,000	7,000	3,620	3,380	220	650	125,000	3,600	2,650	950	160	330	-
1970-1971	320,000	7,100	4,050	3,050	240	600	130,000	4,000	2,820	1,180	170	400	-
1971-1972	325,000	7,200	4,410	2,790	260	700	135,000	4,500	3,050	1,450	180	450	10
1972-1973	330,000	7,400	4,850	2,550	290	700	140,000	4,700	3,330	1,370	200	450	20
1973-1974	335,000	8,000	5,260	2,740	320	700	145,000	4,800	3,600	1,200	210	550	30
1974-1975	340,000	8,300	5,640	2,660	340	850	150,000	5,000	3,970	1,030	230	550	50
1975-1976	348,000	8,700	6,150	2,550	360	850	160,000	5,300	4,340	960	260	550	60
1976-1977	360,000	9,000	6,640	2,360	400	850	164,000	5,500	4,690	810	280	550	60
1977-1978	380,000	9,500	7,190	2,310	420	850	168,000	5,600	5,020	580	300	550	80
1978-1979	400,000	10,000	7,620	2,380	400	850	170,000	5,700	5,350	350	320	550	80
1979-1980	416,000	10,400	8,170	2,230	420	850	175,000	5,800	5,660	14	340	550	80
1980-1981	432,000	10,800	8,600	2,200 ^{5/}	-	-	180,000	6,000	5,950 ^{5/}	50	-	-	-

^{1/} Assumes that after 1970 attempt will be made to provide qualified teachers on the 1:30 teacher-pupil ratio in all first cycle secondary level institutions; hence the distortions of the qualified to unqualified ratio in the early seventies.

^{2/} At 6%.

^{3/} Qualified at this level = university graduates or teachers specially trained for this level of work.

^{4/} Assumes about 1,000 in private schools and 5,700 in public.

^{5/} Percentage of unqualified reduced from 55% to 20% in primary, while all qualified in first cycle secondary, by 1980. This suggests that courses at the teacher training colleges should be flexible to change emphases as the circumstances warrant as from 1976. In the early eighties one training college could be diverted to another purpose, particularly so if the university is able to provide a greater number of graduates for first cycle secondary, or the length of the teacher training course could be increased.

B. Qualified Teacher Requirements - Second Cycle Secondary

	Enrollment Projection	Number of Teachers Required ^{1/}	Qualified Teachers on Post	Wastage at 8%	Additional Qualified Teachers Required	Annual Needs to be Met		
						From University of the West Indies	From CAST (Technical Teacher Training Department)	From J.S.A. Home Economics Department and Commerce Department of CAST
1967-1968	12,821	640	700	60	60	90	-	10
1968-1969	14,000	700	700	60	60	50	-	10
1969-1970	15,000	750	750	60	110	100	-	10
1970-1971	16,000	800	800	70	120	110	-	10
1971-1972	17,000	850	850	70	170	150	-	20
1972-1973	19,000	950	950	80	180	150	-	30
1973-1974	21,000	1,050	1,050	90	190	160	-	30
1974-1975	23,000	1,150	1,150	90	190	160	-	30
1975-1976	25,000	1,250	1,250	100	200	170	-	30
1976-1977	27,000	1,350	1,350	110	210	120	80	10
1977-1978	29,000	1,450	1,450	120	220	130	80	10
1978-1979	31,000	1,550	1,550	120	220	130	80	10
1979-1980	33,000	1,650	1,650	130	230	140	80	10
1980-1981	34,000	1,700	1,700	130	180	90	80	10

^{1/} Teacher-pupil ratio of 1:20
Source: IBRD mission estimates

JAMAICA - Second Education Project

Summary of Estimated Project Costs in Jamaican Dollars Thousands

		Added student places	Added boarding places	Cost of site deve- lopment	Cost of Buildings				Cost of Furniture			Cost of equipment	Cost of professional services	Total cost of physical facilities	
					Teaching and Communal	Board- ing	Staff housing	Total	Teaching and Communal	Board- ing	Total			in J\$	in US\$
<u>Conversion of 17 existing High Schools</u>															
A1	Excelsior, St. Andrew	991	-	60.3	369.9	-	32.1	402.0	33.1	-	33.1	123.5	64.7	683.6	820.3
A2	Meadowbrook, St. Andrew	475	-	24.2	161.1	-	-	161.1	24.5	-	24.5	94.7	25.9	330.4	396.5
A3	Camperdown, Kingston	389	-	28.9	160.8	-	32.1	192.9	17.8	-	17.8	62.7	30.5	332.8	399.4
A4	St. Andrew Tech., St. Andrew	483	-	15.9	105.7	-	-	105.7	10.0	-	10.0	81.4	17.1	230.1	276.1
A5	Mannings, Westmoreland	421	-	39.2	229.1	-	32.1	261.2	23.3	-	23.3	71.4	42.1	437.2	524.7
A6	St. Elizabeth Tech., St. Eliz.	264	-	18.4	90.5	-	32.1	122.6	8.1	-	8.1	58.2	19.7	227.0	272.4
A7	Manchester High, Manchester	724	-	45.8	272.9	-	32.1	305.0	28.6	-	28.6	104.6	49.1	533.1	639.7
A8	Holmwood, Manchester	4	-	26.3	143.0	-	32.1	175.1	14.9	-	14.9	70.6	28.3	315.2	378.2
A9	Vere, Clarendon	427	-	28.5	157.6	-	32.1	189.7	17.5	-	17.5	85.0	35.5	356.2	427.5
A10	Knockalva, Hanover	225	-	32.8	186.7	-	32.1	218.8	16.7	-	16.7	72.3	35.3	375.9	451.1
A11	Ferncourt, St. Anne	668	-	51.7	312.7	-	32.1	344.8	27.6	-	27.6	84.7	55.5	564.3	677.2
A12	St. Catherine High, St. Cath.	337	-	20.3	113.0	-	21.4	134.4	10.1	-	10.1	75.6	21.7	262.1	314.5
A13	Dinthill, St. Catherine	417	-	23.4	123.8	-	32.1	155.9	12.7	-	12.7	76.4	25.1	293.5	352.2
A14	Cornwall, St. James	178	-	27.3	149.8	-	32.1	181.9	13.4	-	13.4	81.4	29.2	333.2	399.8
A15	St. Mary High, St. Mary	392	-	29.1	161.7	-	32.1	193.8	16.1	-	16.1	85.0	31.2	355.2	426.2
A16	Jamaica College, St. Andrew	432	-	32.9	219.2	-	-	219.2	23.8	-	23.8	81.4	35.3	392.6	471.1
A17	Frankfield, Clarendon	445	-	26.9	147.7	-	32.1	179.8	12.8	-	12.8	74.8	28.9	323.2	387.8
Sub-total		6,682	-	531.9	3,105.2	-	438.7	3,543.9	311.0	-	311.0	1,383.7	575.1	6,345.6	7,614.7
<u>Conversion of 9 existing Junior Secondary Schools</u>															
A18	Haile Selassie, St. Andrew	492	-	35.8	238.6	-	-	238.6	21.4	-	21.4	87.6	38.5	421.9	506.3
A19	Maxfield Park, St. Andrew	492	-	35.8	238.6	-	-	238.6	21.4	-	21.4	87.6	38.5	421.9	506.3
A20	Pembroke Hall, St. Andrew	492	-	35.8	238.6	-	-	238.6	21.4	-	21.4	87.6	38.5	421.9	506.3
A21	Port Maria, St. Mary	400	-	35.7	237.7	-	-	237.7	20.5	-	20.5	72.7	38.3	404.9	485.9
A22	St. Ann's Bay, St. Ann	400	-	35.7	237.7	-	-	237.7	20.5	-	20.5	72.7	38.3	404.9	485.9
A23	Maldon, St. James	256	-	22.2	116.2	-	32.1	148.3	9.8	-	9.8	57.4	23.8	261.5	313.8
A24	Ruseas, Hanover	400	-	35.7	237.7	-	-	237.7	20.5	-	20.5	72.7	38.3	404.9	485.9
A25	Black River, St. Elizabeth	288	-	18.6	123.7	-	-	123.7	11.1	-	11.1	56.9	19.9	230.2	278.2
A26	Old Harbour, St. Catherine	400	-	27.6	184.1	-	-	184.1	16.1	-	16.1	47.4	29.6	304.8	365.7
Sub-total		3,620	-	282.9	1,852.9	-	32.1	1,885.0	162.7	-	162.7	642.6	303.7	3,276.9	3,932.3
<u>2 New Comprehensive High Schools</u>															
A27	Falmouth, Trelawny	880	-	55.1	335.3	-	32.1	367.4	30.0	-	30.0	86.4	59.1	598.0	717.6
A28	Stony Hill, St. Andrew	880	-	55.1	335.3	-	32.1	367.4	30.0	-	30.0	86.4	59.2	598.1	717.7
Sub-total		1,760	-	110.2	670.6	-	64.2	734.8	60.0	-	60.0	172.8	118.3	1,196.1	1,435.3

February 12, 1971

JAMAICA - Second Education Project

Summary of Estimated Project Costs in Jamaican Dollars Thousands

	Added student places	Added boarding places	Cost of site development	Cost of Buildings			Cost of Furniture			Cost of equipment	Cost of professional services	Total cost of Physical facilities				
				Teaching and Communal	Boarding	Staff housing	Total	Teaching and Communal	Boarding			Total	in J\$	in US\$		
<u>12 New Junior Secondary Schools</u>																
A29	Gayle, St. Mary	480	-	34.9	200.6	-	32.1	232.7	17.2	-	17.2	21.6	37.5	343.9	412.7	
A30	Islington, St. Mary	480	-	34.9	200.6	-	32.1	232.7	17.2	-	17.2	21.6	37.5	343.9	412.7	
A31	Duncans, Trelawny	480	-	34.9	200.6	-	32.1	232.7	17.2	-	17.2	21.6	37.5	343.9	412.7	
A32	Balaclava, St. Elizabeth	480	-	34.9	200.6	-	32.1	232.7	17.2	-	17.2	21.6	37.5	343.9	412.7	
A33	Pratville, Manchester	480	-	34.9	200.6	-	32.1	232.7	17.2	-	17.2	21.6	37.5	343.9	412.7	
A34	Cross Keys, Manchester	480	-	34.9	200.6	-	32.1	232.7	17.2	-	17.2	21.6	37.5	343.9	412.7	
A35	Bethel Town, Westmoreland	480	-	34.9	200.6	-	32.1	232.7	17.2	-	17.2	21.6	37.5	343.9	412.7	
A36	Browns Hall, St. Catherine	480	-	34.9	200.6	-	32.1	232.7	17.2	-	17.2	21.6	37.5	343.9	412.7	
A37	James Hill, Clarendon	480	-	34.9	200.6	-	32.1	232.7	17.2	-	17.2	21.6	37.5	343.9	412.7	
A38	Harbour View, St. Andrew	720	-	45.2	269.0	-	32.1	301.1	23.3	-	23.3	23.3	48.4	441.2	529.4	
A39	New Market, St. Elizabeth	480	-	34.9	200.6	-	32.1	232.7	17.2	-	17.2	21.6	37.5	343.9	412.7	
A40	Duhaney Park, St. Andrew	720	-	45.2	269.0	-	32.1	301.1	23.3	-	23.3	23.2	48.4	441.2	529.4	
Sub-total		6,240	-	439.4	2,544.0	-	385.2	2,929.2	218.6	-	218.6	262.5	471.8	4,321.5	5,185.8	
<u>New Primary Teacher Training College</u>																
B1	Savannah-la-Mar, Westmoreland	300	300	86.1	229.5	244.1	100.5	574.1	20.6	19.9	40.5	68.5	92.5	861.7	1,034.0	
<u>Expansion of Existing Teacher Training College</u>																
B2	Mandeville, Manchester	200	200	73.1	144.1	164.6	56.3	365.0	11.2	13.4	24.6	51.1	61.3	575.1	690.1	
<u>Technical Teacher Training Department at C. A. S. 1</u>																
B3	St. Andrew	300	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sub-total		800	500	159.2	373.6	408.7	156.8	939.1	31.8	33.3	65.1	119.6	153.8	436.8	1,724.1	
<u>2 New Trade Training Centers</u>																
C1	Petersfield, Westmoreland	80	-	8.5	56.6	-	-	56.6	6.9	-	6.9	50.0	9.1	131.1	157.3	
C2	Bog Walk, St. Catherine	80	-	10.4	70.0	-	-	70.0	8.5	-	8.5	55.0	11.3	155.2	186.3	
Sub-total		160*	-	18.9	126.6	-	-	126.6	15.4	-	15.4	105.0	20.4	286.3	343.6	
<u>Instructional TV and Educational Materials and Aids Center</u>																
D1	Corporate Area	-	-	90.5	603.7	-	-	603.7	49.1	-	49.1	332.0	97.2	1,172.5	1,407.0	
TOTAL A1 - D1				1,633.0	9,276.6	408.7	1,077.0	10,762.3	848.6	33.3	881.9	3,018.2	1,740.3	18,035.7	21,642.8	
Contingencies %				29.1%				29.1%			15%		20%	25.2%	25.2%	
Amount 1/				475.8				3,134.2			132.2	452.7	348.1	4,543.0	5,451.4	
TOTAL A1 - D1 and Contingencies				2,108.8				13,896.5			1,014.1	3,470.9	2,088.4	22,578.7	27,094.2	
													Technical Assistance, 23 man-years @ US\$ 35,000	670.8	805.0	
													Fellowship, 20 man-years @ US\$ 6,000	100.0	120.0	
													Sub-total	770.8	925.0	
													15% Contingencies	115.6	138.7	
													Project Grand TOTAL		23,465.1	28,157.9

Foreign Exchange Component 2/ - %				34.6%												
(including f.e.c. of contingencies) Amount				730.0												
					34.6%	40%	95%	20%	44.2% 2/	44.2% 2/						
					4,804.2	405.4	3,297.4	417.9	10,364	12,437						
					Interest and other charges during construction											
Total cost of project including interest and other charges during construction													24,351	29,221		
* - Enrollment at 120																

* - Enrollment at 320

1/ see Annex 15 for contingency allowances

2/ including foreign exchange component (80%) of Technical Assistance and Fellowship (Amount J\$ 886.4 x 80% = J\$ 709.1 = US\$ 850.9)

February 12, 1971

1/
Enrollment Structure and Courses, Project Secondary Schools
(in full operation)

Item Nos.		First Cycle Grades 7-9 Total	SECOND CYCLE										Grand Total	Existing 2/ First Second Cycle Cycle		ADDITIONAL				
			Arts	Sc.	Gen.	TI.	Voc.	Com.	H.E.	Agri.	Grades 10-11 Total	Grades 12-13 Arts Sc.		Grades 14-15 Total	First Cycle	Second Cycle	First Cycle	Second Cycle	Total	
A	Conversion of 17 Existing High Schools to Comprehensive Curriculum and Expansion																			
1	Excelsior	1,080	114	114	-	216	60	114	72	-	780	80	120	980	2,060	543	526	537	454	991
2	Meadow brook	360	72	72	-	144	-	72	72	-	432	20	20	472	832	217	113	116	329	475
3	Camper down	360	72	72	-	144	-	72	72	-	432	20	20	472	832	243	200	117	272	475
4	St. Andrew	360	72	72	-	288	160	144	72	-	808	-	-	808	1,168	277	108	83	400	463
5	Mannings	480	114	114	-	144	-	72	72	-	576	20	20	616	1,096	425	250	55	366	421
6	St. Elisabeth	480 2/	72	72	-	144	40	72	72	72	544	-	-	544	1,024	480	280	-	264	264
7	Manchester	720	72	72	-	144	60	72	72	-	492	20	20	532	1,252	303	225	117	307	724
8	Holmwood	-	72	72	-	144	40	72	72	72	544	-	-	544	300	210	300	304	4	4
9	Vere	360	72	72	-	144	60	72	72	72	564	-	-	564	924	257	210	103	324	4
10	Knockalva	600 2/	-	-	72	-	40	-	72	114	328	-	-	328	928	600	103	-	225	225
11	Farncourt	600	72	72	-	144	-	72	72	-	432	20	20	472	1,072	229	175	371	297	668
12	St. Catherine	720	72	72	-	144	40	72	72	-	472	-	-	472	1,192	720	135	-	337	337
13	Dinthill	360	-	-	72	144	40	144	72	114	616	-	-	616	976	279	280	81	336	417
14	Corrwall College	480	72	72	-	144	40	-	-	-	328	40	40	408	888	416	294	64	114	178
15	St. Mary	360	72	72	-	-	40	72	72	72	400	20	20	440	800	251	157	109	283	392
16	Jamaica College	320	114	114	-	216	-	72	-	-	576	80	120	776	1,096	308	356	12	420	432
17	Frankfield	720	72	72	-	72	60	72	72	72	492	-	-	492	1,212	922	435	-202	57	-115
	A 1 - A 17	8,360	1,296	1,296	114	2376	680	1,296	1,080	648	8,816	320	400	9,536	17,896	6,767	4,447	1,593	5,089	6,682
A	3/ Conversion of 9 Existing Junior Secondary Schools to Comprehensive Schools																			
18	Halle Selassie	720	72	72	-	144	60	72	72	-	492	-	-	492	1,212	720	-	-	492	492
19	Maxfield Park	1,080	72	72	-	144	60	72	72	-	492	-	-	492	1,572	1,080	-	-	492	492
20	Pembroke Hall	1,080	72	72	-	144	60	72	72	-	492	-	-	492	1,572	1,080	-	-	492	492
21	Port Maria	720	72	72	-	72	40	72	72	-	400	-	-	400	1,120	720	-	-	400	400
22	St. Anne's Bay	720	72	72	-	72	40	72	72	-	400	-	-	400	1,120	720	-	-	400	400
23	Maldon	720	-	-	72	-	40	72	-	72	256	-	-	256	976	720	-	-	256	256
24	Roseau	720	72	72	-	72	40	72	72	-	400	-	-	400	1,120	720	-	-	400	400
25	Black River	600	-	-	72	72	-	72	72	-	288	-	-	288	888	600	-	-	288	288
26	Old Harbour	1,080	72	72	-	72	40	72	-	72	400	-	-	400	1,480	1,080	-	-	400	400
	A 17 - A 26	7,440	504	504	114	792	380	648	504	114	3,620	-	-	3,620	11,060	7,440	-	-	3,620	3,620
A	2 New Comprehensive Schools																			
27	Falmouth	480	72	72	-	72	40	72	72	-	400	-	-	400	880	-	-	480	400	880
28	Stony Hill	480	72	72	-	72	40	72	72	-	400	-	-	400	880	-	-	480	400	880
	A 27 - A 28	960	114	114	114	80	114	114	-	-	800	-	-	800	1,760	-	-	960	800	1,760
A	12 New Junior Secondary Schools																			
29	Gayle	480	-	-	-	-	-	-	-	-	-	-	-	480	-	-	480	-	-	480
30	Islington	480	-	-	-	-	-	-	-	-	-	-	-	480	-	-	480	-	-	480
31	Duncans	480	-	-	-	-	-	-	-	-	-	-	-	480	-	-	480	-	-	480
32	Balacava	480	-	-	-	-	-	-	-	-	-	-	-	480	-	-	480	-	-	480
33	Pratville	480	-	-	-	-	-	-	-	-	-	-	-	480	-	-	480	-	-	480
34	Cross Keys	480	-	-	-	-	-	-	-	-	-	-	-	480	-	-	480	-	-	480
35	Bethel Town	480	-	-	-	-	-	-	-	-	-	-	-	480	-	-	480	-	-	480
36	Brown's Hall	480	-	-	-	-	-	-	-	-	-	-	-	480	-	-	480	-	-	480
37	James Hill	480	-	-	-	-	-	-	-	-	-	-	-	480	-	-	480	-	-	480
38	Harbour View	720	-	-	-	-	-	-	-	-	-	-	-	720	-	-	720	-	-	720
39	New Market	480	-	-	-	-	-	-	-	-	-	-	-	480	-	-	480	-	-	480
40	Duhamel Park	720	-	-	-	-	-	-	-	-	-	-	-	720	-	-	720	-	-	720
	A 29 - A 40	6,240	-	-	-	-	-	-	-	-	-	-	-	6,240	-	-	6,240	-	-	6,240
	Grand Total	23,000	1,914	1,914	288	3,312	1,140	2,088	1,728	792	13,236	320	400	13,956	36,956	11,207	4,447	8,793	9,509	18,302

Legend: Arts - Academic Arts - bias
Sc. - Academic Science - bias
Gen. - Academic General

TI - Technical Industrial
Voc. - Vocational (Industrial)
Com. - Commercial
Agri. - Agriculture

1/ On single shift basis i.e., enrollment figure equals physical places available.
2/ 1968-1969 data, or projected 1970 enrollment.
3/ Schools of first education project (IBRD-Jamaica)

Teacher Requirements of Project Secondary Level Schools

Item No.		Mother Language	Foreign Language	Social Studies	Maths	Sciences	Technical Industrial Vocational	Commercial	Home Economics	Agriculture	General	Total Sec. Cycle (incl. P+DP)	Total 1/ F.C. (incl. P+DP)	Grand Total
A 1	Excelsior	6	4	3	6	8	8	4	2	-	6	49	36	85
A 2	Meadow brook	3	2	2	3	4	4	2	2	-	2	26	12	38
A 3	Camperdown	3	2	2	3	4	4	2	2	-	2	26	9	35
A 4	St. Andrew	4	2	1	4	4	11	3	2	-	2	35	14	49
A 5	Mannings	4	3	2	4	5	4	2	3	-	3	32	18	50
A 6	St. Elizabeth	3	1	1	3	4	6	2	2	1	2	27	16	43
A 7	Manchester	4	2	1	3	4	6	2	2	-	2	28	24	52
A 8	Holmwood	3	1	1	3	4	6	2	2	1	2	27	-	27
A 9	Vere	3	1	1	3	3	6	2	2	2	3	28	12	40
A 10	Knockalva	2	1		2	2	2		2	3	1	17	20	37
A 11	Ferncourt	3	2	2	3	4	4	2	2	-	2	26	22	48
A 12	St. Catherine	3	1	1	3	3	5	2	2	-	1	23	24	47
A 13	Dinthill	3	1	1	4	3	6	3	2	2	3	30	12	42
A 14	Cornwall College	3	1	2	2	4	5	2	2		3	26	18	44
A 15	St. Mary	3	2	1	3	3	2	2	2	1	2	23	13	36
A 16	Jamaica College	5	3	4	5	8	7	2	2	-	5	43	11	54
A 17	Frankfield	3	1	1	3	3	4	2	2	1	2	24	24	48
A 18	Halle Selassie	3	1	1	3	3	6	6	2		1	28	24	52
A 19	Mansfield Park	3	1	1	3	3	6	6	2		1	28	36	64
A 20	Pembroke Hall	3	1	1	3	3	6	6	2		1	28	36	64
A 21	Port Maria	3	1	1	2	2	3	3	2		1	20	24	44
A 22	St. Anne's Bay	3	1	1	2	2	3	3	2		1	20	24	44
A 23	Maldon	1	1	1	1	2	2	2	-	1	1	14	24	38
A 24	Russas	3	1	1	2	2	3	3	2		1	20	24	44
A 25	Black River	2	1	-	1	2	2	2	2		-	14	20	34
A 26	Old Harbour	3	1	1	2	2	3	3	-	1	2	20	36	56
A 27	Falmouth	2	1	-	2	2	3	3	2	2	1	20	16	36
A 28	Stony Hill	2	-	1	2	2	3	3	2	2	1	20	16	36
A 29- A 40	2 Junior Sec.Schools (6 stream entry)											-	52	52
	10 Junior Sec.Schools (4 stream entry)											-	180	180
Total		86	40	35	80	95	130	76	53	17	54	722	797	1,519

1/ FC - First Cycle P - Principal : DP - Deputy Principal

JAMAICA - Contingency Allowances

(in thousand US\$)

	<u>Site Development</u>		<u>Building</u>		<u>Furniture</u>		<u>Equipment</u>		<u>Professional Services</u>		<u>Technical Assistance</u>		<u>Total</u>
	<u>Local</u>	<u>Foreign</u>	<u>Local</u>	<u>Foreign</u>	<u>Local</u>	<u>Foreign</u>	<u>Local</u>	<u>Foreign</u>	<u>Local</u>	<u>Foreign</u>	<u>Local</u>	<u>Foreign</u>	
Allowances for unforeseen factors	10%	10%	10%	10%	5%	5%	5%	5%	10%	10%	-	-	
Allowances for price increases	22%	11%	22%	11%	10%	10%	10%	10%	10%	10%	15%	15%	
Total	32%	21%	32%	21%	15%	15%	15%	15%	20%	20%	15%	15%	
Total cost before contingencies	1,254	706	8,266	4,648	635	424	181	3,441	1,670	418	185	740	22,568
<u>Contingencies</u>													
- Unforeseen factors	125	71	827	465	31	21	9	172	167	42	-	-	1,930
- Price increases	276	99	1,818	651	64	42	18	344	167	42	28	111	3,660
Total	401	170	2,645	1,116	95	63	27	516	334	84	28	111	5,590*
Total cost including contingencies	655	876	10,911	5,764	730	487	208	3,957	2,004	502	213	851	28,158

* Total contingencies account for 24.8% of base line cost (8.6% for unforeseen factors, 16.2% for price increases).

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JAMAICA - Capital Unit Costs in New Project Institutions^{1/}
(in US\$)

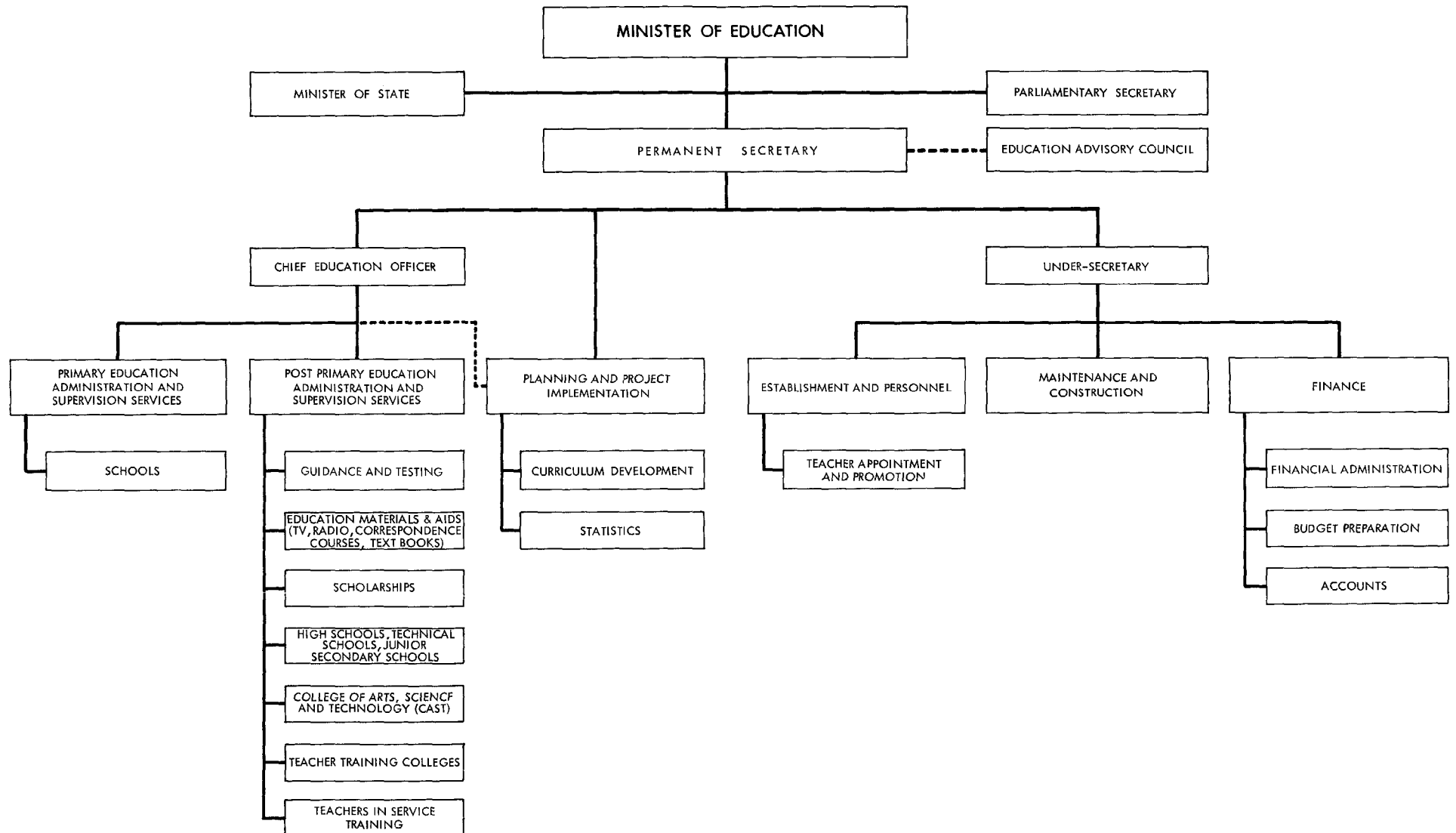
<u>Category</u>		<u>Site Devel- opment</u>	<u>Build- ing</u>	<u>Furni- ture</u>	<u>Equip- ment</u>	<u>Total</u>	<u>Similar Bank Group Financed Institutions</u>
1. <u>Academic & Communal Facilities</u>							
Comprehensive Secondary Schools	Student place	69	457	41	118	685	1,221 (Guyana) 518 (Nicaragua)
Junior Secondary Schools	"	73	489	42	50	654	825 (Trinidad)
Primary Teacher Training College	"	138	918	82	274	1,412	870 (Guyana) 552 (Nicaragua) ^{2/}
Trade Training Centers	"	143	950	116	788	1,997	
2. <u>Boarding Facilities</u>							
Primary Teacher Training College	Student place	146	976	80	-	1,202	825 (Guyana)
3. <u>Staff Housing</u>							
Junior Secondary Schools Comprehensive Secondary Schools	Head- master's house	2,189	14,595	-	-	16,784	16,531 (Guyana)
Primary Teacher Training College	Bachelor staff flat	597	3,980	-	-	4,577	

^{1/} Excluding professional fees and contingencies.

^{2/} Teacher Training in Nicaragua is at secondary level.

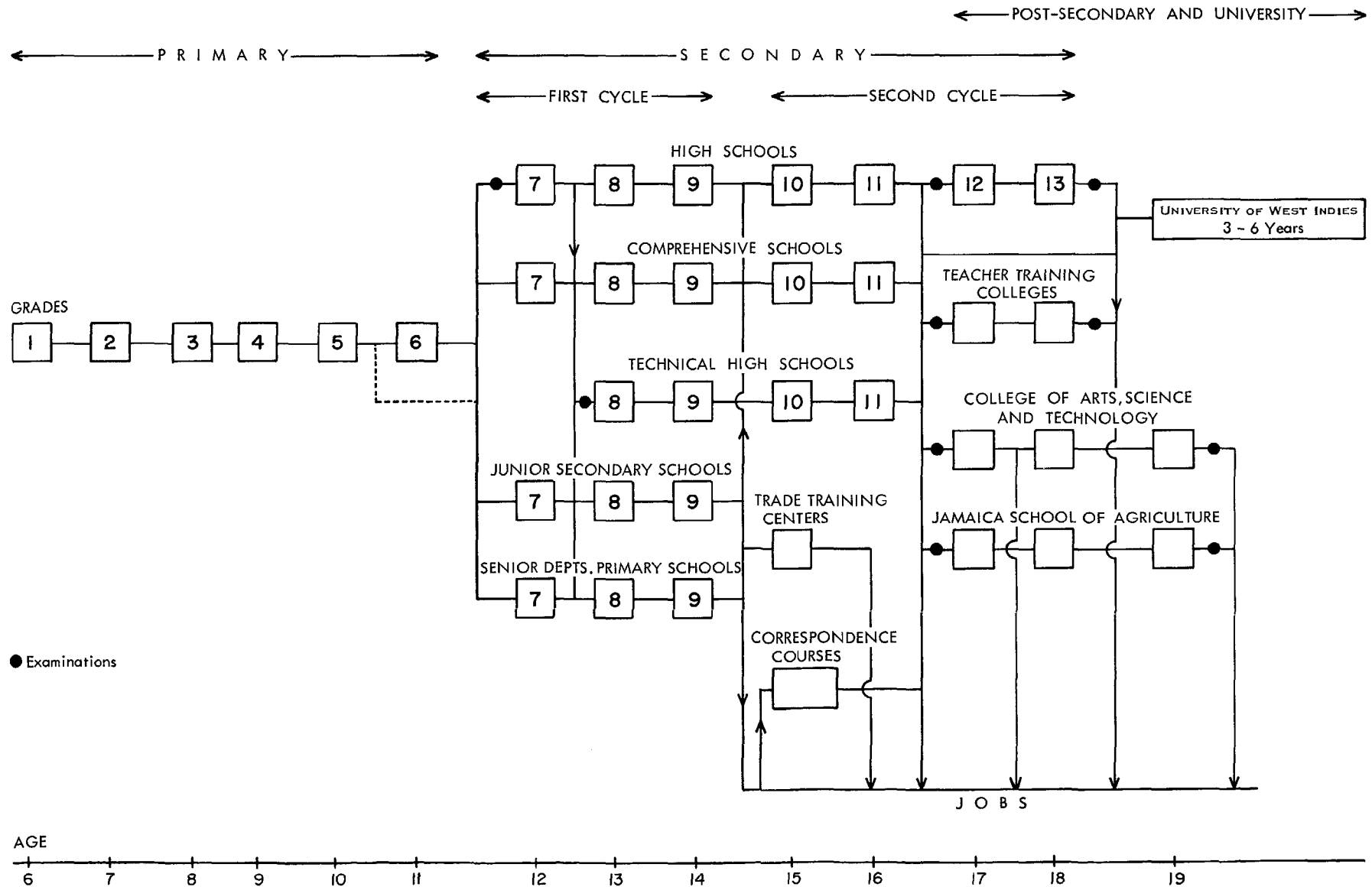
February 16, 1971

JAMAICA: THE ADMINISTRATION OF EDUCATION, 1970



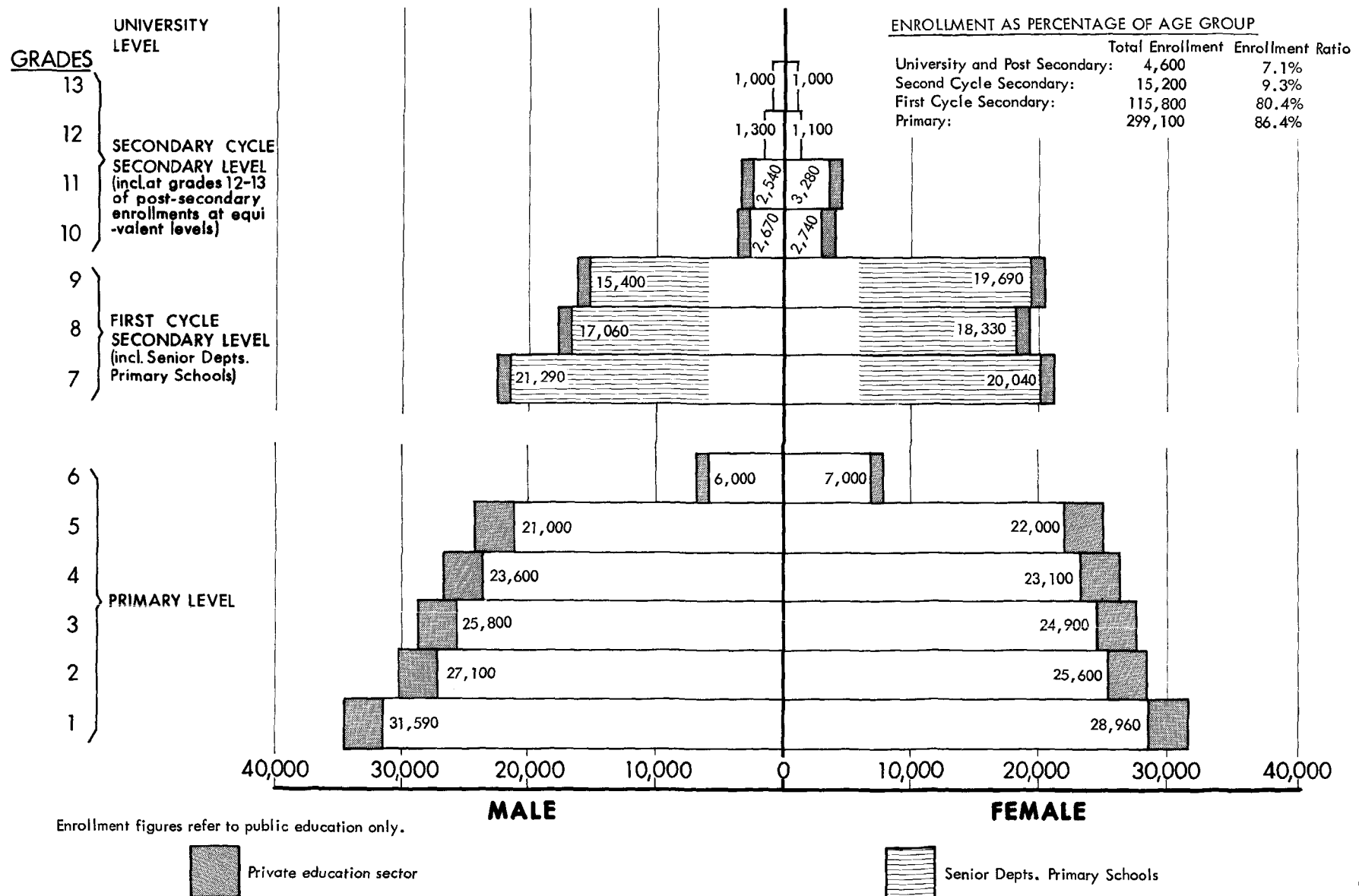
JAMAICA

STRUCTURE OF THE FORMAL EDUCATION SYSTEM, 1970



JAMAICA

THE EDUCATIONAL PYRAMID, 1967-1968



JAMAICA - Project Implementation Schedule

Implementation 1/ Year	Quarter	First				Second				Third				Fourth				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
<u>Physical Facilities</u>		///	///															
Conversion of 17 High Schools to comprehensives				===	===	***	*--	--X	XXX	XXX	XXX	XXS	SS				+	
Conversion of 9 Junior Secondary Schools to comprehensives				===	===	***	*--	--X	XXX	XXX	XXX	XXS	SS				+	
2 New Comprehensive Schools				===	===	***	*--	--X	XXX	XXX	XXX	XXS	SS				+	
12 New Junior Secondary Schools				===	***	*--	--X	XXX	XXX	XXX	XXS	SS				+		
3 Teacher Training Colleges				===	===	***	*--	--X	XXX	XXX	XXX	XXS	SS				+	
2 Vocational Training Centers				===	***	*--	---	XXX	XXX	XXX	SSS				+			
ITV and Education Materials and Aids Center				===	===	***	*--	--X	XXX	XXX	XXX	XXS	SS				+	
<u>Project Expenditure:</u>																		
	(US\$ Millions)	<u>Foreign Exchange</u>																
Total	28.16	44.2%			0.38	0.40	0.42	0.44	1.94	7.25	4.34	4.34	3.90	2.11	0.59	0.12	0.55	1.38
Local	15.72				0.21	0.22	0.23	0.25	1.08	4.05	2.42	2.42	2.18	1.18	0.33	0.07	0.31	0.77
Foreign	12.44				0.17	0.18	0.19	0.19	0.86	3.20	1.92	1.92	1.72	0.93	0.26	0.05	0.24	0.61

1/ Implementation starts from date of effectiveness.

Legend:

/// = Selection and appointment of specialists
 === = Design and survey of sites
 *** = Preparation of bid packages
 --- = Tender
 XXX = Construction
 SSS = Installation
 + = End of guarantee period

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JAMAICA - Estimated Disbursement Schedule
(in US\$ millions)

<u>Quarters</u> ^{1/}	<u>Disbursement</u>	<u>Accumulated</u> ^{2/} <u>Disbursement</u>	<u>Undisbursed</u> <u>Balance</u>	<u>Interest</u> ^{3/}	<u>Commitment</u> ^{4/} <u>Charges</u>	<u>Total Interest</u> <u>& Other Charges</u>
1	-	-	13.50	-	-	-
2	-	-	13.50	-	0.0253	0.0253
3	-	-	13.50	-	0.0253	0.0253
4	0.17	0.17	13.33	0.0031	0.0250	0.0281
5	0.18	0.35	13.15	0.0063	0.0247	0.0310
6	0.19	0.54	12.96	0.0098	0.0243	0.0341
7	0.19	0.73	12.77	0.0132	0.0239	0.0371
8	0.86	1.59	11.91	0.0288	0.0223	0.0511
9	3.20	4.79	8.71	0.0868	0.0163	0.1031
10	1.92	6.71	6.79	0.1216	0.0127	0.1343
11	1.92	8.63	4.87	0.1564	0.0091	0.1655
12	1.72	10.35	3.15	0.1876	0.0059	0.1935
13	0.93	11.28	2.22	<u>0.2045</u>	<u>0.0042</u>	<u>0.2087</u>
Total 1 to 13				0.8181	0.2190	1.0371
14	0.26	11.54	1.96			
15	0.05	11.59	1.91			
16	0.24	11.83	1.67			
17	0.61	12.44	1.06 ^{5/}			

1/ Implementation starts from effectiveness of Loan Agreement.

2/ Interest and commitment charges not included.

3/ Interest rate at 7 1/4% p.a.

4/ Commitment charges at 3/4 of 1% p.a.

5/ Interest and other charges are assumed to be 1.06 million.

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