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APPRAISAL OF A
SECOND EDUCATION PROJECT
TRINIDAD AND TOBAGO

September 29, 1972

Education Projects Department

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CURRENCY EQUIVALENTS

1 US Dollar = TT\$ 1.84

1 TT Dollar = US\$ 0.54

Since July 3, 1972 the TT\$ is floating with the
British Pound Sterling

MEASURES

1 sq. yard = 0.84 m²

1 sq. foot = 0.09 m²

1 sq. mile = 2.590 km²

1 acre = 0.405 ha.

Fiscal Year

January 1 - December 31

TRINIDAD AND TOBAGO

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This report is based on the findings of an appraisal mission which visited Trinidad and Tobago in January/February 1972. The mission consisted of Messrs. A. de Capitani (economist), J. Scearce (architect), J. Crosnier, (agricultural educator, consultant), R. Hemingway (technical educator, ILO) and D. Ward (general educator, consultant).

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Maps of Trinidad and Tobago (Showing Project Schools).

GLOSSARY

Junior Secondary School: A coeducational lower-cycle secondary school extending over grades 6-8 (Form 1 through 3).

Senior Comprehensive School: A coeducational upper-cycle secondary school extending over grades 9-12 (Form 4 through 6) and combining academic and pre-vocational programs in one facility.

Combined Junior/Senior Secondary School: A coeducational secondary school comprising both lower and upper cycle (up to grade 10).

Farmer Training Center: An institution providing short intensive courses for adult farmers and extension officers.

Double-Shift System: Use of the same educational facility by two groups of students, one group in the morning and the other in the afternoon.

Sandwich Courses (Block Release Programs): A cooperative part-time training under which trainees are released from employment to attend formal instruction for a period (block) of weeks.

Government School: A school owned and operated by the Government.

Assisted School: A school owned and operated by denominational groups but financed by the Government.

Public School: Includes both government and assisted schools.

Private School: A school owned and operated by private organizations or individuals, without any financial support from the Government.

General Certificate of Education, "O" Level: Certificate awarded at the completion of grade 10 (Form 5) after an examination set and graded by the Cambridge Board of Examiners.

General Certificate of Education, "A" Level: Certificate awarded at the completion of grade 12 (Form 6) after an examination set and graded by the Cambridge Board of Examiners.

Assistant Craftsman's Certificate, Craftsman's Certificate, Technician's Certificate: Certificates awarded at the completion of accelerated training courses, vocational training courses and technical courses, respectively, after an examination set and graded by the National Examination Council for Vocational and Technical Education.

National Training Board: An advisory body composed of members drawn from the public and private sectors, and responsible for advising the government on matters related to technical and vocational education and for coordinating craft training carried out in institutions and industrial enterprises.

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BASIC DATA 1970 ^{1/}

- Population	1.03 million
Annual Growth Rate 1960-1970	2.2% p.a.
- Labor Force	0.36 million
Annual Growth Rate 1960-1970	2.0% p.a.
- GDP Growth Rate at Constant Prices 1960-1970	4.0% p.a.
- Primary School Enrollment as a percentage of age group (Ages 7-11) ^{2/}	95.7%
- Secondary School Enrollment as a percentage of age group (Ages 12-18) ^{2/}	26.0%
- Third Level Enrollment as a percentage of age group (Ages 19-23) ^{2/}	1.1%
- Public Expenditure on Education as a percentage of Total Public Expenditure	16.4%
- Public Expenditure on Education as a percentage of GDP	3.6%

^{1/} See Annex 1 for comparative educational data.

^{2/} Including overaged students.

TRINIDAD AND TOBAGO

APPRAISAL OF A SECOND EDUCATION PROJECT

SUMMARY AND CONCLUSIONS

i. In 1967, the government of Trinidad and Tobago approved the guidelines of a 15 year educational development plan, 1968-1983. The plan represents an ambitious attempt to reform the traditional educational structure of the country, improve the relevance and the efficiency of the educational system and provide a better distribution of educational opportunities. The plan is consistent with the country development strategy which aims at building a more egalitarian and self-reliant society. By correcting academic bias built into the education and training system and re-orienting it in line with the evolution of modern science and technology, the reform will help provide the economy with the skills required to achieve the targets of economic diversification, employment generation and better national control of economic decisions.

ii. The main objectives of the reform are: (i) provision of general education for all children up to the age 14; (ii) reform and consolidation of junior secondary schools, by phasing out the obsolete and socially discriminating post-primary schools; (iii) introduction of the concept of comprehensive education at the senior secondary level; (iv) reform and expansion of vocational and agricultural education to accommodate the majority of students who do not proceed to the upper cycles of secondary education, and to cater for adult training and retraining; (v) expansion of higher level technician training; (vi) improvement in the preparation of teachers at all levels, and (vii) reform of the administrative structure and processes at the Ministry of Education. The reform is expected to be implemented in three phases, 1968-72, 1973-77 and 1978-83.

iii. A Bank loan of US\$9.4 million was made in 1968 to support the first phase of the reform, which focusses on general secondary education and teacher training. The project consisted of sixteen junior secondary schools, three senior comprehensive schools, one teacher training college for primary and junior secondary school teachers, and alterations and equipment for the conversion of three general secondary schools into senior comprehensive schools. After some initial difficulties caused by delays in the selection of architectural consultants, adverse weather conditions and labor problems, the execution of this project is progressing smoothly. A second loan of US\$9.3 million is now proposed to help complete the implementation of the first phase and to extend the reform to technical education and informal training of adult farmers. The proposed project would complement - within the framework of the educational development strategy of the country - a US\$6.0 million loan by the Inter American Development Bank in the field of vocational and agricultural education.

iv. The proposed Bank project would include:

- (a) 6 junior secondary schools (grades 6-8)
3 senior comprehensive schools (grades 9-12)
4 combined junior/senior secondary schools (grades 6-10)
1 teacher training college (grades 11-12)
1 technical institute (grades 11-13)
1 farmer training center

(b) three farmer training mobile units; and

(c) related technical assistance.

v. The project secondary schools would offer new improved curricula including practical subjects at the junior level and pre-vocational training at the senior level, the objective being to make the educational system more responsive to the needs of students who are unable to continue formal education and of employers who need adaptable workers with practical background for further on-the-job training. The reform of secondary school curricula would be integrated by new teacher training programs in the proposed Teacher Training College, which would be equipped to offer courses such as industrial arts, agriculture, general science and home economics - courses which cannot be provided by the institutions that would be replaced. The Technical Institute in San Fernando would be relocated, reorganized and expanded to produce the technicians required for the development of the Trinidadian economy. The reinforcement of the Extension Service through the proposed Farmer Training Center and the Mobile Units would help upgrade the level of skills of adult farmers, promote the introduction of better technologies in small farms and support the strategy of agricultural diversification and development.

vi. The proposed program of technical assistance (18 man years of expert services and 11 man years of fellowships) would (a) support the ongoing re-organization and coordination of vocational and technical education, (b) ensure that the proposed San Fernando Technical Institute is well established and organized, and the quality of instruction upgraded, and (c) help in training staff of the Farmer Training Center.

vii. The proposed project would cost US\$18.1 million equivalent, including contingencies; in addition, US\$1.6 million would be for interest during construction. Cost estimates are based on detailed schedules of accommodation and contracts for similar work. Contracts would be awarded on the basis of international competitive bidding. The foreign exchange component is estimated at US\$7.8 million (including US\$0.1 million to be financed by CIDA).

viii. The project is suitable as a basis for a Bank loan of \$9.3 million equivalent, for a term of 22 years, including a grace period of 7 years. The loan would cover approximately 47% of total project cost, equal to the estimated foreign exchange component (net of CIDA participation) and interest during construction.

I. INTRODUCTION

1.01 In March 1967, the Government of Trinidad and Tobago approved the guidelines of a long term educational development plan to restructure the education system, lessen its academic bias and dependence upon foreign standards, and improve the distribution of educational opportunities. A Bank loan (564-TR, October 1968) is helping to finance the first phase of the reform, which focusses on general secondary education and teacher training. The project consists of 16 junior secondary schools, 6 senior comprehensive schools and 1 teacher training college for primary and junior secondary school teachers. After some initial difficulties caused by delays in the selection of architectural consultants, adverse weather conditions and labor problems, project implementation is now progressing smoothly: construction is expected to be completed by December 31, 1973, the Closing Date, and projected cost overrun is estimated at about 2% of total project cost.

1.02 Following an IBRD reconnaissance mission in August 1971, a Unesco project preparation mission assisted the government in November/December 1971 in preparing a second education project for submission to the Bank. An IBRD mission, consisting of Messrs. A. de Capitani (economist), J. Searce (architect), J. Crosnier (agricultural educator, consultant), R. Hemingway (technical educator, ILO) and D. Ward (general educator, consultant), appraised the proposed project in January/February 1972.

1.03 The project was modified during the appraisal. The sizes of a Combined Junior/Senior Secondary School and of the Teacher Training College were reduced in accordance with revised projections of enrollments and teacher requirements. The proposed San Fernando Technical Institute was changed into an institution for the training of technicians only, and its capacity was increased to meet projected manpower requirements. Technical assistance was added to support the establishment of the National Training Board and to help organize the new Technical Institute in San Fernando.

II. ECONOMIC DEVELOPMENT AND HUMAN RESOURCES

Physical Environment and Population

2.01 Historically, favorable environmental conditions have supported economic development and human settlements in Trinidad and Tobago. Situated in the southern part of the Caribbean Sea close to the Venezuela Coast, the two islands - which extend over 1,980 square miles - are endowed with suitable ecological and climatic conditions for tropical agriculture. Petroleum has provided the country in recent years with a substantial inflow of foreign exchange, which has stimulated and sustained industrialization.

2.02 Between 1861 and 1971, the total population of Trinidad and Tobago increased by more than 10 times, from 99,800 to 1,030,000. Massive importation of slaves from Africa and of indentured labor from Asia during the 18th

and 19th century, as well as immigration from Europe and from Caribbean islands, account for the multi-racial, multi-religious structure of the Trinidadian society. Net immigration, which explains most of the earlier population increase, declined steadily during the last three decades and turned into net emigration of more than 10,000 persons a year since the mid 1960's. Due to the steady decline in death rates and a rapid increase in birth rates during the 1950's, the rate of natural growth of population accelerated dramatically to reach a peak of about 3% p.a. in the mid 1960's. Since then, birth rates have consistently been decreasing, partly due to urbanization and to successful family planning programs. As a result of these trends, the overall rate of growth of population declined from more than 3% p.a. in the earlier 1960's to less than 1% p.a. in recent years. If the decline in birth rates continues, population in the mid 1980's should be about 1.2 - 1.3 million (Annex 2).

2.03 Because of the period of high birth rates, the population of Trinidad and Tobago is characterized by a very young age structure: in 1970 over 41% of total population was under age 15. The percentage of population aged 65 and over is rather low (just under 4% in 1970), but is increasing with the steady improvement in life expectancy. As a result, the ratio of those in the dependent age group (0-14, 65 and over) to those in the active age group (15-64) is quite unfavorable (45%), which represents a serious constraint on economic development.

2.04 The urban population is concentrated in Port of Spain (68,000 inhabitants in 1970) and San Fernando (37,000), which are surrounded by two urban regions with a total population of some 400,000 persons. The rural population is widely scattered over a number of small village settlement areas, each with a population which seldom exceeds 1,000 persons.

2.05 The high dependency rate and the dispersion of rural population make it difficult to provide adequate educational facilities for the entire population. As a result, the average educational attainment of the labor force (Annex 3) is still rather low: in 1969, only 7.1% of workers had completed secondary education and less than 1% had completed third level education.

Economic Growth During the 1960's

2.06 Throughout the 1960's, the Trinidadian economy was characterized by heavy dependence on the oil sector, rapid growth of the manufacturing sector, stagnation of agriculture and high unemployment rates coupled with acute shortages of skilled manpower. GDP increased at the average rate of about 4% p.a. in real terms, and per capita output (at factor cost) grew at about 2% p.a. to reach US\$880 in 1971.

2.07 The petroleum sector is still the back-bone of the economy, contributing about one fifth of GDP, two thirds of net exports and close to one third of Central Government revenues. The steady decline in output in recent years due to depletion of some wells was only partially compensated by price increases, and accounted for the deceleration in GDP growth that has occurred

since 1968. Recent discoveries of important oil and gas deposits off the east coast of Trinidad and the recent favorable evolution of export prices will probably reverse this trend by the mid 1970's.

2.08 The manufacturing sector has been growing at 7.8% p.a. since 1960 and accounts now for about 18% of GDP and 10% of total net exports. The bulk of manufacturing output - except for sugar processing - has been for the domestic market, although a beginning has been made in producing for the larger CARIFTA area (Caribbean Free Trade Association). Severe shortages of local entrepreneurial, managerial and technical skills are the major immediate problems.

2.09 The stagnation of agriculture during the 1960's was partly due to an unfortunate combination of bad weather, plant diseases and low prices in the international markets. An attempt is now being made to encourage production for the home market. Shortages of rural wage labor and the low level of agricultural technology in small farms are the limiting factors. Agriculture produces only 7% of GDP, while employing more than one fifth of the labor force.

2.10 After some initial reluctance, the government has moved toward promotion of tourism, with the result that between 1966 and 1969 gross tourist receipts increased sharply, from about TT\$ 23 million to about TT\$ 40 million. In spite of some recent set-backs, the tourism potential for employment generation and diversification of the economy appears favorable.

Problems of Employment Generation

2.11 Inflated by the rapid demographic growth of the late 1940's and early 1950's and by increasing participation rates of women, the Trinidadian labor force grew at about 2.5% p.a. between 1960 and 1971. Employment increased fairly fast in the early 1960's and then virtually stagnated, in spite of the rapid growth of the manufacturing sector. As a result, the rate of unemployment remained fairly constant at the high level of 13-14%. Unless current trends are reversed, the unemployment rate may climb further by the late 1970's, when those born in the late 1950's and early 1960's (para 2.02) will enter the labor market. Because of its highly capital intensive nature, the projected expansion of the petroleum sector will have little direct impact on employment.

2.12 Together with the demographic trends mentioned above, several inter-related socio-economic factors contribute to the structural unemployment in Trinidad and Tobago. A major factor has been the sluggish growth of the economy coupled with the rapid productivity increases in sectors such as manufacturing which are potentially good employment generators. Secondly, technologies currently in use are designed for countries where technical skills and capital are plentiful and labor is scarce (which is exactly the reverse of the situation in Trinidad and Tobago). A third factor - which is a reflection of the second - is the wrong blend of skills and expectations created by an old-

fashioned and academically-biased educational system. A fourth is the distortion in the structure of relative prices and wages, brought about by rigidities in the supply of scarce factors and by the "demonstration effect" exerted by high wages in the petroleum sector and other modern "enclaves" of the economy.

2.13 The result of these forces is a paradoxical combination of unemployment and labor shortages, slow growth of GDP and wage push inflation. Unskilled labor being costly in relation to its marginal productivity, it is carefully screened; the youngest and the less qualified are left out. In 1969, 30% of the labor force in the age group 15 - 19, and 22% of the age group 15 - 24 were unemployed. In the same year, the unemployment rate among workers who had not completed secondary schools was 20%, while it was only 5% among workers with completed secondary education and zero percent among university graduates (Annex 3).

Economic Development Strategy

2.14 The main objectives of the economic development strategy in Trinidad and Tobago are:

- (1) Diversification of the economy through expansion of agriculture, manufacturing and tourism, to start an internally-generated and self-sustained process of growth.
- (2) Reduction of structural unemployment through employment generating programs, training and retraining schemes and better adaptation of foreign technology to local conditions.
- (3) Gradual transfer of economic decision making from foreign-based to locally-controlled institutions.

2.15 Achievement of these objectives - and in particular of the goal of full employment - is not expected until the late 1980's, given the magnitude of public and private investments required. An essential feature of the development strategy will be the reform of the educational system to lessen its academic bias and heavy dependence upon foreign models, as well as the expansion and improvement of technical, vocational and agricultural training to provide the skills required for diversification of industry, agricultural development and increased national control of economic activities.

2.16 Over the period 1971-1983, GDP is expected to grow at about 5.0% p.a., as a result of an increase of 7.0% p.a. in industry, 4.5% p.a. in services, 4.0% p.a. in the oil sector and about 3.3% p.a. in agriculture. By 1983, industry is expected to produce about 27% of GDP and employ about 22% of the labor force. By that date, per capita output in real terms is projected to reach about US\$1,500.

Manpower Requirements

2.17 Projections of manpower requirements and training needs in Trinidad and Tobago are made difficult by the lack of data and by the uneven quality of

available information. ^{1/} Moreover, structural changes in production processes and the small size of the economy add to the instability of occupational coefficients. Finally, the future amount and skill composition of outward migration is uncertain. With these limitations, manpower projections can indicate only broad orders of magnitude, and should be interpreted with caution.

2.18 Net manpower requirements during 1972-1983 in Trinidad and Tobago were estimated at 185,000, comprising 4,000 professionals, 12,000 technicians, 31,000 craftsmen and 138,000 semi-skilled and unskilled workers (Annexes 4 and 5). These four occupational categories correspond roughly to workers having, respectively, university education, technical education, craft training or some form of accelerated vocational training. The projected annual training needs during the period 1972-1983 are given below together with the present capacity of the educational system.

	Projected Average Annual Training Needs 1972 - 1983	1971 Estimated Output from the Educational System
1. Professionals	300	300 <u>/1</u>
2. Technicians	1,000	80
3. Craftsmen	2,600	250 <u>/2</u>
4. Semi-skilled	11,500	4,000 <u>/3</u>

/1 Including students trained abroad.

/2 Data on private vocational schools are not available, but output is considered negligible.

/3 Including informal training in industry.

2.19 The above comparison indicates the need for a substantial expansion in the supply of both technicians and craftsmen. The supply of university graduates (including those trained abroad) is roughly in balance with expected growth in demand. The results obtained for semi-skilled and unskilled workers are more difficult to interpret, given the very broad range of activities and skills covered and the possibility of substitution of capital for labor and vice-versa.

2.20 Nevertheless it is clear that the existing educational system in Trinidad and Tobago cannot be expected to cope with the requirements of economic development and industrial diversification in the 1970's. A major re-orientation is required with greater emphasis on vocational and technical training. In turn, this implies the need for a more relevant - i.e. more scientifically and practically oriented - general education. In addition,

1/ 1970 Census returns are still being processed and were not available to the appraisal mission.

continuous upgrading of the level of farmers education will be needed to improve agricultural technology and farming efficiency. The traditional reliance on on-the-job training of workers with inadequate professional background will be insufficient in the 1970's, given the more exacting requirements of technological progress and the economic development strategy of the country (which is realistically based on the development of small scale enterprises, unable to afford expensive training schemes).

III. THE EDUCATIONAL SECTOR AND ITS REFORM

The Traditional Education and Training System (Appendix I and Charts WB-6801 and 6802)

3.01 The structure of the education and training system in Trinidad and Tobago is largely patterned after the traditional British model (Chart WB-6802). The education system consists of: (i) a five-year primary course normally beginning at the age of seven, (ii) a two-year course in post-primary schools or a five-year course in intermediate schools for those unable to gain admission to secondary schools; (iii) a secondary course comprising a five-year cycle leading to the Cambridge General Certificate of Education (CGE), "O" level, followed by a two-year cycle leading to the G.C.E., "A" level, (iv) third level courses of three to seven years duration at the University of the West Indies. Education is free and compulsory between the ages of 6 - 12.

3.02 Primary education is quantitatively well developed. Total enrollment in 1969/70 was about 140,000 or 96% of the age group, evenly distributed between boys and girls in both rural and urban areas (Annex 6). About 62,000 were enrolled in kindergarten classes for the age group 5-6 and 33,000 in post-primary courses. About 96% were enrolled in public schools. Up to grade 5, promotion is largely automatic, and very few students drop out; accelerated promotion is common. Of about 5,500 teachers in public schools in 1970, only 55% were qualified. Untrained teachers are being assigned for a two-year full-time course in teacher training colleges, about 250 completing training each year.

3.03 The Common Entrance Examination (CEE) at grade 5 determines which students are admitted to public secondary schools. The percentage of admission, which is a function of the number of student places available in the first year of secondary schools, was about 16% in 1969/70. Most students who are not admitted to secondary school enroll in a two year post-primary course and follow a curriculum which is basically a repetition of what was taught in earlier grades. A small number of students enroll in intermediate schools. Both post-primary and intermediate schools are generally ill-equipped, overcrowded and understaffed.

3.04 General secondary education is still relatively under-developed. Total enrollment in public schools was about 32,000 or 18% of the age group 12-18 in 1969/70. Because of the limited capacity of the public system in

relation to the rapid growth of demand, private secondary schools operated for financial profit have increased in number in recent years: in 1969/70 about 14,000 students were enrolled in 79 small and generally inadequate schools. Curriculum in Forms 1 through 5 consists of a group of ten required courses and one or two electives, mainly in arts subjects; all courses are of academic type. Form 6 is a two-year program in preparation for university education; admission is highly selective. In 1970, of the 1,300 teachers in public secondary schools only 53% were university graduates and two-thirds of them did not have any pedagogical training. A crash program for retraining 150 secondary teachers a year is being financed by the Organization of American States.

3.05 Vocational and technical education is provided in two Technical Institutes, one in Port of Spain and the other in San Fernando. Craft courses are also offered in a Vocational training center at Point Fortin. Courses are of 2-3 years duration for both craftsmen and technicians. Total enrollment in 1969/70 was about 2,500 in craft courses (including apprentices) and 900 in technician courses. Educational efficiency is extremely low, due to the lack of qualified teaching staff, poor quality of intake and heavy reliance on part-time courses: in recent years, the output of technicians and certified craftsmen has averaged 50 and 200-220, respectively.

3.06 Two-year full time courses for agricultural technicians are offered at the Eastern Caribbean Farm Institute of Agriculture and Forestry (ECIAF). The Institute can accommodate a maximum of 128 students, 100 in agriculture and 28 in forestry. Output averaged about 45 in recent years. Below the technician level, no organized scheme exists for training adult farmers.

3.07 Higher education is carried on by the University of the West Indies, a regional institution serving several countries of the Caribbean area. At the St. Augustine campus in Trinidad, three-year degree courses are offered in agriculture, arts, social sciences, engineering and natural sciences. In 1970/71 total enrollment in the University of the West Indies was about 5,500, roughly one fourth of students being from Trinidad and Tobago.

3.08 In an attempt to make provision for the problem of the unemployed, several programs in the field of informal vocational education have been set up since 1966 (Youth Camps, Trade Centers, Youth Centers). Most of them have met so far with limited success, partly due to lack of equipment and teaching staff. In order to coordinate vocational and technical education carried out in government institutions and private industry, a National Training Board has been established. The National Training Board will investigate manpower requirements of the economy, elaborate standard training programs, supervise private training schemes, and, in general, advise the government in planning and programming vocational and technical education policies.

Plans for Reform (Appendix I and Chart WB-6803)

3.09 The need for a radical reform of the educational and training system was first emphasized by a UNESCO Educational Planning mission,

which visited the country in 1964. A Draft Plan for Educational Development 1968-1983 was subsequently prepared and approved by the government in 1967. The plan represents an ambitious attempt to change the traditional educational structure of the country, improve the relevance and efficiency of the education system and provide a better distribution of educational opportunities.

3.10 The main objectives of the educational reform, as outlined in the Plan and in other policy statements, are the following:

- (1) provision of general education for all children up to age 14 in two cycles - namely, 5 years of primary education followed by 3 years of junior secondary education;
- (2) reform and consolidation of junior secondary education by phasing out the obsolete post-primary and intermediate schools, and developing new common programs including practical subjects;
- (3) introduction of the concept of comprehensive education at the senior secondary level, as well as expansion of student places to cater for 25% of the relevant age group;
- (4) reform and expansion of vocational education and agricultural training to accommodate about 50% of the age group 14 plus, i.e. the majority of graduates of junior secondary schools who do not proceed to the upper cycles, and to cater for adult training and retraining; the objective being to train a better qualified and more adaptable labor force;
- (5) expansion of higher level technicians training, as required by the policy of economic diversification and industrial growth;
- (6) improvement in the preparation of teachers at all levels, including technical and senior secondary teachers; and
- (7) reform of the administrative structure and processes at the Ministry of Education (Chart WB-6804), reinforcement of curriculum development and supervisory services, establishment of an educational testing unit and reinforcement of the Publications Branch to improve the supply of standardized basic textbooks and other learning materials. 1/

1/ While progress has been made in the field of educational broadcasting, extensive use of instructional television is considered unfeasible at this time, mainly because of its cost.

3.11 The reform, which is expected to be fully implemented by 1983, will provide a better integrated system of general education and will correct the traditional bias against vocational and technical education. New curricula are being developed for general secondary education, with emphasis on local environment, culture and socio-economic conditions of the country. Together with the introduction of comprehensive programs at the senior level, this will make the system more responsive to the needs of students unable to proceed to higher level of academic education and of employers who need adaptable workers with ability to learn on the job. It is expected that the postponement of early vocational choices, the provision of better general education for all children and the new emphasis on technical and practical subjects will help improve social mobility, modify unrealistic social attitudes and expectations, and increase the educational efficiency of vocational and technical training.

Strategy for Implementation (Chart WB-6805)

3.12 The reform is expected to be implemented in three phases, 1968-72, 1973-77 and 1978-82. The first phase, now under implementation, is concentrating upon Junior Secondary Schools, Senior Comprehensive Schools and Teacher Training. The second phase will extend the reform to Primary Schools, Vocational and Agricultural Training and Technical Education. The third phase will complete the reform of Primary and Technical Education.

3.13 The first Bank project is assisting in the implementation of the first phase of the reform. Sixteen new Junior Secondary Schools will provide about 50% of projected total expansion at that level during the period 1970-83 (Annex 7). Six Senior Secondary Schools will add about 30% of the new student places required during the same period. The new Teacher Training College in San Fernando will provide 440 student places, which represents 100% of the estimated increase in capacity required by the expansion of the educational system (Annex 8).

3.14 The proposed second project is designed to help complete the implementation of the first phase and to extend the reform to agricultural and technical education. In the field of general secondary education the project would help maintain the momentum gained by the reform during the first phase and would meet requirements for educational facilities in industrial and rural areas of high population growth not served under the first project. The project would also support - directly through the proposed Technical Institute and the agricultural education items, and indirectly through the project secondary schools - the modernization and expansion of technical education and farmer training, thus furthering the objectives of the second and third phase of the reform.

Financial Implications (Annexes 9, 10 and 11)

3.15 Public expenditures on education have grown at the relatively high average rate of about 10.5% p.a. (7.5% in real terms) between 1960 and 1970 - faster than GDP (4.0% p.a.) and total public expenditure (5.8% p.a.). In

1970 recurrent expenditure on education absorbed about 17% of current revenues, which is reasonable given the amount and composition of total enrollments (Annex 7). Capital expenditures on education averaged about 11% of total capital expenditures in recent years, reflecting the shifting of public investment priorities brought about by the plans for educational reform. Total public expenditure on education amounted to 3.6% of GDP in 1970, which is relatively low compared with the effort made by other countries at the same stage of economic development.

3.16 The distribution of recurrent expenditures by levels of education (Annex 10) reflects the structural imbalances of the educational system that the reform tries to correct. In 1970, more than 52% of recurrent expenditure on education was spent on primary education, about 21% on secondary general education and only 3.3% and 0.4% on vocational and technical, and adult education, respectively. Recurrent expenditure on university education (excluding fellowships) absorbed about 12% of total recurrent expenditure in 1970, which is reasonable.

3.17 Capital requirements to implement the educational reform were probably underestimated when preparing the Draft Educational Plan 1968-1983. Unexpected increases in construction costs and the recent decision to expand further the vocational education system to cater for 50% of the age group 14 plus are likely to increase substantially the financial requirements of phase II and III of the reform. The Bank staff projection for the period 1971-1983 (Annex 11) indicates a need for more than US\$100 million for capital expenditure, to be distributed about evenly between the two phases. External assistance (para. 3.19) is expected to cover about one-third of the capital costs of phase II. The projected growth in public revenues (Annex 2) should be sufficient to finance the balance and to meet the expected increase in recurrent educational expenditure from TT\$ 67 million in 1971 to TT\$ 161 million in 1983.

3.18 By 1983, public expenditure on education is expected to reach about TT\$ 180 million or 5.5% of GDP, which should be feasible. Recurrent expenditures are projected to increase to about 25% of current revenues, a reasonable ratio. The projected distribution of recurrent expenditure by levels of education (Annex 11) reflects the emphasis on reform and consolidation of general education and on expansion of vocational and technical training: by 1983 primary education is expected to absorb about one-third of recurrent expenditure while general secondary education and technical training will absorb about 34% and 14%, respectively; the percentage of funds allocated to university education is expected to remain approximately constant at the 1970 level.

External Aid

3.19 External assistance to the education sector has been provided by several bilateral and multilateral agencies, mainly in form of technical assistance. Five teacher trainers and specialists in curriculum development were provided during 1969-1971 by the Canadian International Development Agency (CIDA). The Organization of American States (OAS) is providing grants

(\$40,000 in 1971) to finance a crash program for retraining 150 secondary teachers a year. UNDP has provided 5 specialists in primary teacher training methods and primary school curriculum for the Institute of Education at the University of the West Indies. Fellowships abroad - mainly for university students - are offered by the governments of Canada, USA and UK. In 1971, a preliminary agreement was reached with the Inter American Development Bank (IDB) for two loans totalling \$9.0 million, which will support the establishment of a Student Loan Fund and finance the construction of 6 vocational training centers, 1 technical teacher training unit, 3 farm schools and extension to an existing vocational center. On the whole, external aid is expected to finance about one-third of the capital cost of phase II of the educational reform. (para. 3.17).

IV. THE PROJECT

General

4.01 The proposed project would assist the government in achieving the objectives of the education reform by (i) expanding the coverage of the reform in general secondary education to urban and rural areas insufficiently provided with educational facilities, and ensuring an adequate foundation of pre-vocational education for vocational and technical training; (ii) extending the reform to technical education and informal training of adult farmers to meet manpower requirements and the need to improve farming productivity and standards of living in rural areas. The project would promote and expand the pattern of secondary education being financed under the Bank's first education project, and would complement and reinforce the reform of vocational and agricultural education, which is being supported by the Inter American Development Bank (para 3.19).

4.02 The proposed project would include: (a) construction and equipment of the new institutions listed below; (b) three Farmer Training Mobile Units; (c) 29 man-years of expert services and fellowships.

<u>Type of Institution</u>	<u>Grades</u>	<u>No.</u>	<u>Student Places</u>	<u>Annual Enrollment</u>	<u>Annual Output</u>	<u>Teachers' Requirements</u>
Junior Secondary Schools	6 - 8	6	5,280	10,560 <u>/1</u>	3,520	340
Combined Junior/Senior Secondary Schools	6 -10	4	2,740	2,740	1,010 <u>/2</u>	102
Senior Comprehensive Schools	9 -12	3	3,600	3,600	1,800 <u>/3</u>	171
Teacher Training College	11 -12	1	440	440	200	22
Technical Institute	11 -13	1	840	1,690 <u>/4</u>	490	55
Farmer Training Center		1	30	960	960	3

/1 Double Shift.

/2 720 from junior cycle and 290 from the senior cycle (Form V).

/3 1,470 from Form 5 and 330 from Form 6.

/4 Including part-time courses.

Junior Secondary Schools

4.03 The project would provide facilities and equipment for six new junior secondary schools located in areas of high population growth (see Map 10006R). The schools would be of two different sizes - 960 and 720 student places - and would operate on two shifts of 6 periods per day each. The project schools would provide about 21% of the projected increase of student capacity between 1970 and 1983 (Annexes 7 and 12).

4.04 Until sufficient junior secondary schools are constructed to accommodate the entire output from the primary school system, as envisaged in the Educational Plan, admission to the junior secondary schools would continue to be determined by the applicant's performance in the National Common Entrance Examination. The proposed project - together with the first one - will help provide accommodation for 95% of primary school leavers by 1977. By then, an examination procedure may be retained only for educational guidance, research and standardization. The obsolete post-primary courses would be progressively phased out between 1972 and 1977, thereby relieving the pressure on overcrowded primary school facilities.

4.05 New improved curricula including practical subjects have been developed for the junior secondary level, and will be introduced in all new schools (including those being built under the first project) as they receive enrollments. All students will spend 17 periods per week in English, Spanish, social studies, science and mathematics; agriculture will be studied two

periods each week; arts and crafts, industrial arts and home economics will receive a total of five periods per week. Recently appointed supervisors in social studies, science, mathematics and English are preparing materials for teachers and will conduct intensive teacher training courses on the new curricula in selected schools.

4.06 The increase in total enrollment following the progressive reduction in selectivity of the Common Entrance Examination, the reform of curricula and the introduction of the double shift system are likely to pose major problems of adaptation in terms of teaching effectiveness and school administration. The government has therefore provided assurances that a special section staffed with personnel working full time on matters of teacher selection and training will be established in the Ministry of Education before the end of 1973 and that the expansion of the Division of Supervision, undertaken under the first Bank project, will continue as required to permit a supervision visit in each public secondary school at least once a year.

Senior Comprehensive Schools

4.07 The proposed senior comprehensive schools would provide about 26% of the additional student places required by 1983, and would be located in areas of actual or potential industrial growth, not served by institutions to be built under the first project. (Maps 2246R2 and 10006R).

4.08 Admission to senior comprehensive schools is planned to be controlled by an examination (referred to as "the 14 plus") to be administered at the end of the junior cycle. The new examination should be developed before 1975, when increased output from the junior secondary schools will make selection necessary. The government has provided assurances that the preparation of the 14 plus exam will be completed by the end of 1974.

4.09 The proposed schools would offer in Form 4 and 5 a broad curriculum incorporating pre-vocational training with academic options, the objective being to provide students with an adequate practical and theoretical background for further training in industry or in higher technical education. About 35% of the time would be allocated to practical options, including technology, agriculture, commerce and home economics. On the completion of the two-year course students would sit for the General Certificate of Education, "O" level. Form 6 would continue to be highly selective, the emphasis being on preparation for university studies; a common core of 2 subjects would be taken by all students, with additional 3 subjects as electives either in arts or in sciences.

Combined Junior/Senior Secondary Schools

4.10 The proposed four Combined Junior/Senior Secondary Schools are designed for rural areas where the density of population would not justify separate junior and senior schools. The schools would be of two sizes - 608

and 912 student places. Each school will consist of a junior section at Forms 1 to 3 and a senior section at Forms 4 to 5. There would be no Form 6. The schools would offer the same broad range of academic and practical subjects as the new junior and senior schools.

Teacher Training College

4.11 The new Teacher Training College would replace four small, under-equipped and under-staffed public teacher training colleges. The college would produce about 110 junior secondary and 90 primary teachers annually. Selection of trainees would be made on a nation-wide basis but neither boarding facilities nor staff housing would be required because of available accommodation in Port of Spain.

4.12 Courses would be of two year duration for both primary and junior secondary teachers, the first year being common to all students. Training for all types of junior secondary teachers would be offered including home economics, industrial arts, general science and agriculture. Because of inadequate facilities, these practical courses cannot be provided by the institutions which would be replaced. The proposed timetable requires fifty percent of the program to be spent in professional studies including practice teaching, forty percent in general education and teaching fields, and the balance in electives. New syllabi, prepared for the Bank financed Teacher Training College in San Fernando with the help of specialists provided under the Canadian External Aid Program, would be utilized in the proposed institution.

4.13 The outputs of the proposed College plus those of San Fernando and Mausica Teacher Training Colleges would be about 550 after 1978, which would meet projected needs for both pre-service and in-service training of primary and junior secondary teachers through 1985. When the teaching force is fully qualified by the mid 1980's and the growth of primary and junior secondary enrollment levels off due to demographic trends (para 2.02), pre-service courses for junior secondary teachers could be lengthened from two to three years so as to improve further the quality of training.

Technical Institute

4.14 The proposed project includes the relocation and expansion of the San Fernando Technical Institute and its development as an institution for the training of higher technicians only. Enrollment of technicians would be increased from the present 305 following part-time courses to a total of approximately 1,700, divided about equally between full-time and part-time students (Annex 13). Overall output would be about 490, which should fill the gap between capacity output from the John Donaldson Technical Institute (about 500 per year) and projected manpower requirements (para 2.18 and Annex 5). Existing facilities, which were originally built for a secondary technical school, and part of the equipment would be utilized for a senior comprehensive school.

4.15 Candidates for admission to the courses would mostly be selected from senior comprehensive school graduates with General Certificate of Education (GCE), "O" level. The government has provided an assurance that entrance requirements ^{1/} for the proposed Institute would be the possession of G.C.E. "O" level or an equivalent qualification, with passes in English, Mathematics and one other subject - Physics in the case of technology courses. Improved quality of intake would help reduce the failure rate.

4.16 Courses of either two or three year duration would be offered in mechanical engineering, electrical engineering, electronics, drafting, building construction, clothing and textiles, foods and nutrition, laboratory technology, business management and secretarial work. The curriculum would be based on 35 teaching hours per week for full-time courses and 12 hours per week for part-time courses. For the technology courses, the third year would be organized so as to give students a six months period of industrial training before graduation (sandwich courses). Course content would be revised following an analysis of technician occupations to be carried out by the National Training Board (para 3.08). The results of this study would be incorporated into new curricula to be developed by the Course Advisory Committee in cooperation with the National Examinations Council. The government has provided an assurance that the new curricula would be developed and presented to the Bank for comments within two years of the Loan Agreement signing and that a comprehensive curriculum review would take place thereafter every three years in accordance with sound technical educational practices.

4.17 As qualified technical teachers are in short supply and difficulties have been experienced in the past in filling existing vacancies, the government has provided assurances that it will take such action as may be required to recruit and retain an adequate number of qualified technical teachers and that appropriate adjustments in terms and conditions of service will be introduced to compensate for the comparative lack of promotional opportunities in the technical teaching profession. In order to improve overall planning and programming of technical education and ensure appropriate coordination with the National Training Board, the government has also provided an assurance that the existing position of Director of Technical Education in the Ministry of Education will be filled as soon as possible, but not later than 1973.

Farmer Training Center and Mobile Units

4.18 The project would include:

- (i) a residential 30 place Farmer Training Center adjacent to the Eastern Caribbean Institute of Agriculture and Forestry (E.C.I.A.F.), which would train about 900 farmers a year in 30 courses of one week duration and 60 extension officers in 6 courses of two week duration, and,

^{1/} Current entry requirements are: (i) G.C.E., "O" level in English and one other subject, or (ii) passing of an entrance examination, or (iii) possession of a National Craftsman's Certificate.

- (ii) three Farmer Training Mobile Units with portable equipment and audio-visual aids, which would carry out demonstrations on selected farms in cooperation with rural associations such as "4H" clubs, nutrition units and cooperatives.

4.19 These two items are complementary, the common objective being to upgrade the level of skills of adult farmers, promote the introduction of better technologies in small farms and support the government policy of agricultural diversification and rural development. Both residential courses and demonstrations through mobile units would be production-oriented, the emphasis being on topics such as land preparation, plant protection and preparation, vegetable growing and marketing, animal husbandry, poultry and farm management. Practical work would represent 70% of the time-schedule. Short courses are also envisaged for farmers' wives in gardening, poultry production, and selection, marketing and simple processing of farm products.

4.20 The Farmer Training Center would be under the responsibility of the Director of E.C.I.A.F., with a Coordinator in charge of the selection of trainees and part-time teachers, programming of activities and liaison with the Ministry of Agriculture. The teaching staff would consist of two full-time teachers recruited from the Extension Service. The government has provided assurances that trainees and teachers from the Farmer Training Center would be allowed to make adequate use of the E.C.I.A.F. farm and equipment. Three six-month fellowships abroad to train the Coordinator of the Center and the two teachers in new extension methods and techniques, use of small farming machinery and audio-visual aids are included within the project, but are expected to be financed by bilateral sources (para 4.22 and Appendix 2).

4.21 Each Farmer Training Mobile Unit would consist of an agricultural workshop van with portable equipment for practical demonstrations and a micro-bus equipped with audio-visual aids and a power generating set. Each unit would require a driver-operator, an instructor and an extension technician, all provided by the Extension Division in the Ministry of Agriculture. One unit would serve Tobago, one the four counties of Southern Trinidad and the third one the northern areas. On the basis of this program and taking into account the response of farmers to similar experiments in the past, it is estimated that the total number of farmers attending demonstrations would be about 18,000 a year. The development of an acceptable extension program for the Mobile Units and satisfactory arrangements for their staffing and maintenance would be a condition of disbursement for this project item.

Technical Assistance

4.22 A program of technical assistance (18 man-years of expert services and 11 man-years of fellowship) is proposed to:

- (i) support the operation of the National Training Board through the provision of experts not readily available in the country in training management, manpower planning and job analysis;
- (ii) ensure that the proposed San Fernando Technical Institute is well established and organized, and the quality of instruction upgraded; and
- (iii) help in training staff of the Farmer Training Center.

The phasing of the proposed program is summarized in Appendix 2. During loan negotiations, a CIDA representative informed the government and the Bank that CIDA would be willing to finance 5 man years of specialist services and 3-1/2 man years of fellowships (Appendix 2). The cost of the proposed program to be financed by the Bank was therefore reduced accordingly.

Cost of the Project

4.23 The estimated construction costs for the proposed project have been derived from recent school building costs in Trinidad and from experience with the first project. Costs of construction reflect the requirements of the new curricula and the introduction and use of modern education technology. Space requirements are based on detailed schedules of accommodation for each institution. Use factors for project schools would be economical (Annex 12).

4.24 The estimated costs and foreign exchange component of the items in the proposed project are summarized below. 1/

1/ Estimated costs by type of expenditure are presented in Annex 14.

Construction, Furniture and Equipment	TT\$ (Millions)			US\$ (Millions)			% of Base Line Costs
	Local	Foreign	Total	Local	Foreign	Total	
1. Junior Secondary Schools	5.11	3.46	8.57	2.76	1.87	4.63	31%
2. Combined Junior/Senior Secondary Schools	2.68	1.90	4.58	1.45	1.03	2.48	17%
3. Senior Comprehensive Schools	3.81	2.76	6.57	2.06	1.49	3.55	24%
4. Teacher Training College	0.47	0.43	0.90	0.26	0.23	0.49	3%
5. Technical Institute	1.61	1.63	3.24	0.87	0.88	1.75	12%
6. Farmer Training Center	0.13	0.11	0.24	0.07	0.06	0.13	1%
7. Farmer Training Mobile Units	<u>0.03</u>	<u>0.11</u>	<u>0.14</u>	<u>0.01</u>	<u>0.06</u>	<u>0.07</u>	<u>-</u>
Sub-Total	13.84	10.40	24.24	7.48	5.62	13.10	88%
<u>Services</u>							
1. Professional Services	1.16	0.77	1.93	0.62	0.42	1.04	7%
2. Technical Assistance	<u>0.25</u>	<u>1.05</u>	<u>1.30</u>	<u>0.13</u>	<u>0.57</u>	<u>0.70</u> /1	<u>5%</u>
Base Line Costs	<u>15.25</u>	<u>12.22</u>	<u>27.47</u>	<u>8.23</u>	<u>6.61</u>	<u>14.84</u>	<u>100%</u>
<u>Contingencies</u>							
1. Physical	2.04	1.35	3.39	1.10	0.73	1.83	12%
2. Price Increase	<u>1.84</u>	<u>0.93</u>	<u>2.77</u>	<u>1.00</u>	<u>0.50</u>	<u>1.50</u>	<u>10%</u>
TOTAL PROJECT COSTS	19.13	14.50	33.63	10.33	7.84	18.17	
Interest During Con- struction	<u>-</u>	<u>2.88</u>	<u>2.88</u>	<u>-</u>	<u>1.56</u>	<u>1.56</u>	
TOTAL	19.13	17.38	36.51	10.33	9.40	19.73 /1	
			proposed Bank loan		9.30		

/1 Includes technical assistance to be provided by CIDA (US\$0.20 million, of which US\$0.16 represents the estimated foreign exchange component). This accounts for the difference between the total foreign exchange cost of the project and the proposed Bank loan.

4.25 The project cost includes a contingency allowance for unforeseen physical additions equal to 15% of the estimated construction cost and 10% of furniture and equipment costs. The allowance for construction is slightly higher than usual due to site development problems caused by difficult soil conditions. Total contingencies would represent 22% of the base line costs, 12% for unforeseen physical additions and 10% for price increases, or 18% of the total costs including contingencies (Annex 15).

4.26 The foreign exchange component has been calculated on the basis of (i) 33% for site development and buildings, (ii) 50% for furniture, (iii) 95% for equipment, (iv) 40% for professional services, (v) 75% for specialists, (vi) 100% for fellowships, and (vii) 100% for interest during construction. The estimated foreign exchange component totals US\$9.30 million equivalent, or about 47% of total project cost of US\$19.73.

4.27 Unit capital costs per place, US\$878 for Junior Secondary Schools, US\$905 for Combined Junior/Senior Secondary Schools, US\$986 for Senior Comprehensive Schools, US\$1,108 for the Teacher Training College, US\$2,096 for the Technical Institute and US\$2,963 for the Farmer Training Center, compare favorably with similar Bank/IDA financed institutions (Annex 16).

4.28 At full capacity, the project institutions would require about TT\$ 9 million a year in operating costs, corresponding to about 6% of projected recurrent expenditure on education by 1983. The Government attaches high priority to the proposed project, and should be able to meet these expenditures, as well as its share of the capital costs.

V. IMPLEMENTATION AND DISBURSEMENT

5.01 The project would be implemented over a period of six years after signing the Loan Agreement. An additional six months would be required for completion of payments and withdrawals. Construction works would be phased over a period of about 4-1/2 years comprising four phases (Annex 17). Phase I would include the construction of the Teacher Training College, the Farmer Training Center and two Junior Secondary Schools. The Technical Institute and three additional Junior Secondary Schools would be built during Phase II. The three Senior Comprehensive Schools and the remaining Junior/Senior Secondary Schools would be completed in Phase III and IV, respectively. Project construction work per year would correspond to about 7-12% of the value of expected annual building activity in the country.

Administration

5.02 The Project Unit established within the Ministry of Works for the implementation of the First Education Project would also be responsible for the financial and administrative control of the second project. Its responsibilities would remain the same, namely: (i) supervision of project implementation; (ii) coordination with the Ministries involved in the project, particularly the Ministries of Agriculture, Education and Works; and (iii) liaison

with the Bank. Due to new responsibilities assigned to the Project Unit in relation to other projects ^{1/}, additional supporting staff would be required. During negotiations the government presented an organizational chart acceptable by the Bank describing the positions within the expanded Unit and duties and responsibilities of each officer with regard to the various projects supervised by the Unit. Agreement was reached with the government that a condition of effectiveness of the loan agreement would be the appointment for the Project Unit of an engineering assistant, a structural engineer, an administrative officer and three draftsmen. In addition, the government provided an assurance that additional supporting staff for the Unit (including at least three clerical officers and one accounting assistant) would be appointed within six months after the date of the Loan Agreement. The government also provided an assurance that any new appointment to the positions of Project Unit Director, Architect, Accountant and Procurement Officer, as may be required during project implementation, would be acceptable to the Bank.

Professional Services

5.03 The project institutions would be designed by consultant architects agreeable to the Bank and commissioned on terms and conditions satisfactory to the Bank. A sufficient supply of qualified architects is available in Trinidad and Tobago. Resident clerks of works, provided without cost to the project by the Ministry of Works, would assist in the supervision of construction.

Sites

5.04 Of the 16 sites required for the project institutions, 11 have already been selected. Two of the selected sites will require a feasibility study by the consultants regarding suitability for construction. During negotiations, the government provided assurances that all required sites, agreeable to the Bank, would be legally acquired prior to the scheduled start of construction. All land required for the project would be provided without cost to the project. No difficulty is anticipated in acquiring the required sites.

Procurement

5.05 Construction, furniture and equipment contracts would be awarded on the basis of international competitive bidding in accordance with the Bank's Guidelines for Procurement. Items would be grouped to the extent practicable to form sizable packages to permit bulk procurement. Detailed master lists of furniture and instructional equipment would be submitted for Bank review prior to procurement. It is expected that all equipment and about 30% of the furniture will be procured from foreign sources. It is unlikely that foreign firms will submit bids for civil works, since Trinidad has a well developed and competitive construction industry.

^{1/} IBRD Population Project Loan No. 743-TR and the Inter-American Development Bank Projects mentioned above (para. 3.19).

5.06 Agreements regarding preferential treatment with respect to import duties are not applicable, since furniture and equipment for education purposes are exempt from import duties. During negotiations, reconfirmation of such exemptions was obtained from the government.

Disbursement

5.07 Disbursement (Annex 18) would be on the basis of (i) 100% of the c.i.f. cost of imported equipment; (ii) 100% of the c.i.f. cost or ex-factory price of furniture; (iii) 34% of the cost of civil works and professional services; and (iv) 81% of total expenditures for specialists' services and fellowships. The percentages for civil works, professional fees and technical assistance would be adjusted as necessary to distribute disbursements over the implementation period. Undisbursed funds would be available for cancellation.

VI. AGREEMENTS REACHED AND RECOMMENDATION

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

- (i) a special section staffed with personnel working full time on matters of teacher selection and training will be established in the Ministry of Education before the end of 1973 (para 4.06);
- (ii) the expansion of the staff of the Division of Supervision, undertaken under the first Bank project, will continue as required to permit a supervision visit in each public secondary school at least once a year (para 4.06);
- (iii) the position of Director of Technical Education in the Ministry of Education will be filled as soon as possible, but not later than 1973 (para 4.17);
- (iv) new curricula for the San Fernando Technical Institute will be developed and presented to the Bank for comments within two years of the Loan Agreement signing, and a comprehensive curriculum review will take place thereafter every three years (para 4.16);
- (v) action will be taken to recruit and retain an adequate number of qualified technical teachers and appropriate adjustments in terms and condition of service will be introduced to compensate technical teachers for the comparative lack of promotional opportunities (para 4.17);

6.02 A condition of effectiveness of the Loan Agreement would be the appointment of adequate supporting staff for the Project Unit (para 5.02).

6.03 A condition of disbursement would be the development of an acceptable extension program for the Farmer Training Mobile Units and satisfactory arrangements for their staffing and maintenance (para 4.21).

6.04 The project is suitable as a basis for a Bank loan of US\$9.3 million to Trinidad and Tobago for a term of 22 years, including a grace period of 7 years.

THE EDUCATION AND TRAINING SYSTEM AND ITS REFORM

1. General (Chart WB-6801)

1.0 The education and training system in Trinidad and Tobago is still largely patterned after the traditional British system (Chart WB-6802). Education is free and compulsory between the ages of 6 and 12. The education system consists of (i) a five-year primary course normally beginning at the age of seven (standards 1-5); (ii) a secondary course comprising a five-year cycle (forms 1 - 5) leading to the Cambridge General Certificate of Education, "O" level, followed by a two-year cycle (form 6) leading to the Cambridge General Certificate of Education, "A" level; (iii) third level courses of three to seven years duration at the University of the West Indies. Post-primary courses (standards 6 and 7) and Intermediate courses (forms 1 - 5) are provided for those who fail to qualify for general secondary education. Craft training of 2 - 3 year duration follows the completion of post-primary courses. Technician training and primary teacher training courses are also offered, upon the completion of general secondary education, first cycle. Education is mainly public at the primary level (96% of enrollments in government or government assisted schools). Private education is still important (about 30% of enrollment) at the secondary level. Third level education is entirely public.

2. Administration (Chart WB-6804)

2.0 The Ministry of Education and Culture is responsible for the overall planning and development of primary and secondary schools, for their staffing, ^{1/} for programs of studies, examinations and supervision. The Ministry of Tobago Affairs is responsible for school administration in Tobago. Agricultural training below the university level is largely the responsibility of the Ministry of Agriculture. The Office of the Prime Minister handles the relationships with the University of the West Indies, and is responsible for fellowship programs and for informal education schemes (Community Development Program).

2.1 Administration within the Ministry of Education is highly centralized (Chart WB-6804). The Permanent Secretary is the chief administrative officer and is assisted by a Chief Education officer, under whom are three Directors of Division responsible for Planning and Development, School Supervision and Central Services, respectively. Educational planning is related to overall

^{1/} Financial control and authorization of the filling of vacancies lie with the Ministry of Finance. The Prime Minister's Office is responsible for the classification of posts and for negotiations with recognized associations of teachers.

socio-economic planning, and it is functioning properly. The personnel for supervision of secondary education is highly qualified, but it is still insufficient in view of the projected expansion in enrollments. The position of Director of Technical Education is still vacant.

2.2 The Ministry of Education and the Ministry of Tobago Affairs administer directly and supervise the government schools. Assisted private schools are owned and managed by voluntary agencies, in most cases denominational groups. Their autonomy is however limited by their financial dependence on the government for recurrent and most of capital expenditures, and by statutory provisions about students' admission and teachers' appointment. The remaining private schools are neither financed nor supervised by the government.

3. Primary Education

3.0 Primary education consists of five years of primary school, leading to the Common Entrance Examination (CEE), which qualifies for secondary education. Two years of post-primary education leading to the Primary School Leaving Certificate (PSLC) are provided for those who fail to pass the CEE. The Primary School Leaving Certificate is a prerequisite for admission to vocational schools.

3.1 Total enrollment in primary schools was about 140,000 or 96% of the age group in 1969/70. About 96% were enrolled in public schools. Enrollment in post-primary classes was about 33,000. Enrollment is equally distributed between boys and girls in both rural and urban areas. Up to standard 5 promotion to the next grade is largely automatic, and very few students drop out. Accelerated promotion is common, in order to increase children's chances of passing the CEE. Together with repetition, this accounts for inflated enrollment in Standard 5 (Chart WB-6801).

3.2 Curricula and syllabi are being revised to improve their relevance for local environment and culture. However, instruction is distorted by the selectivity of the CEE, which results in undue emphasis on rote learning. School facilities are often old and inadequate, with overcrowded classes. The number of teachers in public primary schools was about 5,500 in 1970, and of these 45% were considered unqualified. Untrained teachers are now being assigned for a two year full time course in teacher training colleges, about 250 completing training each year. (Para. 7.0.)

3.3 Post-primary education (standards 6 and 7) is in fact a mere continuation of primary schooling in the same buildings, with the same teachers and with a curriculum which is basically a repetition of what was taught in earlier grades. Post-primary schools are ill-equipped, overcrowded and understaffed. In these circumstances, pupils receive only limited benefits from the program, which in turn reduces substantially the educational efficiency of vocational schools.

3.4 Because the secondary school system is under-sized in proportion to the primary school system, the Common Entrance Examination constitutes the most severe screening within the educational system. In 1969/70 only 16% of Standard 5 enrollment was admitted to Form 1, 59% continued to Standard 6 and 7 and the balance either repeated Standard 5 or enrolled in intermediate or private secondary schools. The existing system forces 11 year old children to make vocational choices two years before vocational training is actually imparted, which represents a source of social discrimination and of potential misallocation of human resources.

4. General Secondary Education

4.0 General secondary education is provided in 44 government or government-aided schools and 79 private schools. Total enrollment in 1969/70 was about 45,000 (26% of the age group 12-18), including 3,500 enrolled in Intermediate Schools. About 68% of students were enrolled in public schools.

4.1 Intermediate schools were developed in recent years as extension to primary schools, to provide some form of secondary education for a small number of students who cannot gain places in secondary schools. They offer a five-year secondary course following grade six. Intermediate schools are expected to be phased out over the next five years.

4.2 For most pupils, secondary general education consists of academic studies in Forms 1 through 5, leading to the Cambridge General Certificate of Education (GCE) examination at "O" level. Enrollment in these forms in public schools was about 30,000 in 1969/70. The curriculum consists of a group of ten required courses and one or two elective, mainly in arts subject.

4.3 Admission to Form 6, a two-year program in preparation for the GCE examination at "A" level and for admission to university, is highly selective and is based upon performance in the GCE examination at "O" level and the recommendation of the school principal. In 1969/70 total enrollment in Form 6 was about 1,600, and the crude progression rate from Form 5 was about 15%.

4.4 In 1970, about 52% of the 1,293 secondary teachers in public schools were university graduates, two third of them being without any pedagogical training. Of the remaining 48%, 241 were trained for primary schools and 350 were secondary school graduates ("O" level in five subjects) without any special training. The overall student/teacher ratio was about 21:1.

4.5 Because of the limited capacity of the public secondary school system, private secondary schools, operated for financial profit, have increased in number in recent years. In 1969/70 about 14,000 students were enrolled in 79 registered schools. Private secondary schools are generally too poorly housed and equipped, and too inadequately staffed to provide acceptable standards of education.

4.6 General secondary education in Trinidad and Tobago is mainly geared to the needs of the small minority of students (about 10% of intake in 1969/70), who continue to university education. Its academic bias and dependence upon foreign models severely limit the relevance of curricula for the majority of school graduates, who either enter the labor market or continue to technical education upon completion of secondary studies.

5. Vocational and Technical Education

5.0 Vocational and technical education is carried out in three institutions under the control of the Ministry of Education, at Youth Camps and Trade Centers of the Community Development Division of the Prime Minister's Office and through in-plant training in industry, either by formal apprenticeship under the Board of Industrial Training or informally outside the official schemes. Commercial courses are provided in private schools. Total enrollment in 1969/70 was about 6,000.

5.1 Craft courses are offered at the John Donaldson Technical Institute, the San Fernando Technical Institute and the Point Fortin Vocational Training Center. Courses are of 2-3 year duration and are offered on a full time basis (25-30 hours per week) or on a part time basis (9-12 hours per week). Entry requirement is the Primary School Leaving Certificate. Total enrollment in 1969/70 was about 2,500, one sixth being represented by apprentices registered with the Board of Industrial Training. Very high repetition and dropout rates (40% and 10% respectively in recent years) account for the consistently low output, which averaged about 200-220 certificated craftsmen a year in the recent past. The relevance of curricula in terms of the functional contents of occupations in Trinidad and Tobago is criticized by industrialists. No system exists for periodic re-alignment of course contents with industrial needs.

5.2 Technician courses are provided at the two Technical Institutes. Courses are of three years duration for the technology subjects and two years for Business Management, Draftsmanship and Home Economics, and are offered full time or part time. Entry requirements are (i) GCE "O" level in English and one other subject, or (ii) passing of an entrance examination, or (iii) possession of a National Craftsman's Certificate. Total enrollment was about 900 in 1969/70. Repetition and drop out rates are about the same as for craft courses. Output of certificated technicians averages between 50 and 60 per year, at least two thirds of these being products of the full time courses. The main reason for the extremely low level of educational efficiency are: (a) difficulty in filling existing vacancies for qualified technical teachers; (b) academic inadequacy of students who enter with only the minimum entry qualification and (c) concentration on part time courses where the wastage rate is always high. New curricula for the technician courses were recently developed by Advisory Committees composed of representatives from industry and from government technical departments. Graduates experience no difficulty in finding jobs; in fact, even those who fail the final examination or who drop out often find work as technicians. No placement service or tracer system is available in the Technical Institutes.

5.3 Following a Unesco recommendation, the Government established in 1965 a "National Examination Council for Vocational and Technical Education". This body is authorized to conduct examinations and award the National Technician's Certificate and the National Craftsman's Certificate. Consideration is being given to associating the work of the Council to the City and Guilds of London Institute.

5.4 In an attempt to make provision for the problem of the unemployed and underemployed, several programs have been set up in the field of informal vocational education since 1966. Four residential Youth Camps with total accommodation for about 720 are in operation and one is being constructed; craft courses of 2 year duration are offered in motor mechanics, welding, plumbing, carpentry and electrical installation, leading to the Assistant Craftsman's Certificate. Of the four planned Trade Centers, only one got into operation, and trains about 25 welders in one year course. Ten non-residential Youth Centers have been established, offering part time training in a variety of simple crafts. All centers - with the exception of the Trade Center at Point Fortin, which is financed by Shell Trinidad - are badly underequipped and understaffed.

5.5 A survey carried out in 1971 by the Ministry of Planning and Development showed that about 90 firms were offering in-plant training to about 3,400 employees. The duration of courses varied from several days to 3 years and ranged from management training to semi-skilled operators' training.

5.6 As a result of a study made by a Cabinet Tripartite Committee in 1969, a National Training Board has been set up, composed of 22 members drawn from the public sector, trade unions, associations of employers and professional societies. The purpose of the Board is to advise the government on matters related to technical and vocational education and to coordinate and standardize craft training carried out in institutions and industrial enterprises. The Board held its inaugural meeting in February 1972.

6. Agricultural Education

6.0 Agricultural education and training in Trinidad is provided at the Faculty of Agriculture, University of the West Indies, at the Eastern Caribbean Institute of Agriculture and Forestry (ECIAF) and in connection with the settlement program under the Crown Lands Development Project. Extension work is undertaken by the Crop and Livestock Extension Division of the Ministry of Agriculture, most extension officers being technicians graduated from ECIAF. No facilities are available and no systematic arrangements have been made so far for the training of adult farmers.

6.1 The Crown Lands Development Project - partially financed by the Bank (Loan 486-TR) - consists of settling selected unemployed laborers on government lands known as "Crown Lands" and providing them with the necessary infrastructures and capital to start farming operations. Before farmers are settled, they receive basic agricultural training and are thereafter given technical supervision. To date a total of about 1,000 families have been settled.

6.2 The Eastern Caribbean Farm Institute of Agriculture and Forestry (ECIAF) offers two-year full time courses at the technician level. Requirement for admission is the possession of the General Certificate of Education at "O" level in at least 5 subjects. The Institute can accommodate a maximum of 128 students, 100 in agriculture and 28 in forestry. Output in recent years averaged about 45, most graduates being employed by the Ministry of Agriculture. Curriculum is presently being revised with a view to making it more production-oriented and less academically biased.

6.3 Agricultural education at university level is dealt with in para. 8.0.

7. Teacher Training

7.0 Primary teacher training is offered in a two-year course following the completion of secondary education (GCE at "O" level in at least 5 subjects). Students are selected for in-service training courses at four of the five colleges from the group of untrained primary school teachers (para. 3.2). The fifth school - Mausica Teacher Training College - offers pre-service courses. Total enrollment in 1969/70 was about 700, yielding an annual output of 350. Output will be increased by 220 after the completion of the new Teacher Training College, which is being built under the first IBRD loan. All colleges utilize a new syllabus published in 1970, which requires 50 percent of class time to be spent in professional studies including practice teaching, 40 percent in general education and teaching fields, and the balance in elective subjects. With the exception of Mausica College, all existing colleges have inadequate facilities for training teachers in industrial arts, agriculture, home economics, arts and crafts and general science.

7.1 No institution for training secondary school teachers is in operation in Trinidad at present. A crash program for retraining secondary teachers has been financed by the Organization of American States, in cooperation with the Institute of Education of the University of the West Indies. Nearly 300 teachers were retrained in 1969/70 and 1970/71, and the program has been extended to 1974. Plans of the establishment of a Faculty of Education at the U.W.I., St. Augustine, are well advanced.

7.2 At the moment, technical and vocational teachers are trained abroad. A Technical Teacher Training Unit is being established at the John Donaldson Technical Institute, under an Inter American Development Bank loan. Trainees will have either graduate or other equivalent qualifications and will be given a one-year course of pedagogical training.

8. Higher Education

8.0 Higher education is carried on by the University of the West Indies, St. Augustine, which operates within the framework of a regional university serving several countries of the Caribbean area. Three-year degree programs in agriculture, arts, engineering, natural sciences and social sciences are offered.

An Institute of Education has been functioning at the university since 1963, studying primary teacher training methods and primary school curriculum. In 1970/71, total enrollment in the University of the West Indies was about 5,500, roughly one fourth of students being from Trinidad and Tobago. The ratio of arts (Arts, Social Sciences, Education, Law) to science (Natural Sciences, Medicine, Agriculture, Engineering) was 1:0.94. Output of agricultural graduates was 45 and the output of graduate engineers about 90, 40% being Trinidadian citizens.

9. Educational Reform

9.0 Following a UNESCO Educational Planning Mission in 1964 and the establishment of an Educational Planning Unit in the Ministry of Education, an "Outline of a Plan for Educational Development in Trinidad and Tobago 1967-1983" was prepared and submitted to the Government in 1967. The plan represents an ambitious attempt to change the traditional educational structure of the country, improve the relevance and efficiency of the education system and provide a better distribution of educational opportunities.

9.1 The reform is expected to be implemented in three phases, 1968-72, 1973-77 and 1978-83. The following "strategy of emphasis" was envisaged in the Plan:

1968-72: Junior Secondary Schools, Senior Comprehensive Schools, Teacher Training, Central Services and Administration;

1973-77: Primary Schools, Senior Comprehensive Schools, Vocational Education, Library Services and Educational Broadcasting;

1978-83: Primary Schools, Technical Institutes.

A first IBRD project (Loan 564-TR, 1968), consisting of 16 junior secondary schools, 6 senior comprehensive schools and 1 teacher training college, is helping to finance the first phase of the reform.

9.2 A major aspect of the reform will be the introduction of junior secondary education for all children in the age group 12-14. This will provide a fully integrated system of general education from age 5 upward and will postpone vocational choices to age 14 plus, when identification of interests, aptitudes and abilities is more feasible and less socially discriminating. New common curricula with emphasis on local environment and culture have been developed. Recently appointed supervisors in social studies, science, mathematics and English are preparing materials for teachers and will conduct intensive teacher training courses on the new curricula in selected schools. All students will spend 17 periods per week in English, Spanish, social studies, science and mathematics. Agriculture will be studied two periods each week by all students, boys and girls. Arts and crafts, industrial arts and home economics will be taught five periods per week, in each grade.

9.3 Senior comprehensive schools will incorporate pre-vocational training with academic courses in a broad curriculum better adapted to the needs of those who seek employment after completion of secondary education and more suitable as a background for further technical education. Specialized options in technology (including construction, mechanics and technical drawing), agriculture, commercial subjects and home economics will be offered in Form 4 and 5; Form 6 will continue to provide academic programs in preparation for university studies. Each new Senior Secondary School will be located so as to accommodate students from three Junior Secondary Schools. The planned distribution of new schools aims at correcting the present concentration of secondary schools in or near the two main towns of Port of Spain and San Fernando. Ten new senior comprehensive schools are expected to be built before 1976, and 26 existing secondary schools will be converted.

9.4 Six new vocational training centers and three farm schools are to be built under a loan agreement with the Inter-American Development Bank. The government plans to construct an additional seven vocational training centers. A total of about 6,000 additional training places will be provided, with an enrollment of about 19,000 divided between full time and part time courses and output of about 7,000 annually. The centers will offer courses of 2-3 year duration leading to the National Craftman's Certificate, course of 6-18 months duration leading to the Assistant Craftsman's Certificate, apprenticeship courses (3-4 years) supplementary to on-the-job training, and accelerated training and retraining courses of varied duration for adult workers.

9.5 The two Technical Institutes will be upgraded into institutions for the training of higher technicians only. The relocation and expansion of the Technical Institute in San Fernando is included in the proposed Bank project. Both Institutes will offer courses in electrical and mechanical engineering, laboratory technology, and business management. Course contents will be revised as a result of an analysis of technician occupations to be carried out by the National Training Board. Total enrollment in the two institutions will be around 3,500, yielding an annual output of about 1,000 technicians.

Schedule of Technical Assistance

<u>Experts</u>	<u>Total Man Months</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	
1. Expert in Training Management <u>1/</u>	24	12	12					)
2. Expert in Manpower Analysis <u>1/</u>	12	12						)
3. Expert in Job Analysis Standards and Trade Testing <u>1/</u>	24	12	12					)
4. Expert Equipment Procurement and Coordinator (Mechanical Engineer)	45		9	12	12	12		)
5. Expert in Electrical Engineering	33				9	12	12	)
6. Expert in Electronics	24				6	12	6	)
7. Expert in Building Construction	33				9	12	12	)
8. Expert in Basic Eng. Science	<u>24</u>				6	12	6	)
Sub-Total Experts	219							
<u>Fellowships</u>								
1. Training Management <u>1/</u> (2 x 6)	12	6	6					)
2. Manpower (1 x 6) <u>1/</u>	6	6						)
3. Job Analysis (1 x 6) <u>1/</u>	6		6					)
4. Mechanical Eng. (2 x 12)	24			6	12	6		)
5. Electrical Eng. (2 x 12)	24			6	12	6		)
6. Electronics (1 x 12)	12					12		)
7. Building (1 x 12)	12			6	6			)
8. Basic Eng. Science (1 x 12)	12			6	6			)
9. Coordinator <u>1/</u>	6	6						)
10. Farm Machinery Specialist <u>1/</u>	6	6						)
11. Communication Specialist <u>1/</u>	<u>6</u>	6						)
Sub-Total Fellowships	126							

1/ To be financed by CIDA.

2/ Design of buildings to commence in March 1974 with classes to begin in September 1976.

Comparative education data are useful in the evaluation of various education systems and the analysis of relative stages of educational development between various countries. However, on the basis of the present data, cross-national comparisons should be approached with great caution. Data presented in the following table have been collected largely from UNESCO's comparative education studies. The remainder are staff estimates or data from UNESCO. Efforts have been made to standardize definitions and, within limits, to check the accuracy of the data. Nevertheless, such data are still imperfect in several respects and the Bank is working to improve them progressively on the occasion of its operational work. In the use of these data, the following qualifications should be borne in mind:														
1) "Education" as defined in the table includes all education and training, formal and non-formal;														
2) "Primary" education refers to education at the first level and "secondary" education refers to all education at the second level, including technical, vocational, general, technical, agricultural, etc.;														
3) "Vocational" education (Col. 10) includes enrollments in technical, commercial, agricultural, vocational and home-economic courses;														
4) "Literacy Rates" (Col. 3) are usually obtained from country censuses. In many countries they are only approximations and it is doubtful that any uniform definition of "literate" has been followed consistently;														
5) "Public expenditure in education" (Columns 4 and 6) refers to all capital and recurrent expenditures devoted to education by public and quasi-public agencies;														
6) "Enrollment ratios" (Columns 7 and 9) refer to school year and mean the percentage of eligible children enrolled full-time in the appropriate school, public and private by level. They are often subject to a wide margin of error in the developing countries owing to variations in the accuracy of basic data (i.e., age-specific population and enrollment figures). The number of students actually in school. Overaged students whose inclusion is indicated by footnotes also can inflate the ratios.														
ADVANCED	Year	Population (Millions)	GDP/CAPITA (US \$)	Literacy Rate (% of adults)	Public Expenditure per Capita (US \$)	% of GDP devoted to Education (Public Expenditures only)	% of Total Public Expenditure devoted to Education	Primary Enrollment Ratio	Primary Students per Teacher	Secondary Enrollment Ratio	% Secondary Enrollment in Vocational Schools	Secondary Students per Teacher (full-time equivalent)	% Higher Enrollment in Agriculture and Engineering	Annual Output from Higher Education per 100,000 population
Austria	69	7.4 F	2,010 F	99	73	4.3	9.9	99	24	46	60	12	24	77 B
Canada	70	21.4 F	3,700 F	93	309	8.1	22.5 E	99	25	80 D	12 E	17	9	513
Germany, Fed. Rep.	69	61.6 F	2,930 F	99	85	3.1	9.1 D	96	28	66 Y	28	21	25	230
Japan	69	103.4 E	1,920 F	99	50 C	3.9	20.5	99	26	90	20	19	21	308
Netherlands	69	13.0 F	2,450 F	99	180	7.2	20.0	99	30	72	41	19	25	230
Norway	71	2.8 F	2,460 F	99	110	4.8 N	16.5 H	99	27	66 F	...	18	18	287 C
Sweden	69	3.9 F	2,460 F	99	110	7.1	16.5 H	99	27	66 F	...	18	18	180 C
Switzerland	69	8.1 F	2,460 F	99	110	7.1	16.5 H	99	27	66 F	...	18	18	180 C
United Kingdom	70	55.7 F	4,060 F	99	250 D	5.8	14.6	99 D	16	71 F	34 F	16	10	66 C
U.S.A.	69	204.8	2,270 F	99	94	5.8	13.8	97	28	58	5 C	18	16	188 B
EUROPE	70	204.8	2,270 F	99	94	5.8	13.8	97	28	58	5 C	18	16	188 B
1. Greece	69	8.9 F	1,090 F	82 C	23	2.2	11.7	99	33	53	16	31	17 D	90
2. Ireland	69	2.9 F	1,360 F	98	58	4.8	11.4	95	35	54 YC	25	17	13 B	133 A
3. Spain	70	33.6	1,020	94 D	20	2.4	12.5 E	91	35	29	22 C	30	19	31 C
AFRICA	70	14.3	300	25 B	35	10.5	20.0	51	42	9	22	20	6	6
4. Algeria	70	5.8	180	...	6	3.0	20.0	74	48	8	23	25	4	7
5. Cameroon	70	1.6	140	...	5	4.0	20.0	73 X	64	4 X	18	30	...	...
6. C. A. R.	70	3.6	60	7	3 D	4.3 N	14.3 D	33	72	2	8	30	...	...
7. Chad	70	0.9	300	50 ?	14	5.8	23.2	80 X	59	13	10	28	...	...
8. Congo (B)	70	24.6 F	630 F	30 D?	11 C	4.0 P	20.0	17	51	5	2	18 E	1	4
9. Ethiopia	68	8.6	310	...	13	4.7	21.7 Q	74	29	8	8	18	15 E	...
10. Ghana	68	4.9 F	310 F	...	10	4.6 C	18.4	65	23	6	8	23	...	...
11. Ivory Coast	68	11.3 F	210 F	30	8	3.7	11.7	50 X	35	12 X	3	16	12 C	...
12. Kenya	70	1.5	240	15	8	4.1 N	17.4	32	35	3	3	22	...	...
13. Liberia	70	15.5	230	20	9	3.2 N	20.1	34 X	37	4	8	23	16	6
14. Morocco	71	55.1 F	120 F	...	10	3.5	20.1	32	46	8 X	7 B	25	2 C	8 A
15. Nigeria	68	3.9 F	230 F	7 VA	4	2.9	19.5 E	32	46	13	7 C	25	20	8 A
16. Senegal	68	2.6 F	190 F	5	1	6.7 E	6.7 E	31 X	30	2 A	3 C	20	11 A	3
17. Sierra Leone	68	15.7 F	120 F	...	4	5.5 N	22.0 Q	48 A	48 A	2	11 A	21	11	3
18. Somalia	71	13.3 F	130 F	...	4	4.5	23.9 Q	78	44	1	20	24	6	1
19. Tanzania	71	5.4 F	60 F	...	2	4.5	23.9 Q	78	44	1	20	24	6	1
20. Uganda	70	13.8	90	...	6	5.7 N	19.0 E	9	44	8	10	24	10	2
21. Upper Volta	72	9.8 F	400 F	41 A	20	6.2	15.0	84 X	56	11	5	22	2	2
22. Zambia	68	4.1 F	350 F	55	6 E	2.9 F	17.0	80	56	17	1	26	10	16 C
23. Africa and Caribbean	69	4.1 F	350 F	55	6 E	2.9 F	17.0	80	56	17	1	26	10	16 C
24. Dominican Republic	69	3.5 F	300 F	49 VA	10 EV	3.0 B	25.4 CQ	63 C	51	15 C	32 E	...	15 C	7 A
25. El Salvador	68	3.2 F	460 F	28 VA	6 B	4.3 B	17.6	48 X	38	6	22 A	26	10	11 A
26. Guatemala	70	5.7 F	420 F	18	18	2.6	17.1 Q	71	46	19	23 C	23	20 C	22 C
27. Jamaica	69	1.9 F	670 F	86	24	4.4	19.1 Q	86 X	31	43	9 A	21	...	...
28. Mexico	70	50.7	670	76	18	2.6	17.1 Q	71	46	19	23 C	23	20 C	22 C
29. Nicaragua	69	2.0 F	430 F	90	40	5.1	18.9	95	35	49	11	25	19	14
30. Trinidad and Tobago	71	1.0 F	860 F	65 D	10	3.2	14.0	64	31	16	17	...	18 C	35 C
31. South America	69	92.8 F	420 F	90	32	4.0	29.0 F	89	40	35	31	35 A	28 C	41 A
32. Brazil	68	9.8 F	720 F	73 A	12	5.6	13.6 B	71	23	21	22 C	11 A	29 C	20 B
33. Chile	68	21.6 F	420 F	83 A	15	5.0	16.4 C	90 X	34 A	18 C	5 C	18	3 C	21 C
34. Colombia	68	6.1 F	370 F	83 A	15	5.0	16.4 C	89 X	34 A	17 X	5	15	12 A	...
35. Ecuador	70	2.4	260	79	45	4.9	22.0	80	33	35	32	22	18	59
36. Venezuela	70	10.4	980	81	45	4.9	22.0	80	33	35	32	22	18	59
ASIA	71	14.0 F	390 F	73	15	4.2	19.0	98 F	52 F	50 F	16 F	35 F	27 F	179
40. China (Taiwan)	71	538.1 F	110 F	29	3 AV	2.6 AVY	19.0	79 X	43 A	28 X	6 AV	18 V	11 AV	52 AV
41. India	71	115.6 F	80 F	63	1 Q	2.6	16.0 F	78 X	39 V	15 X	26	18 V	8	...
42. Indonesia	71	28.7 F	380 F	53	10	6.1	15.8	72	42	12	3	36 F	23	89 F
43. Iran	71	9.7	320	26	11	4.4	16.3	64	66	25	3	36	17	80
44. Iraq	70	2.3	250	55 A	17	4.4	18.4 Q	90	42	54 X	3	36	17	46
45. Jordan	70	3.8	250	85 B	8	3.8	18.4 Q	107 X	57	37	34	38	37	114 E
46. Korea	71	2.7 F	590 F	86 F	21 F	3.3 F	18.0	89 X	31	29 X	3	25	16	74
47. Lebanon	68	10.9 F	100 F	89 B	17	4.7	18.5 E	89 X	31	29 X	3	25	16	74
48. Malaysia	68	36.9 F	210 F	72	6	3.6	29.0	90	30	40	8	36	10	457
49. Philippines	70	2.1	920	75	30	3.4	16.1	90	32	42	16	25	18	182
50. Singapore	71	10.4	200 F	70 A	8 V	4.1 V	17.1	92 X	42	13 X	14	33	15	37
51. Thailand	71	36.2 F	390 F	49 A	9	3.5	17.1	92 X	42	13 X	14	33	15	41
52. Turkey	69	35.4 F	390 F	49 A	9	3.5	17.1	92 X	42	13 X	14	33	15	41
SUMMARY FOR DEVELOPING COUNTRIES	46	52	51	50	53	53	52	53	53	52	53	53	47	45
COUNTRIES	(5 - 98)	(1 - 38)	(1.4 - 6.3)	(6.3 - 29.0)	(6 - 107)	(22 - 72)	(1 - 54)	(1 - 32)	(13 - 38)	(1 - 38)	(0 - 457)			
Range	Upper	75	17	4.4	20	17.6	14.3	89	46	28	22	26	18	41
Median	50	10	3.4	17.6	74	17.6	14.3	74	37	15	11	20	11	14
Lower	25	6	3.0	14.3	46	3.0	14.3	46	32	8	5	20	8	6

Symbols: ... Data unavailable
0 Magnitude less than half of unit employed
? Questionable
* Includes part-time students

Notes: A = 1966 or before
B = 1967
C = 1967
D = 1968
E = 1969
F = 1970
G = 1971
X = UNESCO sources

Sources: Columns (1) and (2) : World Tables (IBRD)
Columns (3)-(9) and (11) : IBRD Missions
Columns (10)-(12) and (13) : UNCTAD Statistical Yearbook and UNCTAD Missions

TRINIDAD AND TOBAGO: BASIC ECONOMIC INDICATORS

(TT \$ million)

		<u>1960</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u> (prov.)	<u>1983</u> (proj.)	<u>Average Growth Rates p.a.</u>	
											<u>1960-1970</u>	<u>1970-1983</u>
1.	Population (thousands) ^{1/}	831.2	973.9	994.8	1,010.1	1,020.6	1,027.8	1,026.7	1,030	1,200	2.2	1.2
2.	GDP (current factor cost) ^{2/}	866.0	1,176.0	1,285.0	1,378.0	1,523.0	1,618.6	1,705.0	1,810		7.0	
3.	GDP (constant 1970 factor cost) ^{3/}											
4.	GDP per capita in US \$ ^{4/}	1,160.4	1,420.6	1,490.6	1,565.4	1,599.1	1,657.4	1,705.0	1,762	3,240	4.0	5.0
5.	Labor Force (thousands) ^{5/}	609	706	755	798	746	787	830	879	1,460	3.2	4.4
	of which: Employed	297.9	353.8	351.5	368.2	363.8	368.4	362.0	353	430	2.0	1.6
	Unemployed	260.9	304.8	304.8	317.0	311.1	318.3	316.8	308	390	2.0	1.6
6.	Employment By Sectors (percentages):	37.0	49.0	46.7	51.2	52.7	50.1	45.2	45	40	2.0	-
	Agriculture	21.2	25.4	22.3	21.8	23.1	23.9	25.6	22.0	22		
	Mining, Refining and Manufacturing	20.6	19.1	18.9	20.2	17.8	17.8	20.8	21.0	22		
	Construction and Power	13.4	10.7	11.2	11.0	11.9	12.3	11.9	14.4	13		
	Commerce	13.3	15.9	16.3	15.5	16.2	14.7	13.7	13.7	14		
	Transport and Communication	6.2	7.8	7.7	7.6	6.8	7.0	6.8	6.4	6		
	Services	25.3	21.1	23.6	23.9	24.2	24.3	21.2	22.5	23		
7.	Unemployment Rate	12.4	13.8	13.3	13.9	14.5	13.6	12.5	12.7	9		
8.	Net Emigration (thousands)	0.2	3.1	5.2	8.9	9.1	15.6	17.0	15.0	7.0		
9.	Government Current Revenues:											
	Absolute amount	148.7	206.2	214.3	226.8	268.0	303.6	310.1	348	650	4.6	5.8
	% of GDP	17.2	17.5	16.7	16.5	17.6	18.8	18.2	19	20		
10.	Government Expenditure:	156.4	247.2	263.9	258.6	286.6	295.7	363.3	447.8	850	5.8	6.5
	of which: Recurrent	117.8	189.3	203.6	203.7	219.8	235.7	265.3	333.2	650	5.4	7.0
	Capital ^{7/}	38.6	57.9	60.3	54.9	66.8	60.0	98.0	114.6	200	6.8	5.0

Sources: Third Five-Year Plan (1969-1973); Annual Statistical Digest (1969); Quarterly Economic Reports (1969-1971); International Travel Report (1969); Continuous Sample Survey of Population (1963-1971); Budget documents; Locally available data; Staff Estimates.

- ^{1/} Mid-year estimate, revised series. The projection is based on the assumption of a continuous decline in the rate of natural growth (from about 19.5% in 1970 to about 8.5% in 1983) and on an average rate of net emigration of about 7,000 persons a year throughout the period.
- ^{2/} National income data are being revised by the C.S.O. Estimates should therefore be considered provisional.
- ^{3/} The official retail price index was used to deflate GDP.
- ^{4/} The current exchange rate (US\$1 = TT\$ 1.85) was used for projection.
- ^{5/} 1970 prices.
- ^{6/} Mid-year Estimate.
- ^{7/} Development Expenditure only (excluding amortization and other loan repayments).
- ^{8/} Assuming the same elasticity with respect to GDP as in the period 1960-70.
- ^{9/} In real terms.

TRINIDAD AND TOBAGO: EDUCATIONAL ATTAINMENT OF THE LABOR FORCE (1969)
(percentages)

	<u>Illiterate</u>	<u>Attended or Completed Primary</u>	<u>Attended Secondary</u>	<u>Completed Secondary</u>	<u>Attended or Completed University</u>	<u>Educated in a Foreign Country</u>	<u>1/</u>	<u>TOTAL</u>
1. Labor Force:	7.6	68.2	15.4	7.1	1.1	0.6		100.0
Men	5.1	72.2	14.8	6.2	1.2	0.5		100.0
Women	12.9	60.0	16.8	8.8	0.8	0.7		100.0
2. Employed:	8.4	67.7	14.2	7.7	1.3	0.7		100.0
Men	5.6	71.8	13.8	6.8	1.4	0.6		100.0
Women	14.7	58.6	15.0	9.9	1.0	0.8		100.0
3. Unemployed:	2.8	72.1	22.8	2.6	-	-		100.0
Men	2.2	74.6	21.0	2.2	-	-		100.0
Women	3.7	67.6	25.5	3.2	-	-		100.0
4. Unemployment Rate by Level of Education:	5.0	14.4	20.0	5.0	-	-		13.6
Men	5.5	13.0	17.9	4.5	-	-		12.6
Women	4.5	17.8	24.0	5.7	-	-		15.7

Source: Central Statistical Office, Continuous Sample Survey of Population (1971).

1/ Various levels.

TRINIDAD AND TOBAGO: GDP, EMPLOYMENT AND PRODUCTIVITY
BY SECTOR 1960-1970 WITH PROJECTIONS TO 1983

A. <u>Actual and Projected</u> <u>Growth Rates p.a.</u>	(<u>%</u>) <u>1960-1970</u>			(<u>%</u>) <u>1970-1983</u>		
	GDP	Productivity	Employment	GDP	Productivity	Employment
1. Agriculture	(-) 1.1	(-) 5.0	3.9	3.3	3.0	0.3
2. Mining	(-) 0.1	0.1	(-) 0.2	4.0	3.0	1.0
3. Industry	7.1	5.2	1.9	7.0	5.0	2.0
4. Services	6.0	4.8	1.2	4.5	2.5	2.0
5. Economy	4.0	2.0	2.0	5.0	3.4	1.6

B. <u>Employment by Sectors</u> <u>1/</u> (thousands)	<u>1960</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1983</u> (proj.)
1. <u>Agriculture, Forestry</u> <u>and Fishing</u>	<u>55.2</u>	<u>68.9</u>	<u>72.0</u>	<u>76.0</u>	<u>81.2</u>	<u>67.7</u>	<u>85</u>
2. <u>Mining and Quarrying</u>	<u>12.8</u>	<u>12.7</u>	<u>11.8</u>	<u>11.1</u>	<u>12.6</u>	<u>11.5</u>	<u>15</u>
3. <u>Industry:</u>	<u>75.6</u>	<u>86.3</u>	<u>80.6</u>	<u>84.4</u>	<u>91.0</u>	<u>97.6</u>	<u>120</u>
of which: Manufacturing	40.6	51.4	43.7	45.4	53.3	53.1	70
Construction	29.9	21.6	23.5	31.1	30.5	36.4	40
Electricity,							
Gas and Water	5.1	13.3	13.4	7.9	7.2	8.1	10
4. <u>Services:</u>	<u>117.3</u>	<u>149.1</u>	<u>146.7</u>	<u>146.8</u>	<u>132.0</u>	<u>131.1</u>	<u>170</u>
of which: Commerce	34.8	49.1	50.4	46.9	43.3	42.1	55
Transport							
and Communication	16.2	24.2	21.0	22.4	21.4	19.6	25
Others	66.3	75.8	75.3	77.5	67.3	69.4	90
5. <u>Total Employment</u>	<u>260.9</u>	<u>317.0</u>	<u>311.1</u>	<u>318.3</u>	<u>316.8</u>	<u>307.9</u>	<u>390</u>

Sources: 1960 Census; Continuous Sample Survey of Population (various years); III Plan; Staff Estimates

1/ Mid-year Estimate

TRINIDAD AND TOBAGO: PROJECTED MANPOWER REQUIREMENTS 1972 - 1983

A. Projected Manpower Requirements 1972-1983

Sector of Economic Activity	1971 Manpower Stock	1971 Manpower Stock Surviving to 1983 ^{1/}	1983 Manpower Requirements	Replacement	Net Demand 1972-1983 (rounded figures)	
					Expansion	Total
1. Agriculture, Forestry and Fishing	67,700	45,000	85,000	23,000	17,000	40,000
2. Mining and Quarrying	11,500	7,500	15,000	4,000	3,500	7,500
3. Manufacturing	53,100	35,000	70,000	18,000	17,000	35,000
4. Construction	36,400	24,000	40,000	12,500	3,500	16,000
5. Electricity, Gas and Water	8,100	5,500	10,000	2,500	2,000	4,500
6. Commerce	42,100	28,000	55,000	14,000	13,000	27,000
7. Transport and Communication	19,600	13,000	25,000	6,500	5,500	12,000
8. Other Services	69,400	47,000	90,000	22,500	20,500	43,000
9. Economy	307,900	205,000	390,000	103,000	82,000	185,000

^{1/} Survival factors 3.5% p.a. allowing for mortality, retirements and net emigration) were applied to the Trinidadian occupational structure for 1971. Because of lack of data the coefficients used are not occupationally specific, and no allowance was made for inter-occupational mobility.

B. Projected Skill Distribution and Training Needs 1972-1983 ^{2/}

	1. Agriculture, Forestry and Fishing	2. Mining and Quarrying	3. Manufacturing	4. Construction	5. Electricity Gas and Water	6. Commerce	7. Transport and Communication	8. Other Services	NET DEMAND 1972-83	AVERAGE ANNUAL DEMAND 1972-83 (rounded figures)
1. Professionals	0.003	0.050	0.010	0.010	0.010	0.010	0.050	0.050	4,000	300
2. Technicians	0.007	0.100	0.030	0.030	0.040	0.030	0.150	0.150	12,000	1,000
3. Craftmen, Foremen	0.020	0.200	0.100	0.460	0.250	0.200	0.300	0.250	31,000	2,600
4. Semi-Skilled and Unskilled workers	0.970	0.650	0.860	0.500	0.700	0.760	0.500	0.550	138,000	11,500
5. Total	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
NET DEMAND 1972-83	40,000	7,500	35,000	16,000	4,500	27,000	12,000	43,000	185,000	
AVERAGE ANNUAL DEMAND 1972-83 (rounded figures)	3,300	650	2,900	1,350	350	2,250	1,000	3,600		15,400

^{2/} The occupational matrix used for projection was derived from 1970 Manpower Survey, taking into account also the results of 1960 Census. Given the small size and limited coverage of that survey, and the need for projecting the coefficients to 1983, adjustments had to be introduced, in most cases based on international comparisons. It should be noticed that the matrix is meant to express marginal requirements (i.e. the skill distribution of the additional manpower required in each sector during the period 1972-1983) and, therefore, it does not allow for the need for upgrading the level of the existing labor force. Given the uneven quality of statistical data and the rigidity of this approach, results should be interpreted with caution.

TRINIDAD AND TOBAGO

ENROLLMENTS, GRADUATES AND TEACHERS
BY LEVEL AND TYPE OF EDUCATION 1969-1970

	<u>ENROLLMENTS</u> ^{1/}			GRADUATES	<u>TEACHERS</u> (Full-Time)
	TOTAL	% IN PUBLIC SCHOOLS ^{2/}	% FEMALES		
<u>Pre-Primary</u> Kindergarten	62,000	97.5	48.0	-	1,770
<u>First Level</u>					
Primary (Standards 1-5)	139,515	95.7	49.8	21,800	3,990
Post-Primary (Standards 6-7)	32,914	93.9	50.5	13,400	940
Total First Level	172,429	95.4	50.0	45,200	4,930
<u>Second-Level General</u>					
Intermediate (Forms I-V)	3,583	100.0	48.0	400	80
Secondary General (Forms I-VI)	41,693	66.3	49.0	10,500	1,900
Primary Teacher Training (Grades 11-12)	714	100.0	52.0	322	65
Total Second-Level General	45,990	68.0	49.0	11,222	2,045
<u>Second-Level Vocation- al and Technical</u>					
Vocational	2,469	100.0	n.a.	220	} 135
Technical	927	100.0	n.a.	50	
Commercial	2,500	-	n.a.	n.a.	n.a.
Agriculture	74	100.0	n.a.	31	11
Total Second-Level Vocation- al and Technical	5,970	54.0	n.a.	301	146
<u>Third-Level</u>					
Total	1,060	100.0	28.0	140	n.a.

Source: Compiled from data provided by the Ministry of Education.

^{1/} Enrollment, graduates and teachers in private (non-aided) schools were estimated.^{2/} Includes government schools and private aided schools.

TRINIDAD AND TOBAGO: ACTUAL AND PROJECTED ENROLLMENTS IN PUBLIC SCHOOLS

	1960	1966/67	Actual 1967/68	1968/69	1969/70	Estimated 1970/71	Projection 1982/83	Increase 1960-1970 Absolute	% p.a.	Increase 1970-1982 Absolute	% p.a.
A. <u>FIRST LEVEL (Total)</u>	<u>178,823</u>	<u>216,100</u>	<u>219,609</u>	<u>222,327</u>	<u>224,899</u>	<u>224,200</u>	<u>178,000</u>	<u>46,076</u>	2.3	<u>(-) 47,000</u>	<u>(-) 1.9</u>
1. Pre-Primary (Infant I-II)	52,273	59,946	59,880	59,831	60,470	58,800	50,000	8,197	1.5	<u>(-) 10,500</u>	<u>(-) 1.5</u>
2. Primary (Standards I-V)	107,930	126,516	129,255	132,209	133,515	134,000	128,000	25,585	2.2	<u>(-) 5,500</u>	<u>(-) 0.4</u>
3. Post-Primary (Standards VI-VII)	18,620	29,638	30,474	30,287	30,914	31,400	-	12,294	5.2	<u>(-) 31,000</u>	
B. <u>SECOND LEVEL GENERAL (Total)</u>	<u>14,616</u>	<u>29,774</u>	<u>31,351</u>	<u>35,130</u>	<u>35,880</u>	<u>36,120</u>	<u>109,000</u>	<u>21,264</u>	9.4	<u>73,100</u>	9.7
1. Intermediate (Forms I-V)	2,922	3,579	3,555	3,489	3,583	3,500	-	661	2.0	<u>(-) 3,600</u>	
2. Junior Secondary (Forms I-III)	6,101	14,925	16,137	18,049	18,116	18,200	78,000	12,015	11.5	59,900	13.0
3. Senior Secondary (Forms IV-VI)	5,157	10,586	10,957	12,878	13,467	13,700	30,000	8,310	10.0	16,500	6.9
4. Teacher Training (Grades 11-12)	436	684	702	714	714	720	1,000	278	5.1	300	3.7
C. <u>SECOND LEVEL VOCATIONAL AND TECHNICAL (Total)</u>	n.a.	<u>3,013</u>	<u>3,006</u>	<u>3,587</u>	<u>3,470</u>	<u>4,339</u>	<u>22,000</u>	<u>1,326</u> ^{5/}	9.6	18,500	16.5
1. Vocational ^{1/}	n.a.	) 2,973	) 2,955	) 3,526	2,469	3,529 ^{3/}	18,400	) 1,290 ^{5/}	) 9.4	16,000	18.2
2. Technical	n.a.	)	)	)	927	734 ^{3/}	3,500	)		2,500	12.0
3. Agriculture ^{2/}	15 ^{4/}	40 ^{4/}	51	61	74	76 ^{3/}	100	36 ^{5/}	17.0	...	...
D. <u>THIRD LEVEL (Total)</u>	n.a.	<u>678</u>	<u>688</u>	<u>904</u>	<u>1,060</u>	<u>1,200</u>	<u>3,000</u>	<u>522</u> ^{5/}	15.0	<u>2,000</u>	9.0
E. <u>ALL LEVELS (Grand Total)</u>	<u>193,454</u>	<u>249,565</u>	<u>254,654</u>	<u>261,948</u>	<u>265,309</u>	<u>265,859</u>	<u>312,000</u>	<u>71,855</u>	3.2	<u>47,000</u>	1.4

Sources: C.S.O., A Digest of Statistics on Education 1967-68; Draft Plan for Educational Development in Trinidad and Tobago 1968-1983; locally available data; Staff Estimates.

- ^{1/} Including Farm Schools.
^{2/} Trinidadian technicians only.
^{3/} 1971/72.
^{4/} Estimated.
^{5/} 1966-1971.

TRINIDAD AND TOBAGO

PROJECTION OF TEACHER REQUIREMENTS FOR SELECTED TYPES OF EDUCATION 1971-1983

SECTION OF TEACHER
REQUIREMENTS BY LEVEL
OF EDUCATION 1/

	Estimated 1970/71			Projected 1982/83		
	<u>Enrollments</u>	<u>Teachers</u>	<u>Student/Teacher Ratio</u>	<u>Enrollments</u>	<u>Teachers</u>	<u>Student/Teacher Ratio</u>
1. Primary Schools ^{2/}	227,700	6,510	35:1	178,000	5,500	33:1
2. Junior Secondary Schools	18,200	1,174	27:1	78,000	2,700	29:1
3. Senior Secondary Schools	13,700			30,000	1,500	20:1
4. Vocational and Technical Schools	2,700 ^{3/}	225 ^{3/}	12:1	22,000	1,100	20:1
5. <u>Total</u>	262,300	7,909	33:1	307,000	10,800	28:1

Source: Compiled from data provided by the Ministry of Education.

1/ Government and private aided schools.

2/ Including Intermediate Schools.

3/ Estimated Full-Time Equivalency.

PROJECTION OF TEACHER
TRAINING NEEDS BY QUALIFICATIONS

	1970-71 Stock of Qualified Teachers (Estimated)	1970-71 Stock Surviving to 1982-83 ^{1/}	Stock of Qualified Teachers Required in 1982-83	<u>Teacher Training Needs</u> <u>1971-1983</u>	
				<u>Total Requirements</u> (rounded figures)	<u>Average Annual Requirements</u> (rounded figures)
1. Teachers I (Diploma)	3,600	2,500	8,200	5,700	475
2. Teachers II (Degree)	200	150	1,100	950	80
3. Technical Teachers (Degree)	50	30	450 ^{2/}	400	35
4. Instructors (Technician Level)	170	100	1,050 ^{2/}	950	80
5. <u>Total</u>	4,020	2,780	10,800	8,000	670

Source: Compiled from data supplied by the Ministry of Education.

1/ Statistics on wastage of teachers are incomplete and are distorted by the effects of a revision of teachers' salaries in 1966/67. For the purpose of the projection, wastage rates of 3% p.a. for teachers I and II and 4% p.a. for technical teachers and instructors were used.

2/ Including technical teachers and instructors for comprehensive schools.

TRINIDAD AND TOBAGO
PUBLIC EXPENDITURE ON EDUCATION 1960-71

	(TT \$ millions)								
	<u>1960</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u> (prov.)	<u>1983</u> (proj.)
1. Public Expenditure on Education:	23.3	36.2	45.1	48.8	56.2	55.2	62.1	83.6	179
of which - Recurrent	18.9	32.5	40.1	43.8	46.3	49.9	53.3	66.7	161
- Capital <u>1/</u>	4.4	3.7	5.0	5.0	9.9	5.3	8.8	16.9	18 <u>3/</u>
2. Public Expenditure on Education by Ministries:									
- Ministry of Education	21.0	29.9	37.7	39.2	44.9	43.9	50.7	n.a.	n.a.
- Ministry of Tobago Affairs	0.8	1.4	1.3	1.6	1.8	1.7	2.2	n.a.	n.a.
- Prime Minister <u>2/</u>	0.7	4.7	5.8	6.7	7.1	7.4	8.8	n.a.	n.a.
- Ministry of Agriculture	...	0.2	0.3	0.3	0.3	0.4	0.4	n.a.	n.a.
- Others	0.8	...	...	1.0	1.2	1.8	...	n.a.	n.a.
3. Recurrent Expenditure on Education as a percentage of Current Revenues	12.7	15.8	18.7	19.3	17.3	16.4	17.2	19.2	24.7
4. Capital Expenditure on Education as a percentage of Capital Expenditure	n.a.	6.4	8.3	10.4	16.0	8.8	8.2	15.8	9.0
5. Public Expenditure on Education as a percentage of GDP	2.7	3.0	3.4	3.5	3.7	3.3	3.6	4.6	5.5

Source: Ministry of Education, Budget Documents, Staff Estimates.

1/ Includes scholarships.

2/ Includes expenditures administered by the Division of Community Development.

3/ Projected annual average for the period 1971-1983.

TRINIDAD AND TOBAGO
PUBLIC EXPENDITURE ON EDUCATION BY LEVELS
(TT \$ thousands and percentages)

	<u>1967</u>		<u>1968</u>		<u>1969</u>		<u>1970</u>	
	<u>Amount</u>	<u>% of Total</u>	<u>Amount</u>	<u>% of Total</u>	<u>Amount</u>	<u>% of Total</u>	<u>Amount</u>	<u>% of Total</u>
A. <u>RECURRENT EXPENDITURE</u>								
1. Primary	24,779	56.6	26,320	56.9	27,155	54.3	27,996	52.5
2. Secondary General	8,058	18.4	8,711	18.9	10,063	20.1	11,355	21.3
3. Vocational and Technical	1,402	3.2	1,631	3.5	1,991	4.0	1,777	3.3
4. Teacher Training	836	1.9	889	1.9	977	2.0	1,005	1.9
5. University	5,963	13.6	5,702	12.3	5,693	11.4	6,427	12.0
6. Adult Education	120	0.3	207	0.4	179	0.4	193	0.4
7. Administration and other expenses	2,612	6.0	2,820	6.1	3,921	7.8	4,582	8.6
8. TOTAL RECURRENT	43,770	100.0	46,280	100.0	49,979	100.0	53,335	100.0
B. <u>CAPITAL EXPENDITURE</u>								
1. Primary	1,158	23.0	1,209	12.2	999	19.0	2,270	25.8
2. Secondary General	565	11.2	616	6.2	668	12.7	3,315	37.6
3. Vocational and Technical	211	4.2	18	0.2	78	1.5	40	0.5
4. Teacher Training	163	3.2	914	9.2	43	0.8	270	3.1
5. University	2,904	57.6	6,961	70.1	3,390	64.4	2,466	28.0
6. Adult Education	-	-	-	-	-	-	-	-
7. Administration and other expenses	39	0.8	210	2.1	84	1.6	447	5.0
8. TOTAL CAPITAL	5,040	100.0	9,928	100.0	5,262	100.0	8,808	100.0
C. <u>TOTAL PUBLIC EXPENDITURE ON EDUCATION</u>								
1. Primary	25,937	53.1	27,529	49.0	28,154	51.0	30,266	48.7
2. Secondary General	8,623	17.7	9,327	16.6	10,731	19.4	14,670	23.6
3. Vocational and Technical	1,613	3.3	1,649	2.9	2,069	3.7	1,817	2.9
4. Teacher Training	999	2.0	1,803	3.2	1,020	1.8	1,275	2.1
5. University	8,867	18.2	12,663	22.5	9,083	16.5	8,893	14.3
6. Adult Education	120	0.2	207	0.4	179	0.3	193	0.3
7. Administration and other expenses	2,651	5.5	3,030	5.4	4,005	7.3	5,029	8.1
8. TOTAL PUBLIC EXPENDITURE ON EDUCATION	48,810	100.0	56,208	100.0	55,241	100.0	62,143	100.0

Source: Ministry of Education.

TRINIDAD AND TOBAGO

PROJECTION OF PUBLIC EXPENDITURE ON EDUCATION, 1971-1983

	<u>Student Places Required</u> 1971-1983			<u>Estimated Unit Cost</u> <u>per Student Place</u> (TT\$) ^{1/}	<u>Total Investment in</u> <u>New Student Places</u> (e) = (a) x (d)	<u>Conversion, Rebuilt</u> <u>and Repairs</u> (f)	<u>Public Capital Expenditure</u> <u>on Education by Levels 1971-1983</u> (g) = (e) + (f)	<u>Public Recurrent Expenditure</u> <u>on Education by Levels in 1983</u> ^{2/} (h)
	<u>New</u>	<u>Conversion</u>	<u>Total</u>					
	(a)	(b)	(c) = (a) + (b)	(d)				
1. Primary	55,000	91,000	146,000	1,000	55.0	20.0	75.0	55
2. Junior Secondary	30,000	13,640	43,640	1,650	49.5	16.6	66.1	28
3. Senior Secondary	10,300	19,700	30,000	1,850	19.1	19.3	38.4	26
4. Teacher Training	880	-	880	2,050	1.8	-	1.8	2
5. Vocational	6,000	-	6,000	3,400	20.4	-	20.4	20
6. Technical	836	1,700	2,536	3,900	3.3	0.5	3.8	3
7. University	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	17
8. Administration and other expenses					8.3	-	8.3	10
9. Total (rounded figures)	103,000	126,000	229,000		157.4	56.4	<u>213.8</u>	<u>161</u>
						- Annual Average 1971-83	<u>17.8</u>	
						- % of Projected Total Government Capital Expenditure -1971-83	10.5%	

Source: Locally available data; Staff Estimates.

^{1/} Including furniture and equipment.

^{2/} Assuming average salary increase of 3% p.a. and 5% p.a. for academic and technical teachers, respectively.

TRINIDAD & TOBAGO

ENROLLMENT, OUTPUT, ACCOMMODATIONS IN PROJECT SCHOOLS

<u>Institutions</u>	<u>Number</u>	<u>Level</u>	<u>Course Length (Years)</u>	<u>Total Enrollments</u>	<u>Annual Output</u>	<u>Pupil:Teacher Ratio</u>	<u>Gross Area per Student Place</u>	<u>Use Factors ^{2/}</u>		
								<u>Classrooms</u>	<u>Practical Rooms</u>	<u>Number Weekly Periods</u>
1. Junior Secondary Schools	6	Secondary (Grades 6-8)	3	10,560	3,520	31:1	65 ^{1/}	82	75	60
2. Combined Junior/Senior Secondary Schools	4	Secondary (Grades 6-10)	5	2,740	1,010 ^{3/}	27:1	59	89	67	30
3. Senior Comprehensive Schools	3	Secondary (Grades 9-12)	4	3,600	1,800 ^{4/}	21:1	67	90	84	35
4. Teacher Training College	1	Secondary (Grades 11-12)	2	440	200	20:1	78	87	78	35
5. Technical Institute	1	Post-Secondary (Grades 11-13)	2 -3	1,690	490	15:1	112	72	61	35
6. Farmer Training Center	1	Adult	1-2 weeks	960	960	8:1	298			

^{1/} In square feet.

^{2/} As a percentage of maximum utilization (weighted averages).

^{3/} 720 from junior cycle and 290 from senior cycle (Form V).

^{4/} 1470 from V and 330 from Form VI.

TRINIDAD AND TOBAGO
 SAN FERNANDO TECHNICAL INSTITUTE
PLANNED INTAKE, ENROLLMENT AND OUTPUT BY SPECIALIZATION

<u>Courses</u>	<u>Course Length (Years)</u>	<u>Intake</u>			<u>Enrollment</u>			<u>Output ^{1/}</u>		
		<u>Full-Time</u>	<u>Part-Time</u>	<u>Total</u>	<u>Full-Time</u>	<u>Part-Time</u>	<u>Total</u>	<u>Full-Time</u>	<u>Part-Time</u>	<u>Total</u>
Mechanical	3	60	60	120	150	140	290	40	30	70
Electrical	3	30	30	60	75	70	145	20	15	35
Building	3	60	60	120	150	140	290	40	30	70
Draftsman	2	60	60	120	110	105	215	42	34	76
Business Management	2	30	30	60	55	52	107	21	17	38
Food and Nutrition	2	15	15	30	27	26	53	10	8	18
Clothing and Textile	2	15	15	30	27	26	53	10	8	18
Laboratory Technician	3	-	30	30	-	70	70	-	15	15
Electronics	3	30	30	60	75	70	145	20	15	35
Secretarial	2	90	90	180	165	157	322	65	50	115
<u>Total</u>		<u>390</u>	<u>420</u>	<u>810</u>	<u>834</u>	<u>856</u>	<u>1690</u>	<u>268</u>	<u>222</u>	<u>490</u>

^{1/} Estimated wastage: 15% per year full-time courses; 25% per year part time courses.

TRINIDAD AND TOBAGO
PROJECT COSTS BY TYPE OF EXPENDITURE

	TT\$ (millions)			US\$ (millions)			% of Total
	<u>Local</u>	<u>Foreign</u>	<u>Total</u>	<u>Local</u>	<u>Foreign</u>	<u>Total</u>	
1. Construction							
Academic and Communal Facilities	11.20	5.51	16.71	6.05	2.98	9.03	50
Boarding Facilities	0.03	0.02	0.05	0.02	0.01	0.03	...
Staff Housing	-	-	-	-	-	-	-
Site Development	1.68	0.83	2.51	0.91	0.45	1.36	7
Professional Services	<u>1.16</u>	<u>0.77</u>	<u>1.93</u>	<u>0.62</u>	<u>0.42</u>	<u>1.04</u>	<u>6</u>
Sub-Total	14.07	7.13	21.20	7.60	3.86	11.46	63
2. Furniture	0.76	0.76	1.52	0.41	0.41	0.82	5
Equipment	0.17	3.28	3.45	0.09	1.77	1.86	10
Technical Assistance ^{1/}	<u>0.25</u>	<u>1.05</u>	<u>1.30</u>	<u>0.13</u>	<u>0.57</u>	<u>0.70</u>	<u>4</u>
Sub-Total	1.18	5.09	6.27	0.63	2.75	3.38	19
3. Contingencies	3.88	2.28	6.16	2.10	1.23	3.33	18
TOTAL PROJECT COST	<u>19.13</u>	<u>14.50</u>	<u>33.63</u>	<u>10.33</u>	<u>7.84</u>	<u>18.17</u>	<u>100</u>
4. Interest during Construction		2.88	2.88		1.56	1.56	
GRAND TOTAL	<u>19.13</u>	<u>17.38</u>	<u>36.51</u>	<u>10.33</u>	<u>9.40</u>	<u>19.73</u>	

^{1/} Includes technical assistance to be provided by CIDA (US\$0.20 million, of which US\$0.16 million represents the estimated foreign exchange component).

TRINIDAD & TOBAGO - CONTINGENCY ALLOWANCES
(US\$ 000's)

	Site Development		Buildings		Furniture		Equipment		Professional Services		Technical Assistance		TOTAL
	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	
Allowances for Physical Increases	15%	15%	15%	15%	10%	10%	10%	10%	-	-	-	-	-
Allowances for Price Increases	13%	8%	13%	8%	8%	6%	5%	6%	6%	8%	11%	11%	-
Total	28%	23%	28%	23%	18%	16%	15%	16%	6%	8%	11%	11%	-
Total Cost Before Contingencies	910	448	6,068	2,989	409	410	93	1,772	625	417	127	568	14,836
Contingencies													
Physical Increases -	137	67	910	448	41	41	9	177	-	-	-	-	1,830
Price Increases -	118	36	789	239	33	25	5	106	38	33	14	63	1,499
Total	255	103	1,699	687	74	66	14	283	38	33	14	63	3,329
TOTAL	1,165	551	7,767	3,676	483	476	107	2,055	663	450	141	631	18,165

TRINIDAD AND TOBAGO

UNIT CAPITAL COSTS IN NEW PROJECT INSTITUTIONS ^{1/}

Type of Facilities	Gross Area M ²	Per Student Place (in US \$)				Previous Bank Projects	
		Construction	Furniture	Equipment	Total	Median Unit Cost (US \$) ^{2/}	Median Construct- ion area per Student Place (m ²)
I. ACADEMIC AND COMMUNAL							
Junior Secondary Schools	6.0	729	60	89	878	}	648
Combined Junior/Senior Secondary Schools	5.5	741	54	110	905		
Senior Comprehensive Schools	6.2	800	61	125	986		
Teacher Training College	7.2	822	72	214	1,108	1,047	7.2
Technical Institute	10.4	1,439	109	548	2,096	2,416	11.8
Farmer Training Center	18.4	2,090	182	691	2,963	2,318	12.7
II. BOARDING							
Farmer Training Center	9.3	1,057	234	-	1,291	652	8.4
III. FARMER TRAINING MOBILE UNITS				24,000	24,000 ^{3/}	24,930 ^{4/}	

^{1/} Professional Services, cost of land and contingencies not included.

^{2/} 1970 prices.

^{3/} Cost per Training Unit.

^{4/} Average unit cost in three projects (Somalia 247-SO; Kenya 185-KE; Chile 666-CH).

TRINIDAD & TOBAGO - PROJECT IMPLEMENTATION AND EXPENDITURE SCHEDULE 1/

(US\$ MILLIONS)

IMPLEMENTATION SCHEDULE	YEARS	1				2				3				4				5				6			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
CONSTRUCTION	US\$ Millions																								
Junior Secondary Schools	3.85	:::	#**	***	*+\$	\$=X	XXX	XXX	XXX	XXX	XXV	VVV	VVV	VVV	VV	VVV	VVV	VVV	VV	XXX	XXX	XXV	VVV	VV	
Phase I (#104 & 121)		:::	#**	***	*+\$	\$=X	XXX	XXX	XXX	XXX	XXV	VVV	VVV	VVV	VV	VVV	VVV	VVV	VV	XXX	XXX	XXV	VVV	VV	
Phase II (#103, 110 & 123)		:::	#**	***	*+\$	\$=X	XXX	XXX	XXX	XXX	XXV	VVV	VVV	VVV	VV	VVV	VVV	VVV	VV	XXX	XXX	XXV	VVV	VV	
Phase IV (#113)		:::	#**	***	*+\$	\$=X	XXX	XXX	XXX	XXX	XXV	VVV	VVV	VVV	VV	VVV	VVV	VVV	VV	XXX	XXX	XXV	VVV	VV	
Jr./Sr. Secondary Schools	2.03																								
Phase IV (#501, 502, 503 & 504)																									
Senior Comprehensive Schools	2.88																								
Phase III (#203, 206 & 209)																									
Teacher Training College	0.36																								
Phase I (#401)																									
Technical Institute	1.20																								
Phase II (#601)																									
Farmer Training Center	0.10																								
Phase I (#801)																									
Total	10.42																								
TECHNICAL ASSISTANCE 2/																									
Specialist (219 man months)		-	-	18	18	8	8	8	9	3	3	3	3	10	10	10	12	15	15	15	15	9	9	9	9
Fellowships (126 man months)		-	-	15	15	3	3	3	3	6	6	6	6	9	9	9	9	6	6	6	6	-	-	-	-
EXPENDITURE SCHEDULE																									
Construction	10.42	-	-	-	-	0.02	0.19	0.28	0.40	0.40	0.67	0.50	0.72	1.03	1.12	0.94	0.72	0.92	0.46	0.53	0.56	0.44	0.46	0.01	0.05
Furniture	0.82	-	-	-	-	-	0.01	-	0.07	0.06	-	-	0.08	0.08	0.10	0.07	0.08	0.07	-	-	0.15	0.05	-	-	-
Equipment	1.86	-	-	0.04	0.03	-	0.02	-	0.13	0.12	-	-	0.23	0.23	0.24	0.15	0.15	0.15	-	-	0.27	0.10	-	-	-
Professional Services	1.04	-	0.01	0.02	0.03	0.06	0.03	0.05	0.07	0.07	0.06	0.04	0.07	0.09	0.10	0.08	0.07	0.03	0.05	0.02	0.02	0.01	0.04	0.01	0.01
Technical Assistance	0.70	-	-	0.06	0.06	0.02	0.03	0.02	0.03	0.01	0.01	0.01	0.02	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.05	0.02	0.03	0.03	0.03
Sub-Total	14.84	-	0.01	0.12	0.12	0.10	0.28	0.35	0.70	0.66	0.74	0.55	1.12	1.46	1.59	1.28	1.06	1.21	0.56	0.59	1.05	0.62	0.53	0.05	0.09
Unallocated 3/	4.89	-	0.02	0.02	0.02	0.02	0.02	0.03	0.05	0.03	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.20	0.66	0.69	0.69	0.61	0.64	
PROJECT TOTAL	19.73	-	0.03	0.14	0.14	0.12	0.30	0.35	0.73	0.69	0.77	0.59	1.17	1.52	1.66	1.36	1.15	1.31	0.76	1.25	1.74	1.31	1.22	0.66	0.73
PROJECT TOTAL (ROUNDED)	19.7	-	0.03	0.13	0.14	0.12	0.30	0.38	0.73	0.69	0.75	0.59	1.17	1.52	1.66	1.36	1.15	1.31	0.76	1.25	1.74	1.31	1.22	0.66	0.73
LOCAL FINANCING 2/	10.3	-	0.01	0.06	0.07	0.06	0.16	0.20	0.40	0.38	0.40	0.31	0.64	0.82	0.90	0.72	0.60	0.70	0.38	0.65	0.93	0.68	0.62	0.29	0.32
IBRD FINANCING (47%)	9.3	-	0.02	0.06	0.06	0.06	0.13	0.18	0.32	0.31	0.34	0.28	0.51	0.70	0.75	0.64	0.54	0.60	0.38	0.60	0.81	0.63	0.60	0.37	0.41

1/ Implementation starts at date of effectiveness.

2/ Includes technical assistance to be provided by CIDA (US\$0.20 million), of which US\$0.16 million represents the estimated foreign exchange component. This accounts for the difference between the total foreign exchange cost of the project and the proposed Bank Loan.

3/ Contingencies includes interest during construction.

LEGEND:

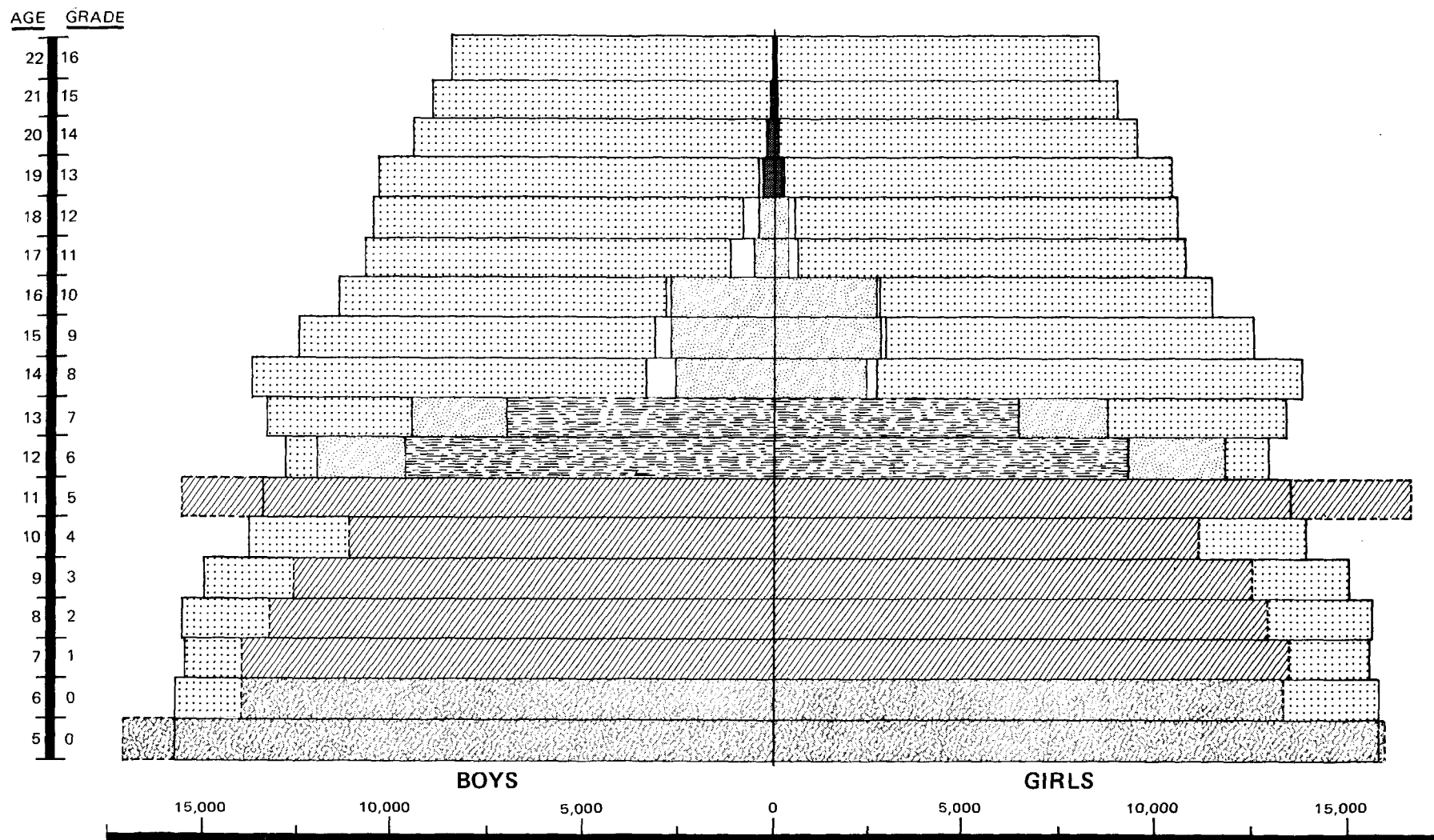
: Selection and appointment of consultants	\$ Tendering of bids
# Survey of sites	= Review of bids and award of contracts
* Design and construction document phase	X Construction phase
+ Review of design and construction documents	V Guarantee phase

TRINIDAD AND TOBAGO - ESTIMATED SCHEDULE OF DISBURSEMENTS
(US \$ Millions)

<u>Quarter 1/</u>	<u>Disbursements</u>	<u>Accumulated Disbursements</u>	<u>Undisbursed Balance</u>
1	-	-	9.30
2	-	-	9.30
3	0.02	0.02	9.28
4	0.06	0.08	9.22
5	0.06	0.14	9.16
6	0.06	0.20	9.10
7	0.13	0.33	8.97
8	0.18	0.51	8.79
9	0.32	0.83	8.47
10	0.31	1.14	8.16
11	0.34	1.48	7.82
12	0.28	1.76	7.54
13	0.51	2.27	7.03
14	0.70	2.97	6.33
15	0.75	3.72	5.58
16	0.64	4.36	4.94
17	0.54	4.90	4.40
18	0.60	5.50	3.80
19	0.38	5.88	3.42
20	0.60	6.48	2.82
21	0.81	7.29	2.01
22	0.63	7.92	1.38
23	0.60	8.52	0.78
24	0.37	8.89	0.41
25	0.41	9.30	-

1/ Starting from date of effectiveness.

TRINIDAD AND TOBAGO: EDUCATIONAL PYRAMID 1970 BY AGE AND LEVEL OF EDUCATION /1



Total Population in Age Group

Primary

Secondary General

Higher Education

Pre-School

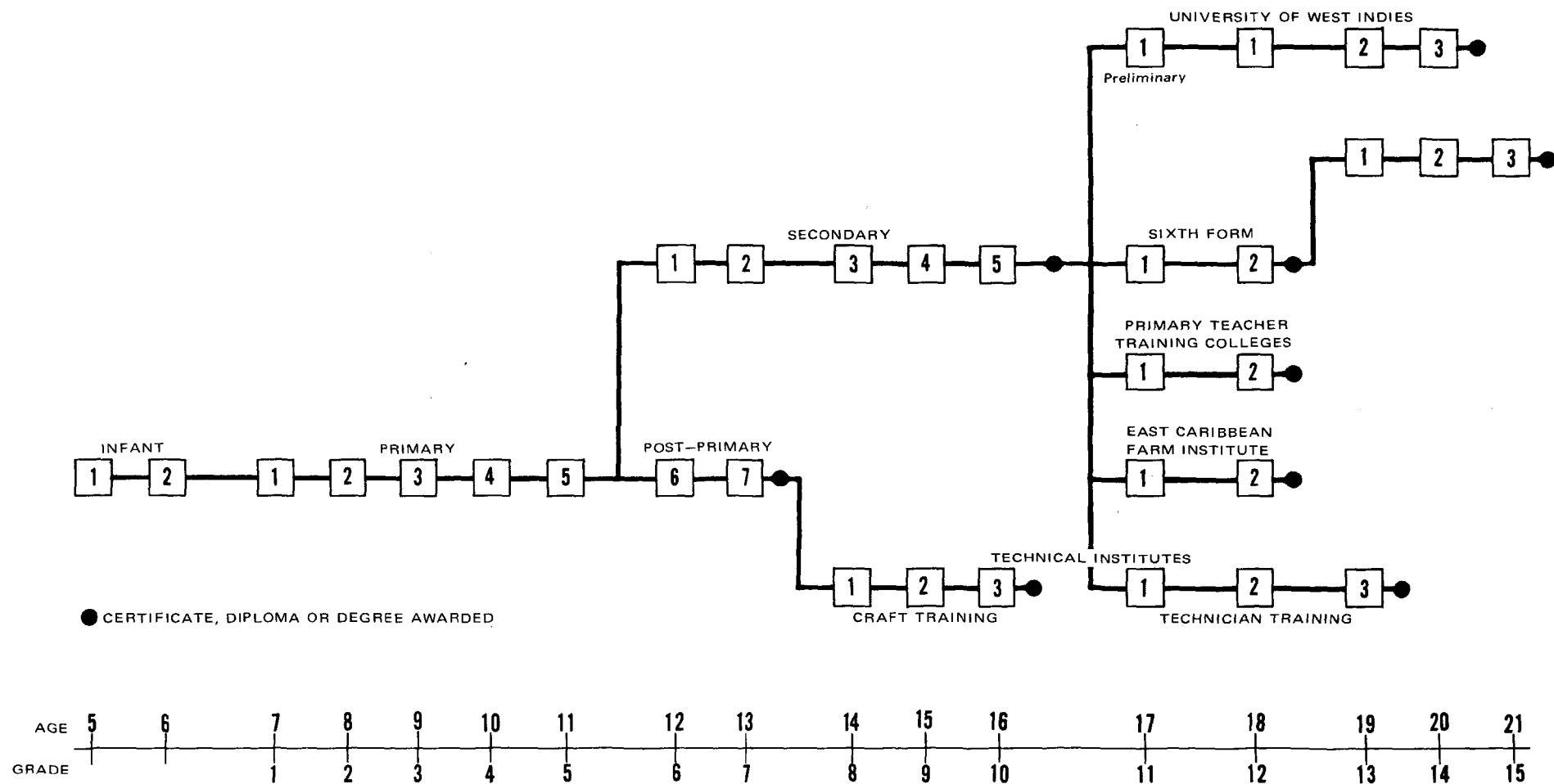
Post-Primary and Intermediate

Vocational, Technical and Teacher Training

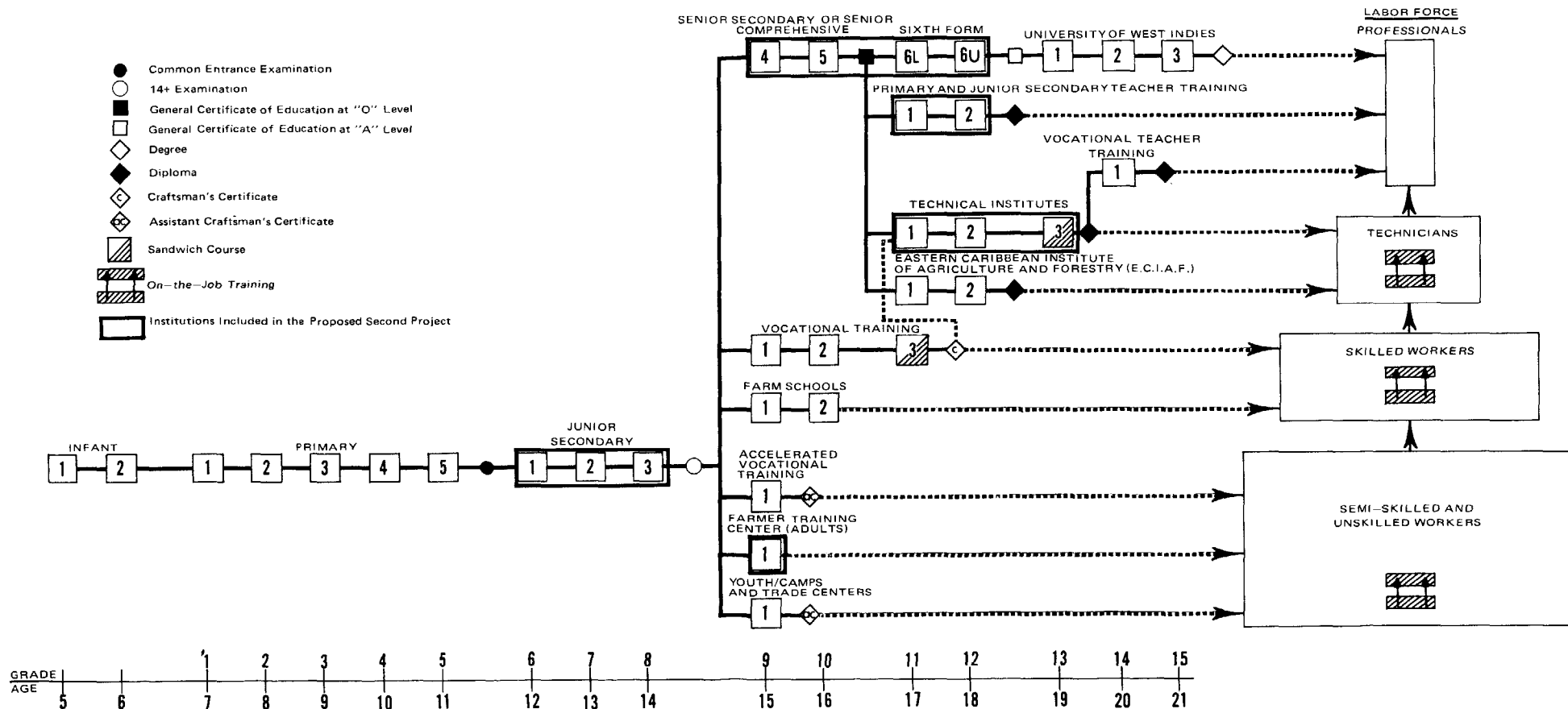
/1 Public Schools only.

World Bank-6801

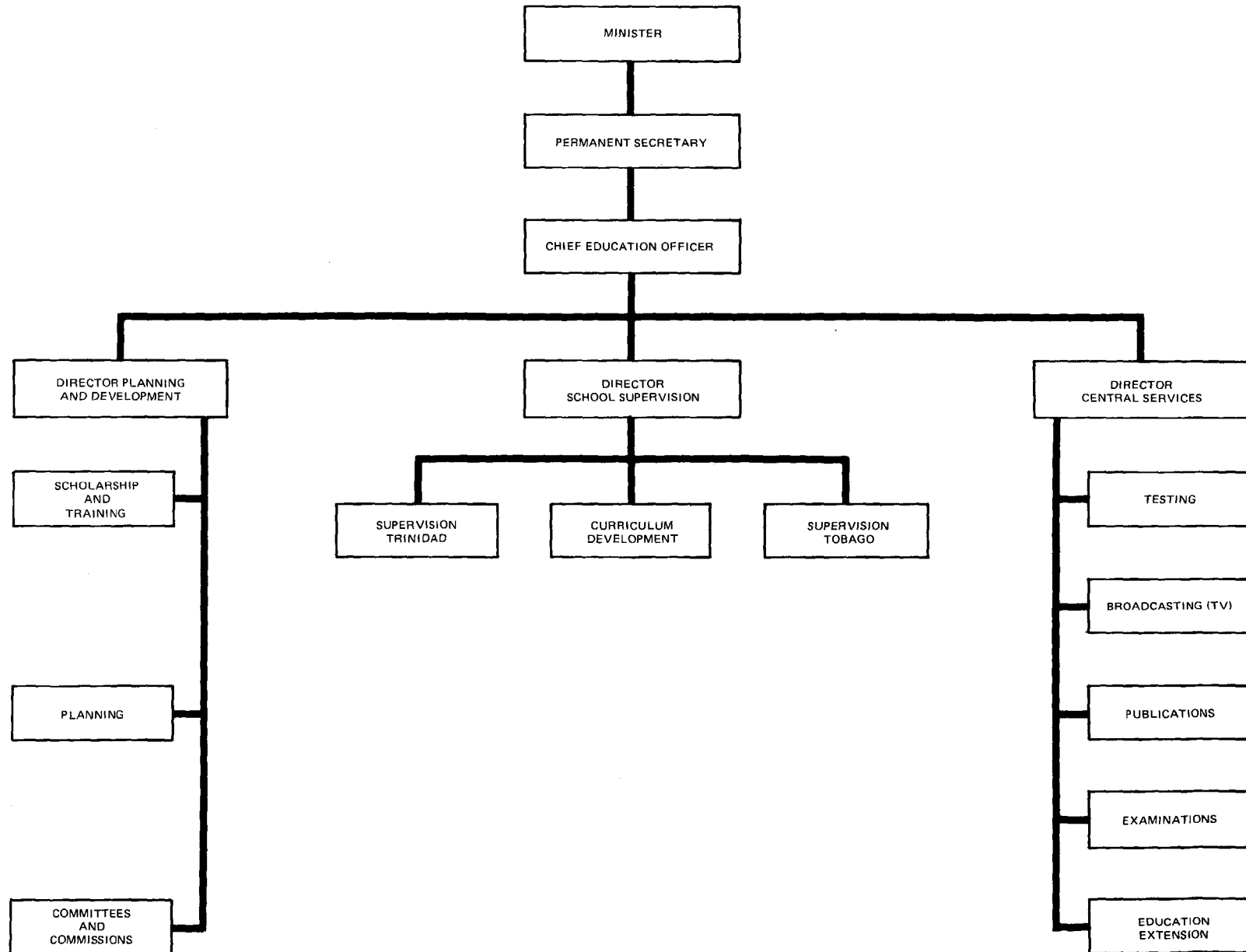
TRINIDAD AND TOBAGO: STRUCTURE OF THE TRADITIONAL EDUCATION AND TRAINING SYSTEM



TRINIDAD AND TOBAGO: REFORMED STRUCTURE OF THE EDUCATIONAL AND TRAINING SYSTEM



TRINIDAD AND TOBAGO
ORGANIZATION OF THE MINISTRY OF EDUCATION AND CULTURE 1972



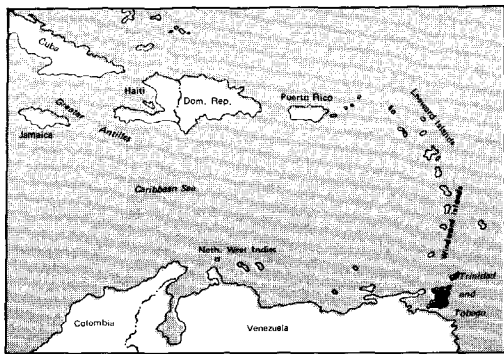
TRINIDAD AND TOBAGO
STRATEGY OF IMPLEMENTATION OF THE EDUCATIONAL REFORM 1968–1983 /1

LEVEL OF EDUCATION	ACADEMIC YEARS	← PHASE I →					← PHASE II →					← PHASE III →				
		1968/ 1969	1969/ 1970	1970/ 1971	1971/ 1972	1972/ 1973	1973/ 1974	1974/ 1975	1975/ 1976	1976/ 1977	1977/ 1978	1978/ 1979	1979/ 1980	1980/ 1981	1981/ 1982	1982/ 1983
1. PRIMARY SCHOOLS							○									○
2. JUNIOR SECONDARY SCHOOLS		○										○				
3. SENIOR COMPREHENSIVE SCHOOLS		○										○				
4. VOCATIONAL EDUCATION							○									○
5. TEACHER TRAINING		○										○				
6. TECHNICAL EDUCATION							○									○
7. ADULT EDUCATION (ACCELERATED TRAINING AND RETRAINING)							○									○
8. CULTURE, LIBRARY SERVICES AND EDUCATIONAL BROADCASTING							○					○				
9. CENTRAL SERVICES AND ADMINISTRATION		○				○										

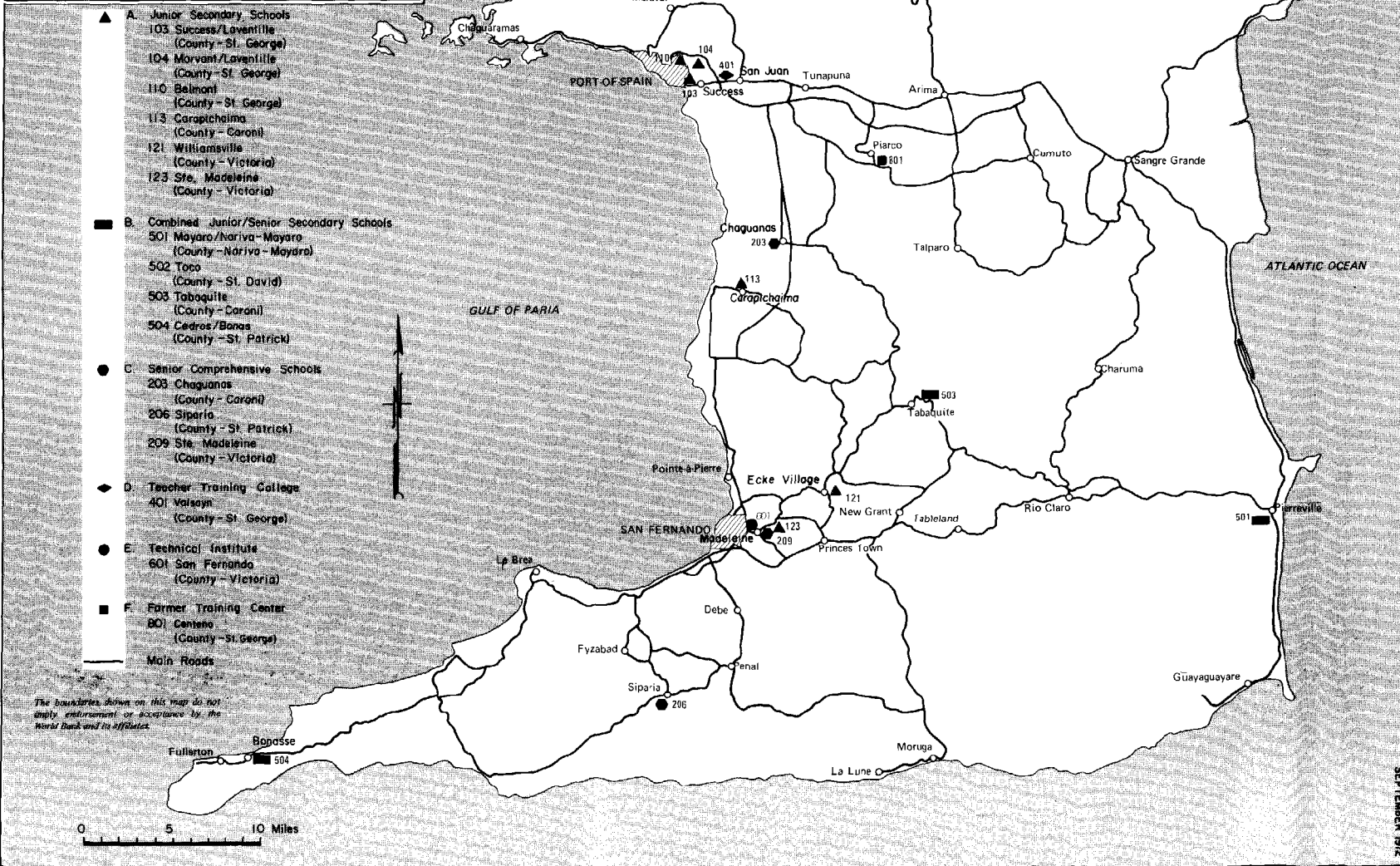
^{/1} AS OUTLINED IN THE DRAFT EDUCATIONAL PLAN 1968–1983

○ — IMPLEMENTATION STARTS

— ○ IMPLEMENTATION COMPLETED



TRINIDAD AND TOBAGO SECOND EDUCATION PROJECT



TRINIDAD and TOBAGO
FIRST EDUCATION PROJECT

