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INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
INTERNATIONAL DEVELOPMENT ASSOCIATION

Public Disclosure Authorized

APPRAISAL OF A
SECOND EDUCATION PROJECT
IN
MALAYSIA

March 9, 1972

Education Projects Department

CURRENCY EQUIVALENTS

USED IN THIS REPORT

M \$ 1.00 = US\$ 0.35
US\$ 1.00 = M \$ 2.82

MEASURES

1 mile = 1.6093 km
1 acre = 0.4047 hectares

FISCAL YEAR

January 1st - December 31st

APPRAISAL OF A SECOND EDUCATION PROJECT IN MALAYSIA

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This report is based on the findings of an appraisal mission which visited Malaysia during September/October, 1971. The mission consisted of Messrs. G. Pennisi (economist) S. Futagami (mass media specialist), F. Gamble (general educator), R. Welter (architect), of the Bank and Messrs. M. Krohn (technical educator, ILO) and D. Osborne (university science specialist, consultant).

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MALAYSIA

BASIC DATA - 1970

Population	11.1 million
Population Growth Rate	3.1% p.a.
Employment (West Malaysia only)	2.9 million

Education

Enrollments: Assisted Schools

Primary education (Grades 1 - 6) - ratio of enrolled to age group 6 - 11	90%
Lower secondary education (Grades 7 - 9) - ratio of enrolled to age group 12 - 14	50%
Upper secondary general education (Grades 10 - 11) - ratio of enrolled to age group 15 - 16	20%
Upper secondary technical and vocational education - ratio of enrolled to age group 15 - 16	1%
Post-secondary general education (Grades 12 - 13) - ratio of enrolled to age group 17 - 18	4%
Higher education - ratio of enrolled to age group 18 - 21	1.5%

Private Schools

Ratio of private primary enrollment to assisted primary enrollment	1%
Ratio of private secondary enrollment to assisted secondary enrollment	8%

Expenditures:

Ministry of Education recurrent expenditure as a percentage of Central government budget	M\$ 476.8 million 18.6%
National educational expenditure as a percentage of GNP	M\$ 652 million 5.4%
of which government	5%
private	0.4%

APPRAISAL OF A SECOND EDUCATION PROJECT IN MALAYSIA

SUMMARY AND CONCLUSIONS

- i. This report appraises a second education project in Malaysia for which a loan of US\$15.5 million is proposed.
- ii. The major goals of Malaysia, a multiracial country of 11 million, are to strengthen national unity and to accelerate growth and modernization of the economy, by encouraging labor intensive programs in industry and services and fostering diversification of agriculture. The education system, although highly developed in terms of enrollments, has begun only recently to reflect these social and economic needs and some problems are not yet fully resolved, e.g., educational opportunities differ greatly between urban and rural areas and there is still an excessive emphasis on academic courses. In addition, little use is made of modern educational methods and the level of staff qualification throughout the system requires improvement. Partly due to these problems, the country faces a shortage of skilled manpower and a growing surplus of unsuitably educated labor force.
- iii. A first education project, aided by a Bank loan of \$8.8 million in 1969, is progressing satisfactorily. It is assisting the expansion of technical, vocational and agricultural education. As a part of this project the Government had promised to produce a long-term educational development plan which would aim at gradually aligning the education system with the socio-economic needs of the country and at reducing the imbalance between general and technical/vocational education and in between rural and urban areas. This plan has now been formulated and on this basis it has been possible to prepare a second and broader project.
- iv. The educational strategy under this new plan aims at strengthening national unity, meeting manpower requirements and giving proper emphasis to science and technology. To achieve these objectives, the government intends to consolidate the educational system (which is at present segmented by language and race); to achieve gradually universal lower secondary education; to place more emphasis on and rationalize technical and vocational training; to expand and improve the university system; and to modernize curricula and teaching methods at all levels.
- v. The proposed project would assist in the implementation of this strategy by providing facilities for: (a) developing new curricula and instructional techniques; (b) expanding technical and vocational education; and (c) training graduate science teachers and other high level manpower. Specifically, it would provide buildings, furniture and equipment for:
 - An Educational Development Center;
 - Educational television;

- One technical and seven vocational schools; and
- The Science Schools of the University of Penang.

vi. A project unit already established in the Ministry of Education would be responsible for the implementation and overall supervision of the project. Contracts for civil works, furniture and equipment would be awarded on the basis of international competitive bidding. It is likely that all civil works contracts would be awarded to local contractors. Construction would be completed within four years of the effective date of the Loan Agreement. Local manufacturers of furniture and equipment would be awarded a margin of preference equivalent to the existing customs duties applicable to competing imports or 15% of the c.i.f. price, whichever is the lower.

vii. The total project cost is estimated at US\$28.4 million. The proposed Bank loan would meet the foreign exchange component of the project (US\$14.6 million) and the local currency portion (US\$0.9 million) of the ex-factory cost of furniture and equipment which are likely to be procured locally.

viii. The project is suitable as a basis for a loan of US\$15.5 million to Malaysia.

I. INTRODUCTION

1.01 The first Bank loan to Malaysia for education was made in 1969 for an amount of US\$8.8 million. At that time a well defined education development strategy was lacking. Bank assistance was therefore limited to obvious high priority items, mainly in technical, vocational and agricultural education. Implementation of this project is proceeding satisfactorily. A long-term education plan has since been formulated, which a proposed second education project would assist in implementing.

1.02 Following a request from the Government for Bank financing, proposals for a second project were prepared with the assistance of UNESCO in July 1971 and appraised in September-October 1971 by a mission composed of Messrs. G. Pennisi (economist), F.C. Gamble (general educator), S. Futagami (mass-media specialist), R. Welter (architect) of the Bank and Messrs. M. Krohn (technical educator, ILO) and D. Osborne (university science specialist, consultant).

1.03 The new project would help in carrying out selected lines of the Malaysian education strategy, the broad aims of which are to strengthen national unity, meet manpower requirements and give proper emphasis to science and technology. The government intends to finance from its own resources the bulk of investments related most directly to promoting national unity, but the proposed project would also contribute towards this. The Bank project would introduce new courses and teaching methods, expand and improve technical and vocational education, and provide for training science teachers and other high level manpower.

II. THE SETTING

Socio-economic background

2.01 Malaysia, a multi-racial country of about 11 million, is separated into two parts (West Malaysia and East Malaysia) by the South China Sea. Some 44% of the population are Malays and 36% are Chinese. The remaining 20% are evenly divided between those of Indian origin and the indigenous races. About two-thirds of the population lives in rural areas. The population, growing now at about 3% p.a., reflects the very high birth rate of the late 1940's; consequently the working age population (15-64) is increasing rapidly. A family planning program was initiated in 1966 and the Bank has recently identified a project which may improve its effectiveness.

2.02 Employment largely follows racial lines; Malays predominate in small agricultural holdings and, together with the majority of those of Indian origin, serve as plantation workers, while Chinese are found mostly

in manufacturing, mining, construction and commerce. A main objective of the government since Independence in 1963 has been to reduce racial and income disparities between these groups, partly by upgrading the educational background of the rural Malays, so as to improve social conditions and productivity on the land and to prepare them for work in the modern sectors of the economy.

2.03 GNP has increased at over 5% p.a. in the last 15 years and at over 6% p.a. from 1965 to 1970. Economic growth has been accompanied by changes in the structure of the Malaysian economy, traditionally based on the exploitation of a rich endowment in natural resources (tin, rubber, timber and palm oil). Agriculture is still the mainstay of the economy but its relative importance is declining both in terms of output and employment. The share of mining in GNP and employment is also decreasing. At the same time, manufacturing is growing at well above 10% p.a. and represents 13% of GNP and 9% of total employment. The service sectors are very large: including construction, they represent about 50% of domestic production and 40% of total employment. The per capita income is now nearly US\$400, one of the highest in Asia.

Economic Development

2.04 The objectives of the First Malaysian Plan (FMP) 1966-1970, were to increase agricultural and industrial efficiency, stimulate an export-led growth, diversify production, and create new employment opportunities. The achievements have been mixed: production and income have grown beyond expectation but new investment particularly in the public sector has been slow and job creation has not matched the increase in the working age population.

2.05 Unemployment (exceeding 7% of the labor force in 1970) has reached a particularly high proportion among new entrants to the labor force: as much as 20% of the population in the 15-24 age group is unemployed and a growing number of these have completed general secondary education. A large number of those unemployed come from rural areas and have difficulty in being absorbed in the fast growing urban sectors. Along with a labor surplus, Malaysia faces serious skill shortages, partly caused by the unsuitability of the education and training system. The slow growth in investment and employment referred to in the preceding paragraph is partly due to the virtual stagnation of public investment since 1965, due in part to the shortage of technical and professional staff to plan and implement an adequate investment program; in 1969 the vacancy ratio for this category of manpower in government service was 30%. Private employers also find it difficult to recruit professionals, technicians and skilled workers. They pay high salaries to attract high level manpower and arrange special training programs to supplement the inadequate supply of skilled workers, thus making the development of industry and services more costly.

2.06 Consequently, the Second Malaysia Plan (SMP) 1971-1975, is directly geared to solving these problems of surplus of labor, shortage of skills and inequalities in employment and income. To assist job creation, the economic strategy of the SMP consists of: (a) encouraging labor-intensive programs in industry and services; (b) opening up new areas for land settlement; and (c) accelerating the diversification of agriculture. To supply skilled workers, the SMP aims at aligning education and training more closely with the needs of the economy. To reduce employment inequalities, the government intends to facilitate the entrance of the Malay population to the modern sectors of the economy.

Manpower Requirements

2.07 During the period 1970-1980, total employment is expected to increase from about three million to about four million and labor productivity by about 3% p.a. Employment in the rural sector is expected to increase by no more than 1.5% p.a. but in industry and services it is estimated to grow at about 4.5% p.a. In 1980 about 60% (50% in 1970) of total employment will be in urban related occupations. In order to achieve this growth and transformation of Malaysia's economy, it is necessary to improve the occupational distribution and the educational background of the labor force; in 1970 only 0.6% of total employment was at the professional level, compared with about 1.4% in Japan and the Philippines, and most skilled workers had received only on-the-job training. It is estimated that to improve productivity, employment of high level manpower should grow at about 9% p.a., reaching 1% of total employment by 1980, and that at least one-third of the skilled workers entering the labor force should receive either pre-service or apprenticeship training. On this basis, manpower requirements over the period 1970-1980 for the major occupational categories are estimated as follows:

Manpower Requirements (1970-1980) due to:

<u>Occupational Category</u>	<u>Expansion</u>	<u>Attrition</u>	<u>Total</u>
Professionals	26,000	6,000	32,000
Sub-professionals	40,000	20,000	60,000
White collar workers	100,000	60,000	160,000
Skilled workers	190,000	70,000	260,000

2.08 A comparison between the output of the educational system required to meet the estimated manpower needs between 1970 and 1980 and the projected outflow over the same period, shows that there will be shortages of about 7,000 at university level, 14,000 from junior and technical colleges and 28,000 from vocational training institutions, but there will be an oversupply from upper general secondary schools of about 145,000.

2.09 These figures indicate that, while the projected supply of general secondary school graduates is beyond the absorptive capacity of the labor market as it now appears, shortages of university, technical and vocational training graduates may still exist in 1980. On-the-job training of graduates from general secondary schools will have to make up for the insufficient supply from the vocational schools, even after an expansion of vocational education, and the general secondary school curriculum is therefore being revised to include some practical training.

III. THE EDUCATION AND TRAINING SECTOR

The system and its problems

3.01 The education system (Chart 1 and Appendix) is well developed in many respects. About 90% of the 6-11 age-group is enrolled in primary schools (grades 1-6), 50% of the 12-14 age group in lower secondary (grades 7-9) and 20% of the 15-16 age group in the upper secondary grades 10-11 (Annex 1). Primary education, which together with lower secondary education is free, is now given in Malay, Chinese, English or Tamil but the use of English as a medium of instruction is being phased out and replaced by Bahasa Malaysia, the developing national language. Facilities and teachers' qualifications are generally good in urban areas and most primary school pupils complete the course. Secondary education is given in English, Malay or Chinese; academic standards are relatively high, especially in certain upper secondary schools. About 13,000 or some 1.5% of the 18-21 age group are enrolled in technical colleges and universities; here the quality of instruction is very good. A further 12,000 are receiving higher education abroad. Non-formal training, under various agencies, complements the formal education system. Private primary school enrollments are negligible; at the secondary level they amount to about 8% of those in assisted schools (government schools and government aided schools run by non-profit organizations).

3.02 Educational planning, although improving, requires strengthening, and cooperation among the agencies involved in education and training is not sufficiently effective. As a consequence, education planning has only recently begun to take into account manpower needs. Other problems are: (a) insufficient capacity for training manpower at the post-secondary level; (b) disparities of educational opportunities between urban and rural areas; (c) an excess of general education as against vocational and technical education; and (d) little employment of modern educational methods and inadequate preparation of staff in their use.

3.03 The lower secondary school curriculum has been broadened to include practical subjects but courses in other subjects need revision and modernization. At the upper secondary level (grades 10-11) about 95% of the enrollment follows general education courses and only 5% is in technical and vocational schools, despite the growing unemployment of school leavers and the shortage of skilled workers.

3.04 Throughout the education system little use is made of modern instructional methods, such as audio-visual aids. Laboratory work is done by the teachers and not by the pupils themselves. A beginning was made in 1968 to update science courses and teaching techniques but curriculum development is conducted in an uncoordinated fashion and in-service courses for teachers are too short to be effective. An adequate program to improve the quality of teaching is needed because, although about 90% of all teachers have had some form of teacher training and are regarded as qualified by government standards, the educational background of many of them is inadequate. Out of 55,000 teachers in primary schools, about 20,000 had had no secondary education before receiving their training. Only 3,000 of the 19,000 secondary school teachers are university graduates and only 800 of these are science graduates.

Education development

3.05 Malaysia's long-term education development strategy, spelt out in the Second Malaysian Plan (SMP) 1971-75, aims at these problems. Its major goals are:

- (a) To strengthen national unity. The government intends to consolidate the education system, at present divided into various segments by languages and races, and to equalize educational opportunities between urban and rural areas. This policy includes the phased adoption of Bahasa Malaysia as the main language of instruction, the gradual achievement of universal lower secondary education and the establishment of special secondary schools for rural areas.
- (b) To meet manpower requirements. It is intended to expand, improve and rationalize vocational, technical and university training. For technician and skilled worker training, this requires expanded facilities and improved cooperation by all the agencies involved, effective liaison with employers and a more practical orientation of courses. For the education and training of high level manpower, expansion and better distribution of responsibilities among the universities and improved control of fellowships for study abroad is required. Specifically, higher education institutions should provide larger numbers for managerial and technical occupations.
- (c) To provide general education with an adequate component of science and technology. For this, a larger supply of graduate science teachers is needed and to this end the government plans to expand and improve higher education. Curricula and teaching methods will be modernized and made more relevant to the Malaysian environment but better coordination between curriculum development programs is needed. These advances will be complemented by the use of new media including improved visual presentation of science, mathematics and other subjects.

3.06 At the primary level and lower secondary level overall enrollment growth is planned at 3.5% p.a. (5% p.a. over the period 1965-1970); this would allow universal basic education of nine years by about 1990. To begin the reorientation of education at early levels it is planned to improve in-service teacher training (para. 3.04) and to reform curricula, mainly in the fields of mathematics and science. The proposed project would complement these efforts by facilitating curriculum development and related in-service teacher training and by introducing educational television (ETV).

3.07 At the upper secondary level both quantitative and qualitative improvements are designed to align education more closely with manpower needs and to place more emphasis on science. In general secondary education (grades 10-11) it is planned to reduce the rapid growth of the past (17.7% p.a. from 1965 to 1970) to 7% p.a., and to introduce practical subjects and so begin to readjust the output to labor market needs. This output will still exceed needs over the decade but a lower rate of expansion is not considered feasible in view of the great increase in lower secondary enrollments from 1965 onwards. An even more marked slowdown, 6.6% p.a. from 1970 to 1980 as against 23% p.a. from 1965 to 1970, along with a better regional distribution of facilities, is planned for Form VI and Junior Colleges (grades 12-13) in order to adjust their output to university intake and to free resources for the expansion of technician training institutions (Annex 2).

3.08 Planned qualitative improvements include, firstly, the use of education television in primary and secondary education to assist in introducing new curricula and in promoting the use of the national language. Secondly, ten large residential secondary schools (grades 7-13) for 12,000 students are to be established in rural areas; these schools to be financed by the government (para. 1.03), will emphasize science and practical subjects and the curricula will relate to regional needs. This program will be evaluated with methodological assistance from Unesco and could constitute the beginning of an overall reform of secondary education. Finally, the government plans to improve the quality of secondary teaching by increasing the number of graduate teachers who by 1980 should represent 40% of all secondary teachers compared with 17% in 1970 (Annex 3). In addition to improving curriculum and ETV development, the proposed Bank project would assist in increasing the supply and the quality of graduate teachers of science for secondary education.

3.09 The targets in the SMP for secondary technical and vocational education, indicative of government's plans to align education more closely to manpower needs, show, during the period of the Plan, a 100% increase in enrollment in technical and vocational schools (grades 10-11), in technician training and in accelerated training under MARA* and the Ministry of Labor.

* MARA (Majlis Amanah Ra'ayat - Council of Trust for Indigenous People): a parastatal agency, under the Ministry of National and Rural Development, to promote economic and social development, particularly in the rural areas.

The expansion of technical and vocational education, assisted by the first Bank loan (12 schools) would be further helped by the proposed Bank project (8 schools). Courses are being revised to become more practically oriented; a National Industrial Training and Trade Certification Board, with the participation of Ministries, employers and labor organizations has been established; and, at the local level, the existing "tracer" system ^{1/} is being strengthened. In addition, a long-term plan is being prepared for the expansion of accelerated training and the coordination of training schemes with the formal education system.

3.10 At the university level the SMP focuses on expanding and rationalizing the system so that, as far as feasible, each university will specialize in a different field (e.g., agriculture, science, graduate studies); it is planned that enrollment in any one university will not exceed 8,000 students. Total university enrollment is to increase from 8,500 in 1970 to 20,000 in 1980 and it is also planned that about 60% of the 1975 intake will be in science, engineering and medicine. Within this framework, it is anticipated that new facilities will be provided for the University of Penang, which will concentrate on sciences. A reduction is envisaged in the University of Malaya total enrollment where graduate studies will be concentrated. An agricultural university is being established through up-grading an existing college for agricultural technicians. The project would assist in carrying out these plans for higher education by providing facilities for the Science Schools of the University of Penang.

Education Finance

3.11 Financial responsibility rests primarily with the Federal Government which finances entirely the capital and the recurrent expenditure of all assisted schools, both publicly and privately owned. More than 90% of enrollment in West Malaysia and Sabah is in assisted schools; in Sarawak 50% of the secondary students are in non-assisted schools. Assisted schools can be privately owned and also partially privately financed, but must conform to government standards and curricula. In these schools, primary and lower secondary **education is free; fees at other levels of education** are accompanied by a large bursary program. In 1970, the recurrent budget of the Ministry of Education was equivalent to about 19% of government total recurrent expenditure. Including expenditure under other Ministries and private expenditure, the total education effort of the country was estimated at about 5.4% of G.N.P. (Annex 4). Both these figures are high in comparison with other countries in Asia.

3.12 The growth in expenditure of the Ministry of Education has been about 8% p.a. from 1963 to 1970 but is expected to accelerate substantially in the immediate future due to a recent re-organization of the teaching service including an upward revision of salaries, bringing **them to the same level**

^{1/} A "tracer" system is a follow-up of graduates that includes job counselling and keeping of employment records and provides information used in adjusting the training programs to employment demands.

as those of other civil servants. The planned quality improvement will also require increased recurrent costs per student/year which, at US\$50 for primary education and US\$75 for secondary education, are low for a country of Malaysia's level of economic and educational development. It is therefore expected that the share of the Ministry of Education in total government recurrent expenditure will increase to 23% by 1975 and thereafter stabilize around that level (Annex 5). This fairly high ratio conforms to the government's set of priorities and can be maintained in view of the country's resources. Thus, from 1970 to 1980, the recurrent budget of the Ministry of Education is projected to increase, in 1970 prices, from M\$477 million to about M\$1,100 million. The recurrent expenditure generated by the proposed Bank project in 1980 would be about M\$20 million or some 3% of the additional cost.

3.13 Government capital expenditure on education over the First Malaysia Plan 1966-1970 amounted to M\$330 million or 8% of total public capital spending. The SMP allocates some M\$540 million (Annex 6) to public expenditure on education or 7.5% of total public development expenditure over the Plan period. High priority is given to improvement of general secondary education (34% of the total), and expansion of technical and vocational education (25%) and of the **university** system (16%). This pattern of planned expenditure is consistent with the policies described in paras. 3.06 - 3.10. Most of this capital expenditure will be financed domestically. It is expected, however, that capital assistance to agricultural education, including the development of an agricultural university (para. 3.10), will be given by the Asian Development Bank. In addition a number of multilateral (UNDP, Colombo Plan) and bilateral (U.K., New Zealand, Australia and Canada) agencies will provide technical assistance for implementing various parts of the Plan in the areas of vocational teacher training, curriculum development, and the provision of fellowships for Malaysian students to study abroad.

IV. THE PROJECT

Objectives

4.01 The proposed project would assist in implementing the Malaysian educational strategy (paras. 3.05 - 3.10) by: (a) **improving curriculum development** and in-service training of teachers; (b) introducing educational television; (c) expanding technical and vocational education; and (d) increasing the output and the quality of graduate science teachers and the supply of high level scientific manpower. It would consist of the construction furniture and equipment of:

	<u>Student Places</u>	<u>Boarding Places</u>	<u>Staff Housing Units</u>
Educational Development Center (EDC)	160	120	-
Educational Television	n.a. /1	n.a. /1	-
One technical and seven vocational schools (grades 10-11) /2	4,700	3,100	48
Science Schools of the University of Penang	3,140 /3	620	16
Total	8,000	3,840	64

/1 n.a. - Not applicable

/2 Grades 10-12 in East Malaysia

/3 Includes 500 student places in the Center for Educational Services for which only equipment would be provided.

Details of enrollment and staff requirements in the project schools are given in Annex 7. The proposed schedules of accommodation are functional and economical, e.g., utilization factors in the technical and vocational schools are estimated at 90% for classrooms and 75% for workshops, based on a 36-hour week.

Project Items

4.02 Educational Development Center (EDC). Quality improvement in education will require curriculum research and development, reform and evaluation at various educational levels. The government is strongly interested in these activities but they are now being undertaken in an ad hoc and uncoordinated fashion; the premises are inadequate (para 3.04). The present concentration of curriculum development is on science and mathematics at the primary and secondary levels and the programs are well conceived but in-service courses to train teachers for the new curricula are presently given in teacher training colleges during vacation, last only two weeks and are too short to be effective. Other subjects requiring revision are language, especially the teaching of Bahasa Malaysia, social sciences, home economics and practical subjects where present curricula are not entirely relevant to Malaysian needs.

4.03 The proposed project would provide construction furniture and equipment for an Educational Development Center (EDC) where curriculum development work would be carried out in a coordinated manner with necessary facilities. In-service courses in the new curricula would be provided

for about 160 practising teachers; hostel facilities for 120 are necessary to accommodate teachers coming from distant schools. The participation of these practising teachers in the Centers' activities would help to ensure the relevance of the work to actual conditions in the classroom. In addition, the Center would include facilities for activities closely related to curriculum development work, including a textbook evaluation unit, a textbook library and an audio-visual aids development unit. The inclusion of this unit in the EDC would ensure a close link between curriculum development and educational television. The Center would have a staff of 73 professional officers, of whom 30 would be working on curriculum development on secondment from schools. The units that would be brought together in the EDC have now about 50 professional officers of whom 15 are on secondment.

4.04 The full responsibilities of the EDC within the Ministry of Education are being studied by a government committee in charge of the re-organization of the Ministry (Appendix, para. 1). A five-year plan of operation of the EDC setting out its tasks, the development of its staff and technical assistance requirements together with sources of supply, has been received, in outline, by the Bank. During negotiations, assurances were given by the government that this plan will be finalized and sent to the Bank for comments within six months of the signing of the Loan Agreement.

4.05 Educational Television (ETV). Malaysian schools, mainly those in rural areas, are poorly equipped with audio-visual aids and a large number of the teachers are under-qualified (para. 3.04). These factors are an obstacle to the implementation of the new science and mathematics courses, where teaching can be greatly assisted by visual presentation, and to the consolidation of the system and the equalization of educational opportunities between areas and races. To assist and upgrade the teachers and keep them abreast of curriculum development, classroom instruction would be supplemented by educational television.

4.06 The proposed project would provide: (a) construction and part of the equipping of a new studio for program production; (b) about 5,500 receivers for use in primary and secondary schools; and (c) the supply of 25 video-tape recorders to teacher training colleges and institutes and to the State Audio-visual Aids Centers ^{1/}. The new studio would replace out-moded facilities that have been recently damaged by flood. Most of the studio equipment is either being granted under British aid or financed domestically. At full development, ETV programs are expected to cover about 500,000 primary and secondary students and require a total of some 10,000 receivers. Of this total fifty percent would be in assisted schools with substantial financial resources; these schools either already own TV sets or will purchase them from their own budgets. Therefore, the receivers provided under

^{1/} The 11 State Audio-visual Aids Centers coordinate at the local level the distribution and the use of audio-visual aids lent by the Ministry of Education to the schools.

the project would mainly be for rural schools (5,000) and for a replacement pool (500) for sets undergoing maintenance or repair. The supply of simple video-tape recorders to teacher training institutions and to the State Audio-visual Aids Centers would permit the pre-service and in-service training of teachers in the use of ETV.

4.07 The programs, which would be mainly concerned with science, mathematics, civics and languages, are being prepared by subject matter committees. Program producers have been trained with the assistance of CEDO (Center for Educational Development Overseas, a British aid agency); Radio TV Malaysia would provide the technical personnel. Adequate transmission time (full day-time transmission for five days or 40 hours per week) has been assured by Radio TV Malaysia and the Telecommunication Department of the Ministry of Works, Posts and Telegraphs. Detailed and satisfactory plans have been drawn up for the training of teachers and for a pilot scheme with feed-back from selected schools. The government intends to launch ETV in January, 1973, after having evaluated this pilot scheme during the latter part of 1972. The results of this evaluation would be made available to the Bank. There is an adequate maintenance network for the TV receivers in urban areas and the government intends to require **the suppliers to** maintain receivers in rural areas. During negotiations the government gave assurances that a plan for maintenance and repair of school TV sets, satisfactory to the Bank, will be sent to the Bank promptly after the signing of the Loan Agreement. The presentation of this plan will be a condition of disbursement for this project item.

4.08 Technical assistance for teacher training and specialist services for program production and evaluation are being provided by CEDO. It is expected that additional technical assistance will be provided by UNDP. The effectiveness of ETV would much depend on the support that ETV receives at the local level. The State Audio-visual Aids Centers are expected to play a vital role in training the teachers in the use of the new medium. These Centers are now staffed with part-time officers. During negotiations assurances were given by the government that a full time education mass-media officer will be appointed to each State Audio-visual Aids Center not later than January 1, 1973.

4.09 Technical-Vocational Schools. It is estimated that requirements for graduates from technical-vocational schools under the Ministry of Education and from technical-vocational training under other agencies would amount to about 100,000 during the period 1970-1980 and that the total supply would be some 75,000 including 8,000 graduates from the schools included in the proposed project. More specifically, with the 12 schools of the first Bank project and the 8 schools of the proposed project, the annual needs for commercial graduates (as they appear now) would be largely met, while there will still be a substantial shortage of industrial graduates. At present, however, it is not feasible to expand industrial training at a faster rate than that envisaged because of shortage of technical teachers and until the long-term detailed plan for accelerated training and of its coordination with the formal education sector has been finalized (para. 3.09).

4.10 The project would provide construction furniture and equipment for one technical and four vocational schools (grades 10-11) in West Malaysia and for three vocational schools (grades 10-12) in East Malaysia. A sufficient number of technical teachers, about 80 p.a. commencing in 1972, would be provided by the Technical Teacher Training College recently established with Canadian assistance. The vocational schools would give courses in seven industrial trades (machine shop practice, sheet metal and welding, motor mechanics, electricity, electronics, refrigeration and air-conditioning, and building construction) and in commerce. The vocational school in Sibul (East Malaysia) would also give short courses (three months) in navigation and marine engineering. In each school the curriculum would be adapted to regional needs and, in addition to the regular programs, short in-service training courses for workers already in employment would be organized in collaboration with local industries. In order to relate the type and quality of training more closely to local needs, to make the existing "tracer" system (para. 3.09) more comprehensive and to facilitate the provision of in-service courses, the government intends to include representatives of employers in each school Board. During negotiations, the government confirmed this intention.

4.11 A large number of boarding places (about 65% of the student capacity) is required to accommodate Malay students from rural areas and facilitate their future employment in the urban sectors of the economy in line with the government's policy of achieving more even racial balance in towns (paras. 2.02 and 2.06). Staff houses for school principals and caretakers are necessary owing to the residential character of the schools. In Tawau (Sabah) a limited number of housing for teachers is required due to acute housing shortage.

4.12 Science Schools of the University of Penang. To support the educational policy described in paras. 3.05 - 3.10 a total of about 6,000 graduate teachers of science is required over the period 1970-1980 (Annex 3). It is also estimated that a further 5,000 of the projected requirements for high level manpower during the decade would be for managerial and technical occupations requiring a scientific background. The output of science graduates from the University of Malaya, the National University and the Agricultural University is expected to total about 4,000 over the period 1970-1980 and it is estimated that some 1,700 students of science will return from abroad. It is planned that the Science Schools of the University of Penang would graduate over the decade about 2,200, and would therefore contribute significantly to reducing the severe shortage of graduate teachers and of other personnel with training in science. Shortages will still exist in the early 1980's but a faster expansion of science education at university level is not advisable because the projected annual supply of science graduates when the existing institutions operate at full capacity (about 1,100 p.a.) would be in line with the long-term annual requirements as they now appear.

4.13 The University of Penang, established in 1969, is provisionally accommodated in a teacher training college. The Schools of Natural Sciences (Physics and Mathematics, Chemistry and Biology), of Cultural and Community Studies and of Comparative Social Sciences are already functioning and have a combined enrollment of 700, of which about 400 are in sciences. In addition, a Center for Educational Services gives pedagogical training to future teachers enrolled in the various Schools of the university. The university plans to establish Schools of Applied Sciences and Pharmaceutical Science in the immediate future. Total enrollment in 1980 would be about 5,000 of whom 3,000 in sciences. About one-third of the enrollment should be boarders because of housing shortage in Penang.

4.14 The university is gradually moving to its new campus located in former military facilities. The Administration, the Center for Educational Services and the Schools of Cultural and Community Studies and of Comparative Social Science will use existing buildings that are being renovated. Residential accommodation for about 1,000 students will also be provided through renovation of existing facilities. The project would provide: (a) the construction and equipping of the Schools of Natural Sciences, Applied Sciences and Pharmaceutical Science and of communal academic facilities (a computer center, a library and an auditorium); (b) the construction and equipping of a residential hall for 500 students in the main campus, 120 boarding places for a field station of the School of Biology and housing units for the warden and 15 research fellows; (c) audio-visual equipment for the Center for Educational Services; and (d) financing of the architectural master plan.

4.15 The Science Schools would have a total enrollment of about 2,650, of whom 2,300 would be in the Schools of Natural Sciences. The Natural Sciences undergraduate course would last three years; it is, however, expected that at least 25% of the Natural Sciences students would take a fourth year course in pedagogy at the Center for Educational Services (para. 4.13). Only a small proportion (some 10%) of the students would enroll in graduate programs.

4.16 The School of Pharmaceutical Science, which would be the only one in the country, would use mostly the facilities of the other Science Schools available on campus and cooperate with the pharmaceutical laboratories (11 in 1970) of Penang. The university would establish the only School of Applied Science (e.g., metallurgy, rubber technology, food processing, polymer science) in the country; private industry, which has already endowed three professorships at the university, is expected to participate in the formulation of the programs and in the provision of part-time lecturers and internship schemes.

4.17 The communal facilities (computer center, library, auditorium) included in the project would serve the entire university. The library would provide seating capacity for some 1,800 students (or 34% of the enrollment planned for 1980) and for 100 academic staff members and the auditorium would seat about 2,500. The computer center would serve instructional purposes

and administration and - to a limited extent - research; the present computing facilities available in Penang are inadequate for administrative use and cannot be used for instructional purposes.

4.18 The University has already a core of highly competent academic and administrative staff and a well conceived staff development plan, including a scheme for overseas training of new staff members toward Ph.D. degrees and a program for research visits and in-service training abroad of existing staff. The implementation of this staff development plan started in 1970 and is proceeding satisfactorily. By 1980, about 90% of the academic staff will be Malaysian; the University intends to keep a small international component in its teaching staff.

Cost of the Project

4.19 General. Construction cost estimates have derived from recent school and university building costs in Malaysia. The average cost per square foot is estimated at about US\$4 for the technical and vocational schools included in the project and at US\$8 for the Science Schools of the University of Penang. Furniture and equipment cost estimates are reasonable; detailed lists would be prepared during the design stage and reviewed by the Bank before procurement.

4.20 The estimated costs and foreign exchange components of the various parts of the proposed projects are given in Annex 8 and summarized below:

	Malaysian\$ (millions)			US\$ (million)			Percent of Total
	Local	Foreign	Total	Local	Foreign	Total	
1. Educational Development Center	1.44	0.95	2.39	0.51	0.34	0.85	3.0
2. Educational Television	0.95	3.99	4.94	0.34	1.41	1.75	6.2
3. One technical & seven vocational schools	10.84	10.18	21.02	3.84	3.61	7.45	26.2
4. Science schools of the University of Penang	18.23	17.74	35.97	6.46	6.30	12.76	44.8
5. Contingencies:							
Physical	3.01	3.25	6.26	1.07	1.15	2.22	7.8
Price	4.72	4.93	9.65	1.67	1.75	3.42	12.0
Total	39.19	41.04	80.23	13.89	14.56	28.45	100.0

The estimated cost by various categories of expenditure is summarized below:

	<u>Malaysian\$ (millions)</u>			<u>US\$ (millions)</u>			<u>Percent of Total</u>
	<u>Local</u>	<u>Foreign</u>	<u>Total</u>	<u>Local</u>	<u>Foreign</u>	<u>Total</u>	
<u>1. Construction</u>							
Academic & Communal	15.51	6.65	22.16	5.50	2.36	7.86	27.6
Boarding	4.92	2.11	7.03	1.75	0.75	2.50	8.8
Staff Housing	0.70	0.30	1.00	0.25	0.11	0.36	1.3
Site Development	3.32	1.43	4.75	1.18	0.50	1.68	5.9
Professional Services	2.02	0.86	2.88	0.71	0.31	1.02	3.6
Sub-total	26.47	11.35	37.82	9.39	4.03	13.42	47.2
<u>2. Furniture</u>	2.67	0.67	3.34	0.94	0.24	1.18	4.1
<u>3. Equipment</u>	2.32	20.84	23.16	0.82	7.39	8.21	28.9
<u>4. Contingencies</u>							
Physical	3.01	3.25	6.26	1.07	1.15	2.22	7.8
Price	4.72	4.93	9.65	1.67	1.75	3.42	12.0
Total	39.19	41.04	80.23	13.89	14.56	28.45	100.0

4.21 Contingencies. Contingencies allowances are shown in detail in Annex 9. For unforeseen factors 10% is added to the cost estimates of site development, construction, professional fees and equipment and 5% to the cost estimates of furniture. Unit costs of 1971, in both local currency and foreign exchange, are expected to increase by 5% p.a. and therefore an additional 15% contingency has been included for civil works, furniture and equipment. For the entire five-year implementation period (Chart 2), all contingencies are equivalent to 24.7% of the basic cost of the project before adding contingencies and to 20% of the total cost including contingencies.

4.22 Foreign exchange components. The foreign exchange component has been calculated as follows: (a) site development, construction and professional fees, 30%; (b) furniture, 20%; and (c) equipment, 90%. Including contingencies, the foreign exchange component is estimated at US\$14.6 million or 51% of the total project cost.

4.23 Estimated unit capital costs for the project institutions are shown in Annex 10. Estimated costs per student place and per boarding place compare well with estimated unit capital costs in institutions in other Bank Group financed education projects; e.g., the estimated cost per student place in the vocational schools (about US\$1,140) compares with an estimated cost of about US\$890 for the schools financed in Korea under Credit 151-KO in 1969 and of about US\$1,230 for schools financed in the Republic of China under Loan 691-CHA in 1970.

Implementation of the Project

4.24 Administration. The existing project unit, established in the Ministry of Education for the implementation of the first project, would be responsible for overall supervision of the project and liaison with the Bank. This was confirmed during negotiations. In preparing and issuing tenders, evaluating bids and awarding contracts for civil works, the project unit would collaborate with the Public Works Department of the Ministry of Works, Posts and Telegraphs. A maintenance and development unit has been established in the University of Penang to provide overall supervision of that part of the project concerning this university and liaison between the university authorities and the project unit.

4.25 Procurement. Contracts for civil works, furniture and equipment would be awarded on the basis of international competitive bidding in accordance with the Bank's Guidelines for Procurement. The Malaysian building industry is large and competitive and it is not likely that foreign contractors will gain awards for civil works. The bulk of instructional equipment may be procured abroad and furniture locally. Local manufacturers would be allowed a preferential margin of 15%, or the existing rates of import duties, whichever is the lower, over the c.i.f price of competing imports.

4.26 Items would be grouped to the extent practicable to encourage competition and to permit bulk procurement. Design and supervision for civil works of the ETV studio and the Science Schools of the University of Penang would be the responsibility of consulting firms of architects selected and commissioned on terms and conditions satisfactory to the Bank. Work toward the preparation of the architectural master plan for the University of Penang has already been started. Design and supervision of civil works of the other project items would be carried out by the Public Works Department; in particular, the technical and vocational schools would be patterned on the standardized design developed for similar institutions in the first Bank project.

4.27 Sites. Suitable sites have been selected and acquired for the EDC, the ETV studio, the University of Penang, and the vocational schools at Klang, Kluang, Taiping and Tawau. During negotiations assurances were given by the government that suitable sites for the technical and the other vocational schools will be selected within six months from the signing of the Loan Agreement and acquired in good time to avoid delays in construction.

4.28 Disbursement. The proposed loan of US\$15.5 million would finance the foreign exchange component (US\$14.6 million) of the estimated total project cost and the local currency portion (US\$0.9 million) of the ex-factory cost of furniture and equipment which may be procured locally after international competitive bidding (para 4.25). The loan would be disbursed to meet:

- (a) 100% of the c.i.f. price of directly imported instructional equipment and furniture and of the ex-factory price of locally manufactured furniture and equipment;
- (b) 70% of total expenditure of imported and locally procured furniture and equipment;
- (c) 30% of total cost for civil works and professional services; this percentage representing the estimated foreign exchange component.

The above percentages would be adjusted as necessary to spread disbursements over the implementation period of the project. Savings under one category would be available to cover overruns in other categories or would otherwise be available for cancellation. The estimated disbursement schedule is shown in Annex 11.

4.29 Retroactive reimbursement is recommended for the services of consultant architects for the preparation of the campus master plan for the University of Penang (para 4.26). This work has already started in order to avoid delays in the implementation of the project. Retroactive reimbursement should cover expenditure subsequent to January 1, 1972. The amount of expenditure before the date of the Loan Agreement is expected not to exceed US\$100,000, of which US\$30,000 would be eligible for reimbursement.

V. AGREEMENTS REACHED AND RECOMMENDATION

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

- (a) the preparation of a five-year plan of operation for the EDC (para. 4.04);
- (b) the preparation of a maintenance plan for school TV sets and the appointment of full time educational mass media officers to the State Audio-visual Centers (paras. 4.07 and 4.08);

- (c) the inclusion of representatives of the employers in the Boards of the vocational schools (para. 4.10);
- (d) the responsibilities and staffing of the project unit and of the maintenance and development unit at the University of Penang (para. 4.24); and
- (e) the selection and acquisition of sites for all the project schools (para. 4.27).

5.02 The presentation to the Bank of a satisfactory maintenance and repair plan for school TV sets will be a condition of disbursement for this project item (para. 4.07).

5.03 Retroactive reimbursement is recommended for the services of consultant architects for the preparation of the campus master plan for the University of Penang (para. 4.29).

5.04 The proposed project provides a suitable basis for a loan of US\$15.5 million equivalent to the government of Malaysia for a term of 25 years including a 5-year grace period.

March 9, 1972

THE EDUCATION AND TRAINING SYSTEM

Administration

1. Under the Malaysian constitution, education is a federal responsibility but the East Malaysian States of Sabah and Sarawak control their own education systems for the present. In accordance with the Education Law, this situation will be reviewed in 1973 and it is likely that following this review the system will be gradually unified. In West Malaysia, administrative and financial control are centralized in the Ministry of Education which also contains the federal inspectorate; the operational structure of this Ministry is presently under review by a government appointed committee. Sabah and Sarawak each have their own Department of Education, providing administrative and financial control and an inspectorate.

2. The Education Planning and Research Division (EPRD) of the Federal Ministry of Education is in charge of quantitative planning and co-ordination of curriculum development and related in-service training activities. Although EPRD was strengthened in 1969 in conformity with a requirement of the first Bank loan for education, it is still inadequately staffed. In addition, some of its functions in respect to other Divisions of the Ministry have not been defined very clearly and this leads to overlapping of responsibilities and duplication of work. A proposal has been recently made to separate the planning and statistical sections from the education research sections. The committee which is reviewing the operational structure of the Ministry (para. 1 above) is expected to resolve these problems.

3. The school inspectorate also requires strengthening. It is, at present, under-staffed and concentrates only on primary education. There are over 1,400 primary teachers per inspector.

4. Financial procedures have been recently improved. The Ministry of Education now employs a system of program and performance budgeting. Forward budgeting for more than one or two fiscal years, however, is still carried out on the basis of outmoded techniques.

Structure

5. Schools are of three types: government schools, government aided schools run by non-profit voluntary bodies, and unaided private schools. The first two types, generally known as "assisted schools" provide primary and lower secondary education free of charge; fees charged in other levels and types of education (about M\$10 million annually) are accompanied by a large bursary program (about M\$15 million, annually including fellowships for overseas studies). The school year runs from January to November.

6. Primary education begins at the age of six and lasts six years. The secondary course of five years comprises three years in lower and two years in upper secondary schools; for the latter, entrance is selectively based on a competitive examination. In West Malaysia all primary school leavers are offered lower secondary school places; this system is being extended to East Malaysia as facilities and funds become available. At the end of the lower secondary course (grade 9) the Lower Certificate of Education is taken. The School Certificate follows at grade 11 and the Higher School Certificate at grade 13.

7. Technical and vocational education (a two-year course in West Malaysia and a three-year course in East Malaysia) is post-lower secondary education. Upper secondary and technical students judged suitable for universities take a post secondary or Form VI course (called Junior College in East Malaysia) which lasts two years. Post secondary education comprises four technical and agricultural institutes and three universities. A fourth university will be established in the near future. The graduates of Form VI and the best students of post secondary institutes have access to the universities.

General Education

8. Primary education (Grades 1-6) is offered in one of the four languages used in instruction - Malay, Chinese, English or Tamil. In 1970 instruction in English in Grade 1 was discontinued, being replaced by Bahasa Malaysia, the developing national language. By 1976 English will have ceased to be a language of instruction but will be taught as a second language in all schools. The total enrollment in 1970 amounted to 1.68 million, representing some 90% of the 6-11 age group. The average rate of enrollment growth over the past six years has been 3% p.a. About 48% of the pupils are girls. Enrollments in private unaided schools are negligible. The system of automatic promotion is followed and repetition rates are therefore nil. Dropout rates are low in urban areas and in English medium schools but in East Malaysia one pupil in four drops out during the six-year course.

9. The total teaching force numbers about 55,000 giving a pupil/teacher ratio of about 31:1. The government intends to increase this ratio gradually to 35:1. This ratio is considered reasonable and teaching is expected to be improved by the employment of new media and the upgrading of the teaching staff. While only 12% of the teachers are regarded as unqualified, a much greater number, some 20,000 or 36% are of low standards, having had only primary education before the teacher training course. These teachers are employed mainly in rural schools. The government is trying to raise the standard of these teachers by in-service courses and inspectorate visits and advice.

10. The primary school curriculum stresses language; social studies receive relatively little time but are partially covered in the language classes.

11. General secondary education had in 1970 a total enrollment of 530,000 in assisted schools. As a proportion of the relevant age groups, this represents:

<u>Level</u>	<u>Age Group</u>	<u>Enrollment Ratio</u>
Lower Secondary (grades 7-9)	12-14 years	50%
Upper Secondary (grades 10-11)	15-16 years	20%
Form VI/Junior College (grades 12-13)	17-18 years	4%

Over 40% of the pupils were girls and this percentage is steadily increasing. More than two-thirds of the pupils are taught in English, the remainder in Malay or Chinese. Enrollment in non-assisted schools (45,000) was relatively substantial only in Sarawak (15,000). When a pupil changes his language of instruction in moving from primary to secondary school, he is required to spend one year in a "remove" or transition class. In due course (para. 8), Bahasa Malaysia will become the language of instruction in all assisted secondary schools.

12. About 19,000 teachers are employed in the assisted schools, giving a reasonable pupil/teacher ratio of 28:1. However, only about 3,000 teachers are university graduates and only about 800 of these are graduates in science.

13. The curriculum is generally well balanced but little practical work is done by the students themselves. The government is aware of this and efforts are being made to improve the curriculum content in mathematics and the sciences where an integrated science program is being adopted at the lower secondary level and Nuffield type practical science courses will be introduced at the upper level in 1972. These courses stress scientific studies within the range of the pupil's own experience and emphasize the use of simple home-made apparatus. They demand an innovative approach on the part of the teacher and therefore require upgrading courses for practising teachers. These courses are at present given in vacation time in the teacher training colleges; they last only two weeks and are too short to cover the work properly. At Form VI and Junior College level courses are very specialized and narrow as, for instance, in the Science Form VI where over 70% of the time is spent on mathematics and science.

Technical and Vocational Secondary Education

14. There are three upper secondary technical schools (grades 10-11) in West Malaysia with a total enrollment of about 2,000; five schools are under construction as part of the first Bank education project and will provide a further 3,200 places by 1974. The objective of these schools is to provide the students with a good general education together with training in engineering, commerce or agriculture. About two-thirds of the

graduates enter post-secondary colleges or Form VI classes (grades 12-13) with a view to university education. The remaining one-third are employed in government departments or in the private sector and become junior technicians through experience and on-the-job training.

15. Vocational training in industrial and commercial skills is given in West Malaysia in seven vocational schools (grades 10-11) and in East Malaysia in three vocational schools (grades 10-12). The total enrollment in industrial courses is about 2,900 and in commercial courses 700. The first Bank education project will provide by 1974 six more schools with a total of 3,840 places. In West Malaysia, the training leads to the Malaysian Vocational School Certificate, which is regarded as equivalent to the general secondary School Certificate. In East Malaysia, the industrial courses last three years and lead to City and Guilds examinations. Commercial courses are of one or two years duration. In both West and East Malaysia, the graduates are in great demand by industry: the "tracer system" (para. 3.10), organized in most schools indicates that, after graduation, most are employed in the trade in which they have been trained.

Non-Formal Vocational Training

16. The Industrial Training Institute (ITI) in Kuala Lumpur under the Ministry of Labor provides vocational training for apprentices and preparatory trade courses for school leavers. Although its student capacity is about 450, the present enrollment is only 350. The ITI is underutilized mainly because of the still insufficient demand by the employers for its apprenticeship scheme. This scheme lasts four years and the apprentices spend 22 weeks at the ITI during their first year and 11 weeks in each of the subsequent years. About 150 apprentices receive their certificates annually. Malaysian industry is still reluctant to employ apprentices but the preparatory trade course graduates find ready employment. Another ITI is to be established at Prai with assistance from the Federal Republic of Germany. MARA's ^{1/} educational activities include four vocational training centers with a total enrollment of about 500; three more centers are planned which will bring the total enrollment to 3,000. In addition, MARA supports on-the-job training by providing the participants with allowances during the period of training. The National Youth Training Center under the Ministry of Culture, Youth and Sports has an enrollment of about 500, but only 7% of its students have found employment in their respective trades, the main reason being the irrelevance of the training.

17. Numerous short-term courses are provided by several Ministries and industrial concerns. There are no reliable figures on their enrollment, type of course, teachers, etc.

^{1/} MARA (Mahlis Amanah Ra'ayat - Council of Trust for Indigenous People) - parastatal agency, under the Ministry of National and Rural Development, to promote economic and social development, particularly in the rural areas.

Agricultural Secondary Education

18. At the lower secondary level an increasing number of schools offer agriculture as an elective subject. Agricultural science is also taught in a limited number of upper secondary schools. The Ministry of Education has recently established two agricultural vocational schools (grades 10-11) each with an annual intake of 80 students. The Ministry of Agriculture has two schools of agriculture (grades 10-12) which train junior agricultural assistants; three more schools of agriculture are under construction as a part of the first Bank education project, which will increase the total enrollment at this level from 500 to 1,400 by 1974. The schools under the Ministry of Agriculture, where experienced extension workers are teaching the practical subjects, are of good quality and have a strong practical orientation. The vocational agricultural schools under the Ministry of Education are weaker because the content of the program is too general and the instruction too academic; as a result, the employment record of their graduates is poor. It would be advisable to rationalize agricultural education by concentrating training in crop and animal husbandry under one single Ministry and by planning its development in alignment with the expected demand from the public sector (which employs more than 80% of trained agricultural manpower).

Primary and Lower Secondary Teacher Training

19. In West Malaysia, primary and lower secondary school teachers are trained in a two-year course following the School Certificate. In 1970, there were six primary teacher training colleges with a total enrollment of nearly 1,400. Lower secondary teachers in training in 1970 numbered 1,100 in four institutes of which one trains teachers of practical subjects. Three lower secondary teacher training institutions were being used for other purposes, two for university work and one for intensive courses in teaching Bahasa Malaysia. The numbers enrolled in teacher training colleges and institutes have declined sharply in recent years because the government intends to increase the class size at the primary level and the proportion of graduate teachers at the secondary level.

20. In East Malaysia, the shortage of suitably qualified entrants for teacher training is such that lower entry standards are still accepted. Primary school teachers are trained in a three-year course following primary school graduation or in a two or three-year course following some lower secondary education. As in West Malaysia, the course for secondary teachers lasts two years following the School Certificate. Total enrollment in these courses in 1970 was about 1,350 and the output 450 primary and 120 secondary teachers.

21. Although the teacher training curriculum allocates sufficient time to practical training, more emphasis needs to be placed on training the student-teachers in the use of new media, including audio-visual aids.

Technical Teacher Training

22. Technical teachers for the vocational schools are trained at the Technical Teacher Training College established in 1970 in Kuala Lumpur with Canadian assistance. The training programs last three years and include a sufficient amount of teaching practice. To obtain industrial experience, the student-teachers participate in internship schemes organized in collaboration with employers. The annual output of the Technical Teacher Training College will be about 80 and the first group will graduate in 1972.

23. Technical teachers for the technical secondary schools come from the Kuala Lumpur Technical College and the Faculty of Engineering of the University of Malaya. In addition to their regular studies in these institutions, they attend courses in pedagogy at the Technical Teacher Training College.

Post-Secondary Technical and Agricultural Education (Grade 12 onwards)

24. Post-secondary technical and agricultural education is given in four institutions, all of good quality. The Ungku Omar Polytechnic (enrollment 450), recently established at Ipoh, trains technicians in a 2-1/2 year course which includes 26 weeks of practical experience in industry. The Kuala Lumpur Technical College (enrollment 1,000) gives three-year courses in architecture, engineering, land and quantity surveying, and town and country planning. The MARA Institute of Technology (enrollment 2,800) has inter alia a School of Engineering with an annual intake of 40 students at the diploma level and of 75 at the degree level. A rapid increase in enrollment in post-secondary technical education is planned (para. 3.09) and accords with estimated manpower requirements. The increase, however, is likely to move at a pace slower than that envisaged in the Second Malaysia Plan, 1971-1975, since adequate consideration has not been given to the shortage of teachers for this level and type of education.

25. The Agricultural College at Serdang (total enrollment 600) offers a three-year diploma course. This college has very good facilities and is well located. In the near future, it will be upgraded to become the Agricultural University of Malaysia. It is planned that the diploma course will be retained and that the output at this level will be about 300 p.a. from 1974 onwards.

University Education (Grade 14 onwards)

26. Until 1969 only one University existed in Malaysia, the University of Malaya in Kuala Lumpur. In 1967 the Higher Education Planning Committee (HEPC) recommended the establishment of two more universities. These have now been established, both in temporary premises (para. 19), one at Penang and the other, the National University, at Kuala Lumpur. The National University specializes in Islamic studies and uses Bahasa Malaysia as the language of instruction; its permanent location has not yet been decided. The

other two universities use English as a language of instruction but students are required to become proficient in Bahasa Malaysia. In 1971, total university enrollment was 9,500 of which over 40% were in arts courses and less than 20% in science courses. This imbalance will be redressed with the development of the University of Penang where 60% of the students will be in science. Academic standards are high in all the three universities.

27. The 1970 enrollment at the University of Malaya was 7,600; it increased to 8,300 in 1971 but is expected to stabilize at around 8,000; this University will concentrate on graduate studies. Both the University of Penang (1970 enrollment 260, 700 in 1971) and the National University (1970 enrollment 190, 600 in 1971) are developing rapidly. In addition, it is estimated that about 12,000 Malaysians are taking higher education courses abroad. Many of these students are privately financed and details of the courses followed are not generally available.

M A L A Y S I A

Actual (1965, 1970) and Projected (1975, 1980) Enrollments in Assisted
Schools (in thousands)

					<u>Annual % Increases</u>	
	<u>1965</u>	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1965-1970</u>	<u>1970-1980</u>
<u>Grades</u>						
1-6 Primary education	1421	1679	1937	2190	3.4	2.7
West Malaysia	1217	1421	1600	1800	3.1	2.4
East Malaysia	204	258	337	390	4.8	4.2
7-9 Lower Secondary	252	418	558	743	10.6	5.9
West Malaysia	232	379	500	650	10.3	5.5
East Malaysia	20	39	58	93	14.3	9.1
10-11 Upper Secondary	44	99	137	197	17.7	7.1
West Malaysia	41	89	120	170	16.8	6.7
East Malaysia	3	10	17	27	27	10.5
10-11 Technical and Vocational Training	2.5	5.5	13	20	17.1	13.8
12-13 Sixth Form	4.2	11.6	16	22	23	6.6
West Malaysia	3.5	10.6	14.5	20	25	6.6
East Malaysia	0.7	1.0	1.5	2	7.4	7.2
12-13 Technical Colleges	1.0	5.2	13	20	39	14.4
12-13 Teacher Training	10.2	4.8	5	5	- 14	0.4
14+ University	2.8	8.5	13	20	24	9.5

Source: Government data and Bank staff projections based on announced government policies.

M A L A Y S I A

Teacher Requirements and Supply 1970-1980

	Requirements			Type of Teachers	Additional Requirements 1971-1980	New Supply 1971-1980
	1970 <u>Actual</u>	1980 <u>Target</u>	Additional- 1971-1980			
<u>Primary education:</u>						
Enrollment	1,679,000	2,190,000				
Pupil/teacher ratio	31	35				
Teachers-total	55,000	63,000	17,000	Primary school teachers	17,000	17,000
<u>Secondary education:</u>						
Enrollment	529,000	962,000		Secondary school teachers:	20,590	19,200
Pupil/teacher ratio	28	28		- College Trained	7,700	8,000
Teachers-total	18,900	34,500	19,600	- Arts Graduates	7,130	7,000
-Science graduates	800	5,500	5,200	- Science Graduates	5,760	4,200 2/
-Arts graduates	2,400	8,300	6,700			
-non-graduates	15,700	20,700	7,700			
<u>Technical/Vocational Sec. education:</u>						
Enrollment	5,500	20,000		Technical teachers	1,260	900
Pupil/teacher ratio	18	18		- College Trained	960	700
Teachers-total	300	1,100	1,000	- University Trained	300	200
-Science graduates	35	110	100	Agricultural teachers	300	300
-Arts graduates	70	245	200	- College Trained	100	100
-Engineering graduates	15	45	40	- University Trained	200	200
-Non-graduates	180	700	660	All teachers	39,150	37,400
<u>Technical Colleges:</u>						
Enrollment	5,200	20,000				
Pupil/teacher ratio	13	17				
Teachers-total	400	1,200	950			
-Science graduates	200	600	460			
-Arts graduates	100	300	230			
-Engineering graduates	100	300	260			
<u>Non-Formal Training:</u>						
Industrial Training Institut	350	1,200				
MARA Training Center	500	3,000				
Total enrollment	850	4,200				
Pupil/teacher ratio	14	14				
Teachers-total (all non-graduates)	60	300	300			
<u>Agricultural education</u>						
Enrollment	1,400	5,000				
Pupil/teacher ratio	15	15				
Teachers-total	90	330	300			
All teachers	74,660	100,100	39,150			

1/ Includes replacement needs estimated at 1.5% p.a. for general school teachers and 3% p.a. for technical and agricultural teachers.

2/ Includes 1500 graduates from the University of Penang.

Source: Government data and Bank staff projections based on announced government policies.

November, 1971.

M A L A Y S I A

Education Expenditure in relation to Government Budget and GNP
(M\$ million)

	<u>1963</u>	<u>1965</u>	<u>1967</u>	<u>1969</u>	<u>1970</u>
1. Ministry of Education Expenditure: Total	319.0	404.5	442.0	481.5	547.3
(Recurrent)	(262.8)	(338.0)	(385.6)	(438.8)	(476.8)
(Capital)	(56.2)	(66.5)	(56.4)	(42.7)	(70.5)
2. Other Ministries' Education Expenditure <u>a/</u>	n.a.	n.a.	14.9	46.6	49.7
3. Private Sector's Education Expenditure <u>b/</u>	n.a.	35.3	38.2	45.0	55.0
4. Total Education Expenditure of the country (1 + 2 + 3)	n.a.	n.a.	495.1	573.1	652.0
5. Ministry of Education Expenditure as percentage of Government Total Expenditure	17.4%	18.3%	16.1%	16.1%	17%
6. Government's Education Expenditure as percentage of Government Total Expenditure	n.a.	n.a.	16.6%	17.6%	18.6%
7. Ministry of Education Expenditure as percentage of GNP	4.2%	4.5%	4.6%	4.3%	4.5%
8. Total Education Expenditure as percentage of GNP	n.a.	n.a.	5.1%	5.2%	5.4%

a/ Includes expenditure by Ministry of National and Rural Development, Ministry of Agriculture and Ministry of Labor. ~~education~~ expenditures by other Ministries are negligible.

b/ Includes expenditure by local authorities, costs of private schools and school fees collected.

Source: The Ministry of Education, the Department of Statistics and Bank staff estimates.

November 1971.

M A L A Y S I A

Ministry of Education Recurrent Expenditure 1970 - 1980 *

(M\$ million)

	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>Annual % Increase</u>		
				<u>1970-1975</u>	<u>1975-1980</u>	<u>1970-1980</u>
Administration and other expenditures ^{1/}	72.7	104.6	141.2	7.5	6.3	6.9
Primary Education	235.9	364.2	453.3	8.6	4.5	6.5
(West Malaysia)	(209.0)	(312.7)	(371.7)	(8.3)	(3.5)	(5.9)
(East Malaysia)	(26.9)	(51.5)	(81.6)	(13.8)	(9.7)	(11.7)
Secondary Education	108.0	206.9	308.8	13.9	8.3	11.0
(West Malaysia)	(102.5)	(177.7)	(265.6)	(11.6)	(8.3)	(10.0)
(East Malaysia)	(5.5)	(29.2)	(43.2)	(39.0)	(8.3)	(23.0)
Technical-Vocational Education	3.2	7.5	12.8	18.6	11.2	15.0
Teacher Training	14.8	17.5	21.0	3.4	3.6	3.5
Higher Education	42.2	86.5	140.0	15.0	10.0	12.7
Total:	<u>476.8</u>	<u>787.2</u>	<u>1077.1</u>	<u>10.5</u>	<u>6.5</u>	<u>8.4</u>
as a percentage of Central Government recurrent expenditure	19.0%	23.0%	23.0%			

* 1970 estimates; 1975, 1980 projections.

^{1/} Includes expenditure on hostels, scholarships and educational radio and television.

Sources: For 1970 "The Expenditure budget of the Federal Government of Malaysia, 1971"; for 1975 and 1980, Bank Staff estimates, based on enrollment and teacher projections (Annexes 2 and 3) and the new salary scale.

November, 1971.

M A L A Y S I A

Public Investment on Education and Training, 1966-1975

(M\$ million)

	<u>1966-1970</u> (Actual)	<u>1971-1975</u> (Planned)	<u>Increase/Decrease (-)</u> (In %)
<u>MINISTRY OF EDUCATION</u>	255.6 =====	448.5 =====	75
<u>West Malaysia</u>	<u>213.1</u>	<u>370.1</u>	74
Primary Education	48.5	55.1	14
Secondary Education	100.7	154.4	53
Technical Education	10.8	42.9	297
University	24.4	87.0	262
Teacher Training	9.7	3.0	-70
Other Programs	19.0	27.7	46
<u>East Malaysia</u>	<u>42.5</u>	<u>78.4</u>	85
Sabah	16.5	36.0	118
Sarawak	26.0	42.4	63
<u>OTHER AGENCIES</u>	73.8 =====	88.8 =====	20
Ministry of Labor	0.8	3.7	362
M.A.R.A.Vocational Institutes	64.0	42.2	-34
M.A.R.A.Institute of Technology	9.0	42.9	376
<u>TOTAL</u>	<u>329.4</u> =====	<u>537.3</u> =====	<u>63</u> ==

Source: Second Malaysian Plan

November, 1971

M A L A Y S I ACapacity and Staff of the Project Schools

	<u>Student Places</u>		<u>Boarding Places</u>	<u>Teaching Staff</u>
	<u>(Industry)</u>	<u>(Commerce)</u>		
<u>Vocational Schools</u>				
Taiping	560	160	540	42
Kluang	560	160	540	42
Klang	560	160	540	42
Temerloh	560	160	540	42
Sibu	420*	60	180	31
Miri	240	60	180	25
Tawau	360	40	300	28
<u>Technical School</u>				
Kuala Trengganu	480	160	280	23
<u>University of Penang</u>				
School of Physics & Mathematics	1,100)	620	100
School of Chemistry	800)		75
School of Biology	400)		40
School of Applied Sciences	250)		20
School of Pharmaceut. Sciences	90)		9
Center for Educational Services	500)		40

* Includes 120 student places for a course in navigation and marine engineering.

November, 1971

M A L A Y S I A

Second Education Project - Summary of Estimated Costs

(in Malaysian \$ Thousands and US\$ Thousands)

No.	Project Item	Site Development		Acad. & Communal		Construction				Furniture		Equipment		Profess. Services		Total Costs			
		M\$	US\$	M\$	US\$	Boarding		Staff Housing		Total		M\$	US\$	M\$	US\$	M\$	US\$	M\$	US\$
						M\$	US\$	M\$	US\$	M\$	US\$								
1.	<u>Educational Development Center</u>	222	79	974	345	505	179			1,479	524	255	90	430	153	-	-	2,386	846
2.	<u>Educational Television</u>	80	29	525	186					525	186	60	21	4,190	1,486	85	30	4,940	1,752
3.	<u>Secondary Vocational Schools</u>																		
3-A	Perak - Taiping	291	103	777	275	593	210	45	16	1,415	501	154	55	931	330			2,791	989
3-B	Johore - Kluang	312	111	814	289	621	220	47	17	1,482	526	165	59	931	330			2,890	1,026
3-C	Selangor - Klang	270	96	740	263	565	200	43	15	1,348	478	145	51	931	330			2,694	955
3-D	Pahang - Temerloh	334	118	851	302	650	231	49	17	1,550	550	176	62	931	330			2,991	1,060
3-E	Sarawak - Sibu	308	109	697	247	271	96	65	23	1,033	366	97	35	711	252			2,149	762
3-F	Sarawak - Miri	268	95	690	245	320	114	77	27	1,087	386	103	37	681	242			2,139	760
3-G	Sabah - Tawau	294	104	794	282	680	241	356	126	1,830	649	176	62	926	328			3,226	1,143
	<u>Secondary Technical School</u>																		
3-H	Trengganu - Kuala Trengganu	234	83	519	184	601	213	52	19	1,172	416	132	47	607	215			2,145	761
	Sub-Total	2,311	819	5,882	2,087	4,301	1,525	734	260	10,917	3,872	1,148	408	6,649	2,357	85	30	21,025	7,456
4.	<u>University of Penang</u>																		
4-A	School of Physics & Mathematics	230	82	2,296	814					2,296	814	253	90	1,782	632	354	125	4,915	1,743
4-B	School of Chemical Sciences	270	96	2,701	958					2,701	958	297	105	1,500	532	416	146	5,184	1,838
4-C	School of Biological Sciences	274	97	2,740	972					2,740	972	302	107	1,725	612	422	150	5,463	1,937
4-D	School of Applied Sciences	102	36	1,020	362					1,020	362	112	40	704	250	157	56	2,095	744
4-E	School of Pharmaceutical Sciences	41	14	404	143					404	143	45	16	204	72	62	22	756	267
4-F	Lecture Theaters	113	40	1,130	401					1,130	401	124	44	149	53	174	62	1,690	600
4-G	Computer Center & Central Facilities	65	23	651	231					651	231	50	18	1,950	691	100	35	2,816	998
4-H	Library	278	99	2,776	984					2,776	984	305	108	3,200	1,135	428	152	6,987	2,478
4-I	Auditorium	106	37	1,063	377					1,063	377	117	41	150	53	164	58	1,600	566
4-J	Residential Hall	250	89			2,220	787	270	96	2,490	883	274	97	150	53	384	136	3,548	1,258
4-K	Master Plan & Site Development	405	144													130	46	535	190
4-L	Center for Educational Services													380	135			380	135
	Sub-Total	2,134	757	14,781	5,242	2,220	787	270	96	17,271	6,125	1,879	666	11,894	4,218	2,791	988	35,969	12,754
	Total Cost before Contingencies	4,747	1,684	22,162	7,860	7,026	2,491	1,004	356	30,192	10,707	3,342	1,185	23,163	8,214	2,876	1,018	64,320	22,808

M A L A Y S I A

Contingency Allowances (US Dollars 000's)

		<u>Site Development</u>		<u>Building</u>		<u>Furniture</u>		<u>Equipment</u>		<u>Prof. Services</u>		<u>Total</u>
		<u>Local</u>	<u>Foreign</u>	<u>Local</u>	<u>Foreign</u>	<u>Local</u>	<u>Foreign</u>	<u>Local</u>	<u>Foreign</u>	<u>Local</u>	<u>Foreign</u>	
Allowances for Physical factors	%	10%	10%	10%	10%	5%	5%	10%	10%	10%	10%	
	Amount	118	50	750	321	47	12	82	740	71	31	
Allowances for Price increases	%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	
	Amount	177	75	1,125	481	141	36	123	1,110	107	46	
Total	%	25%	25%	25%	25%	20%	20%	25%	25%	25%	25%	24.7%
Total cost before contingencies		1,180	504	7,495	3,212	948	237	821	7,393	713	305	22,808
Contingencies		295	125	1,875	802	188	48	205	1,850	178	77	5,643
Total cost includ- ing contingencies		1,475	629	9,370	4,014	1,136	285	1,026	9,243	891	382	28,451

February, 1972

M A L A Y S I A

Capital Unit Costs in New Project Institutions^{1/}
(In US Dollars)

	<u>Gross Area/ Student place (sq.ft.)</u>	<u>Site Develop- ment</u>	<u>Building</u>	<u>Furniture</u>	<u>Equipment</u>	<u>Total</u>	<u>Unit Capital Costs in other Bank Group financed projects</u>
<u>Academic & Communal Facilities</u>							
Secondary Vocational Schools	112	105	468	40	528	1,141	1,228* (China) 888* (Korea)
Secondary Technical School	71	57	288	32	468	845)
University of Penang - Science Schools	175	136	1,357	149	815	2,457	3,800** (Singapore)
<u>Boarding</u>							
Secondary Vocational Schools	91	94	465	70	-	629	1,170* (Cameroon)
Secondary Technical School	91	89	444	66	-	599	475* (Ivory Coast)
University of Penang	207	153	1,528	168	106	1,955	2,300* (Zambia) 2,600* (Singapore)
<u>Staff Housing Units</u>							
Secondary Vocational & Tech- nical Schools	833	1,071	6,117	-	-	7,188	6,559* (Dominican Republic)
University of Penang	1,152	745	7,445	-	-	8,190	11,617* (Pakistan)

^{1/} Professional fees and contingencies are not included.

* 1970 prices.

** 1971 prices.

February, 1972.

M A L A Y S I A

Second Education Project - Forecast of Disbursements

<u>Quarter*</u>	<u>Quarterly Disbursements</u>		<u>Accumulated Disbursements</u>		<u>Total Balance Undisbursed</u>
	<u>%</u>	<u>US\$ (000's)</u>	<u>%</u>	<u>US\$ (000's)</u>	<u>US\$ (000's)</u>
1	0.2	31.0	0.2	31.0	15,469
2	0.3	46.5	0.5	77.5	15,422.5
3	1.0	155.0	1.5	232.5	15,267.5
4	2.3	356.5	3.8	589.0	14,911.0
5	2.0	310.0	5.8	899.0	14,601.0
6	5.0	775.0	10.8	1,674.0	13,826.0
7	8.9	1,379.5	19.7	3,053.5	12,446.5
8	3.6	558.0	23.3	3,611.5	11,888.5
9	2.8	434.0	26.1	4,045.5	11,454.5
10	7.5	1,162.5	33.6	5,208.0	10,292.0
11	3.0	465.0	36.6	5,673.0	9,827.0
12	10.0	1,550.0	46.6	7,223.0	8,277.0
13	5.4	837.0	52.0	8,060.0	7,440.0
14	10.4	1,612.0	62.4	9,672.0	5,828.0
15	20.2	3,131.0	82.6	12,803.0	2,697.0
16	4.7	728.5	87.3	13,531.5	1,968.5
17	6.4	992.0	93.7	14,523.5	976.5
18	2.3	356.5	96.0	14,880.0	620.0
19	2.6	403.0	98.6	15,283.0	217.0
20	1.4	217.0	100.0	15,500.0	0

* Starting from the date of effectiveness

Source: Chart 2.

February 1972.

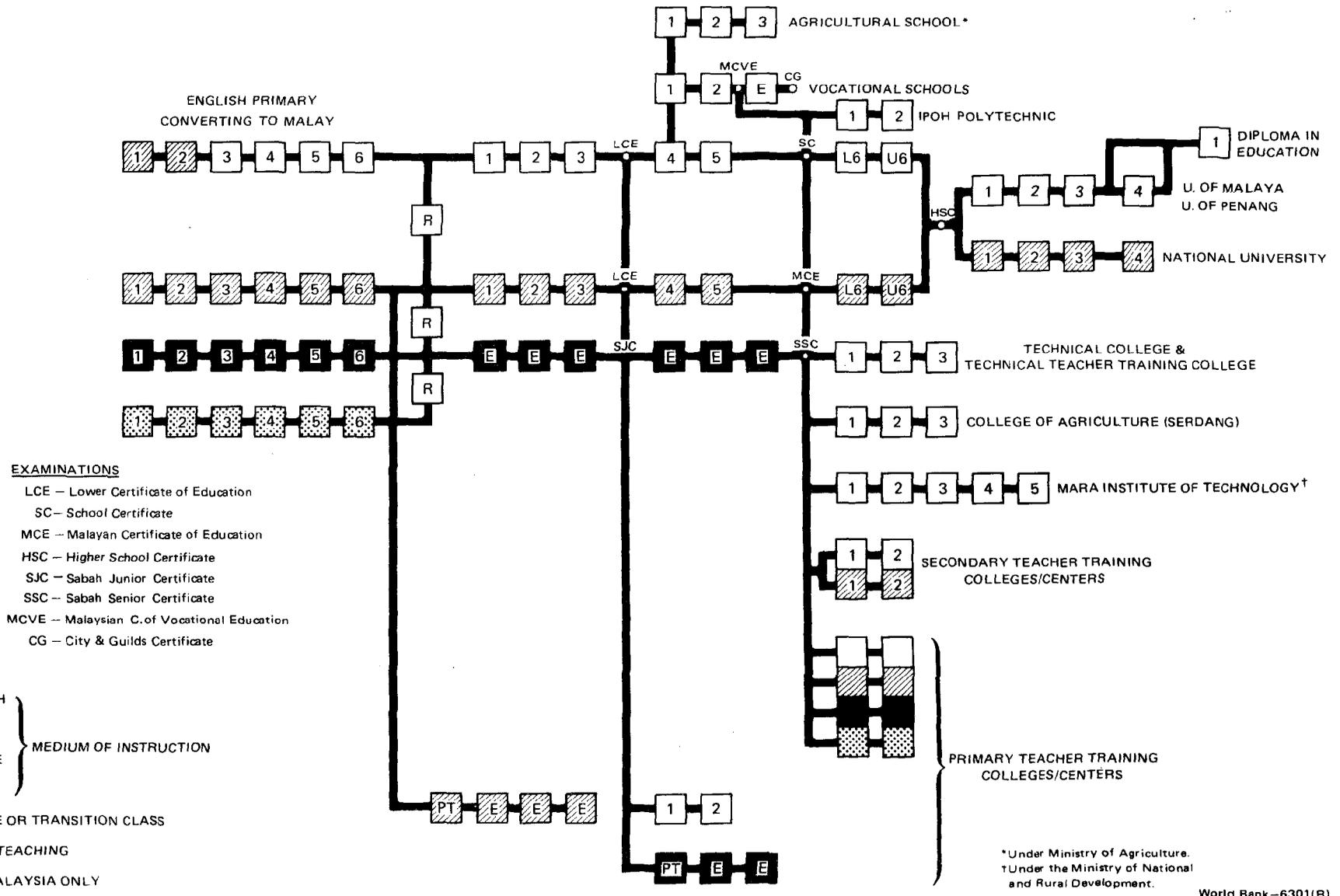
MALAYSIA

THE ASSISTED EDUCATION SYSTEM, 1971

PRIMARY

SECONDARY

POST-SECONDARY



*Under Ministry of Agriculture.
 †Under the Ministry of National and Rural Development.

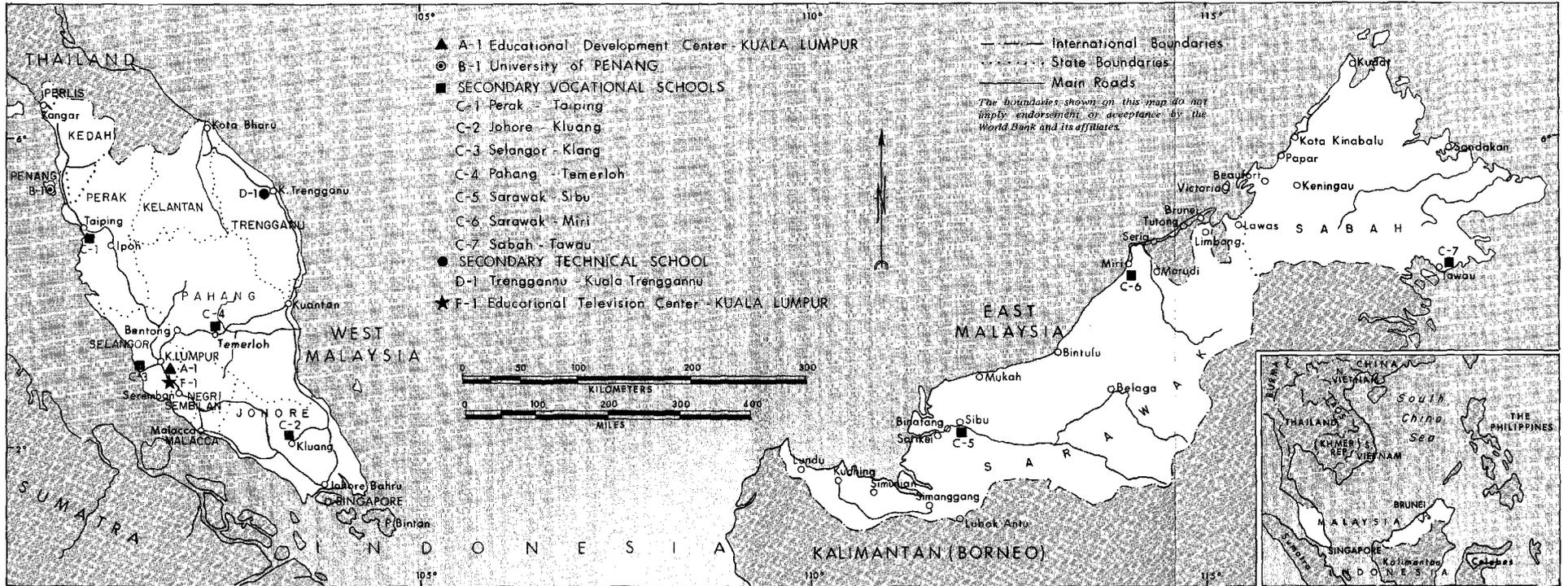
M A L A Y S I A
Schedule of Project Implementation

CHART 2

No.	Project Item	First Year		Second Year				Third Year				Fourth Year				Fifth Year								
		-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1	<u>Educational Development Center</u>																							
	<u>Educational Television</u>																							
	Appointment of Consultants - Design			X	X	X																		
	Construction Drawings			X	X	X	X	X																
	Supervision							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Contract Preparation, Tender & Award																							
	Construction								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Defects, Liability Period (construction)															X	X	X	X	X	X	X	X	X
Master Lists, Furniture & Equipment																								
Tender & Contract Award																								
Equipment & Furniture Procurement					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Guarantee Period (Furniture & Equipment)								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2a	<u>Vocational Schools</u>																							
	<u>Klang, Kluang, Taiping, Tawau</u>																							
	Construction Drawings (PWD)																							
	Supervision (PWD)																							
	Contract Preparation, Tender & Award (PWD)																							
	Construction								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Defects, Liability Period (Construction)															X	X	X	X	X	X	X	X	X
	Master Lists, Furniture & Equipment																							
Tender & Contract Award																								
Equipment & Furniture Procurement									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Guarantee Period (Furniture & Equipment)															X	X	X	X	X	X	X	X	X	
2b	<u>Vocational & Technical Schools</u>																							
	<u>Kuala Trengganu, Temerloh, Miri, Sibu</u>																							
	Site Selection & Acquisition																							
	Construction Drawings (PWD)																							
	Supervision (PWD)																							
	Contract Preparation, Tender & Award (PWD)																							
	Construction								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Defects, Liability Period (Construction)															X	X	X	X	X	X	X	X	X
Master Lists, Furniture & Equipment																								
Tender & Contract Award																								
Equipment & Furniture Procurement																								
Guarantee Period (Furniture & Equipment)															X	X	X	X	X	X	X	X	X	
3a	<u>University of Penang - Phase I</u>																							
	<u>Master Plan, Schools of Science</u>																							
	Master Plan			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Site Development			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Design Drawings			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Construction Drawings							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Supervision (Consultants)								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Contract Preparation, Tender & Award																							
Construction																								
Defects, Liability Period (Construction)																								
Master Lists, Furniture & Equipment																								
Tender & Contract Award																								
Equipment & Furniture Procurement																								
Guarantee Period (Furniture & Equipment)															X	X	X	X	X	X	X	X	X	
3b	<u>University of Penang - Phase II</u>																							
	<u>Library, Auditorium, Hostels</u>																							
	Design Drawings								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Construction Drawings																							
	Supervision (Consultants)																							
	Contract Preparation, Tender & Award																							
	Construction																							
	Defects, Liability Period (Construction)																							
Master Lists, Furniture & Equipment																								
Tender & Contract Award																								
Equipment & Furniture Procurement																								
Guarantee Period (Furniture & Equipment)																								

* - Date of Effectiveness
X - Items financed under the project
O - Items not financed under the project

MALAYSIA SECOND EDUCATION PROJECT



MARCH 1972

IBRD 3717 R1