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**APPRAISAL OF A
FOURTH EDUCATION PROJECT
IN
TANZANIA**

March 5, 1973

**Regional Projects Department
Eastern Africa Regional Office**

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CURRENCY EQUIVALENTS

USED IN THIS REPORT

Tanz. shs. 1.0 = US \$ 0.14
Tanz. shs. 1 million = US \$ 140,000
US \$ 1.00 = Tanz. shs. 7.14

MEASURES

1 mile = 1.6093 km.
1 acre = 0.4047 hectares

FISCAL YEAR

July 1st - June 30th

APPRAISAL OF A FOURTH EDUCATION PROJECT IN TANZANIA

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This report is based on the findings of an appraisal mission which visited Tanzania in June-July, 1972. The mission consisted of Messrs. R.F. McMahon (technical educator), F.C. Gamble (general educator), A.S. Naimie (architect) of the Bank, N. McEvers (economist, consultant), D.W. Eastwood (medical educator, consultant) and C. Gilpin (non-formal educator, consultant).

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T A N Z A N I A

BASIC DATA (Est.) - 1971

(excluding Zanzibar)

Population (Est.1972)	13.5 million
Population growth rate	2.7% p.a.
Wage and salary employment	401,000

Education

Public Schools

Primary education (grades 1-7)	
- enrollment	903,000
- ratio of enrolled to age group (7-13 yrs)	37%
Lower secondary education (grades 8-11)	
- enrollment	32,600
- ratio of enrolled to age group (14-17 yrs)	2.5%
Upper secondary education (grades 12-13)	
- enrollment	3,000
- ratio of enrolled to age group (18-19 yrs)	0.6%
Post secondary education (excluding University) (grades 12 and upwards)	
- enrollment	4,000

University of Dar es Salaam

- enrollment	1,600
- ratio of enrolled to age group (20-22 yrs)	0.2%

Private Schools

Ratio of private primary enrollment to public primary enrollment	3%
Ratio of private secondary enrollment to public secondary enrollment	33%

Expenditures

Central government recurrent expenditures on education	342 million shs.
- as a percentage of Central government recurrent expenditure	21%
National educational expenditure	414 million shs.
- as a percentage of total GDP	4.5%

APPRAISAL OF A FOURTH EDUCATION PROJECT IN TANZANIA

SUMMARY AND CONCLUSIONS

- i. This report appraises a fourth education project in Tanzania for which a credit of US\$10.3 million is proposed.
- ii. The country's philosophy of social and economic development is one of socialism and self-reliance and within this framework its major goal is to improve the living standards of the rural population. Some 90% of Tanzania's population live in rural areas, mostly scattered or in small communities where it is difficult to provide social services. Nevertheless, rural development leading to gradual improvements in the lives of the rural people is being given priority over urban and industrial development.
- iii. The rural development strategy includes incentives to encourage dispersed rural populations to organize themselves into ujamaa (Swahili for 'family') villages or communities engaged in cooperative or communal farming. The incentives take the form of basic infrastructure such as education, potable water supply, health services, and agricultural extension services.
- iv. The education plan supports the rural development program and the national objective of universal primary education (UPE) by 1989. The plan also regulates secondary and higher education in accordance with manpower needs, with a view to achieving self-sufficiency by 1980. The implementation of the plan has already been assisted by IDA. A first project financed in 1963 and successfully completed in 1967 helped the expansion of secondary education; a second credit in 1969 is assisting teacher and technical education together with a further expansion of secondary education; a third project financed in 1971, is assisting agricultural education. The second and third projects encountered initial delays but are now proceeding satisfactorily.
- v. Although the implementation of Tanzanian educational policies has generally been good, financial constraints suggest that UPE is unlikely until well after 1989. Immediate needs of the education system are the expansion of teacher training, medical education, training of skilled craftsmen and the integration of various types of rural education and training schemes. A new policy that aims at decentralization of the education system and emphasizes work-oriented education and training for youths and adults is now being implemented.
- vi. The proposed project is based on a review of the education sector, initiated by the Association, and carried out by the Overseas Liaison Committee of the American Council on Education. It would support educational development in line with the requirements indicated above by providing facilities to expand: (a) primary school teacher training; (b) diversified secondary education; (c) skilled worker training; (d) the training of medical doctors; and (e) basic education and training for adults and children in ujamaa villages. Specifically, it would provide buildings, furniture and equipment for:

- two new primary teacher training colleges and an extension to the national teacher orientation center at Bagamoyo.
- three new general secondary schools, with agricultural, commercial, craft and home science options,
- two new vocational training centers,
- extensions to the University of Dar es Salaam Faculty of Medicine at Muhimbili Hospital, Dar es Salaam, and the Rural Health Center, Bagamoyo, and
- eight new village community education centers.

vii. The total project cost is estimated at US\$14.6 million. The proposed credit would meet the estimated US\$5.9 million foreign exchange component of the project and US\$4.4 million (51%) of the local costs (US\$8.7 million). The credit would be apportioned as follows: US\$5.2 million for civil works, US\$1.2 million for furniture and equipment, US\$1.8 million for technical assistance and professional services, and US\$2.1 million, unallocated.

viii. The staff of the project unit already established in the Ministry of Education would be augmented so as to provide the capability for design, implementation, and supervision of the combined projects. Contracts for civil works (except for a minor part to be executed on a "self-help" basis), furniture and equipment would be awarded on the basis of international competitive bidding. It is likely that most civil works and furniture contracts would be won by local contractors. Nearly all equipment would be imported. 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. Implementation would be completed within five years of the effective date of the Credit Agreement.

ix. Subject to the conditions set down in paras. 6.01 - 6.03, the proposed project is suitable as a basis for an IDA credit of US\$10.3 million equivalent to the Government of Tanzania.

INTRODUCTION

1.01 The Government of Tanzania has received three IDA credits for education. The first, signed in December, 1963 (No. 45-TA) provided \$4.6 million for the expansion of general secondary education and was successfully completed in June, 1967. The second credit (No. 149-TA) of \$5.0 million was signed in May, 1969, and provides for the development of general secondary schools, including the introduction of practical subjects into the curriculum, the expansion of primary teacher training and the Dar es Salaam Technical College. After a somewhat slow start due to problems in the building industry, delayed delivery of construction materials and revision of sketch plans, implementation of the second education project is now proceeding satisfactorily. The third credit (No. 232-TA), signed in February 1971, provided \$3.3 million for the expansion of agricultural training; implementation has been delayed by lack of technical manpower and inability to survey sites in troubled areas near the Uganda border, but an accelerated construction program is expected to assure completion of the work by December, 1974 as originally scheduled.

1.02 In response to a Government request, a review of the education sector was undertaken in 1971 by the Overseas Liaison Committee of the American Council of Education. Its report was discussed with the Government by an IDA mission which visited Tanzania in January, 1972. The discussion led to broad agreement on the composition of a possible fourth education project which was appraised in June-July, 1972, by a mission composed of Messrs. R.F. McMahon (technical educator), F.C. Gamble (general educator), A.S. Naimie (architect) of the Bank, N. McEvers (economist, consultant), D.W. Eastwood (medical educator, consultant) and C. Gilpin (non-formal educator, consultant).

1.03 The objectives of Tanzanian educational strategy are as follows:

- (a) to give every child a primary education as soon as the financial circumstances of the Government permit, presently planned for 1989;
- (b) to provide vocational training so as to achieve self-sufficiency at all skill levels in the economy by 1980;
- (c) to provide secondary, technical and university education only to the extent justified by the estimated manpower requirements of the economy; and
- (d) to bring programs of non-formal education, on a continuing basis, within reach of the population, particularly in rural areas.

1.04 While the dates for achieving some of these targets may be too optimistic, the objectives are sound. The proposed project would assist in the realization of these goals by providing additional facilities for primary teacher training, expanding secondary education and vocational training, developing the Faculty of Medicine at the University of Dar es Salaam, and by introducing experimental community education centers into selected ujamaa ("family" in Swahili) villages.

II. THE SETTING

Socio-Economic Background

2.01 Tanzania has a land area of 937,000 sq. kms., some 13.5 million (1972) people and a population density of about 15 inhabitants per sq. km. (Kenya 19, Uganda 51). Most Tanzanians live on family smallholdings that are widely dispersed throughout rural areas; only 6% live in towns and cities. The population growth rate is 2.7% p.a. and the per capita GNP US\$105 (1971). Life expectancy averages 40-45 years and 45% of the population is less than 14 years old.

2.02 Some 90% of the total labor force works in agriculture, mostly in subsistence farming. Less than 10% of the total labor force are in the slowly growing wage employment sector: over two-thirds of the primary school leavers every year must seek a livelihood in the rural sector. On the other hand, there is still a shortage of local skilled manpower. In 1969, when the last comprehensive survey was carried out, Tanzanian citizens occupied only 34% of the posts requiring university or equivalent education and 85% of those requiring secondary education.

2.03 Agriculture, the main source of income and foreign exchange earnings, contributes 40% of Tanzania's GDP and 80% of its commodity exports. Manufacturing, mining, construction, transport and communications together account for 23% of GDP while public utilities, commerce, finance, government and other services account for 37%. Efforts to promote manufacturing have not as yet yielded significant results; growth of the economy depends heavily upon agriculture.

Development Strategy

2.04 President Nyerere's Arusha Declaration of 1967 defines the broad aims of Tanzanian development: to create a socialist economy and society devoid of tribal privilege and economic exploitation and to achieve rapid economic growth in order to improve the material and social well-being of the mass of the population. Foundations for socialism and for economic growth are to be established in the rural sector and strict priority is to be given to rural development. The strategy for achieving these aims calls for: (a) reduction of inequalities in the distribution of income; (b) public ownership and control of all major companies and firms; (c) modernization of agriculture and reduction in the size of the subsistence sector; and (d) growth of manufacturing mainly to support rural development.

2.05 In conjunction with other measures, a more equitable distribution of income is being sought through wage and price controls and by heavy taxes on higher income groups. The Government now owns or controls nearly all important enterprises. Private investment has declined sharply and many foreigners, a substantial number of whom were managers, have left the country. As a result, the shortage of managerial personnel for the public and private sectors has been exacerbated.

2.06 Reorganization of the rural sector on a cooperative basis is progressing; inhabitants of dispersed hamlets are moving into ujamaa villages, forming multipurpose agricultural cooperatives which would advance, after a period of government assistance, to financial self-sufficiency. The number of ujamaa villagers has now increased to 1.5 million or about 15% of Tanzania's entire rural population. Thus far, about 2% of ujamaa villages have reached the stage of viable cooperative units. An array of learning services, e.g., agricultural extension, community development, adult literacy, craft, health and nutrition training, has been extended to improve the villager's skills and capability for earning his livelihood and to enable the primary school leaver to create opportunities for self-employment - in short, to develop rural "self-reliance". These services have not yet been fully decentralized and coordinated in the field. The government's recent decentralization, which transferred much of the administrative apparatus and decision-making process from the capital to rural areas, may aggravate problems in the near future, but in the long run should facilitate the implementation of these programs.

2.07 Development planning provides for directing industrial investments to designated growth centers in the interior, which are to act as catalysts for rural development by generating demand for rural goods, employing labor from adjacent areas, processing local products and supplying consumer goods to local populations and some material inputs for agriculture. New investment in manufacturing has risen substantially and much of it has been directed to Mwanza, Tanga, Moshi and Arusha, which have become major regional growth centers. However, the shortage of skilled labor continues to be a constraint on the growth of manufacturing output.

III. EDUCATION AND TRAINING

The education system

3.01 A general description of the system, its structure, and the education pyramid is given in Appendix 1 and Charts 1 and 2. The 1971 primary school enrollment of 903,000 represented some 37% of the 7-13 age group. ^{1/} (Annex 1). Instruction is in Swahili. The number of periods in the primary school timetable (over 40 a week) is high and subject courses need consolidation. The pupil-teacher ratio is also high at 45:1 (Annex 2) and many of the teachers (Grade C) have only primary education plus a two-year training course. The statutory salaries of Grade A teachers, who have secondary education, are some 50% higher than Grade C teachers and, as may be expected, financial constraints prevent their appointment in greater numbers.

^{1/} Uganda 46% (1969), Kenya 56% (1968), Zambia 84% (1968).

3.02 Methods of reducing costs to allow universal primary education (UPE) by 1989 are being studied by the government in preparation for the next five-year plan. Based on forecasts of growth in government revenues and on the needs of other parts of the education sector, and assuming that present policies regarding length of course, size of classes, and teacher salaries remain unchanged, a projection of possible school enrollment increases (Annex 1) points to the difficulty of achieving UPE before the late 1990's. Cost savings to achieve UPE earlier could be effected by reducing the length of primary schooling from its present seven years or possibly by extending the present practice of half-day school in Grade 1 to the first four grades. However, the government recognizes that these modifications could adversely affect the quality of primary education.

3.03 Pre-service primary school teacher training is presently given in 21 colleges; their enrollment in 1971 was 4,200 and their output 2,400. Most courses require two years following primary education (Grade C teachers) or secondary education (Grade A teachers). About 600 students were enrolled in a one-year "crash" program the effectiveness of which has not yet been evaluated.

3.04 Secondary enrollments in public general and technical schools are controlled to accord with estimated manpower needs; in 1971 they totalled 32,600 or about 2% of the 14-19 years age group. Instruction is in English. The curriculum is still largely academic although progress is being made in the introduction of practical subjects, such as agricultural and commercial subjects, craft training and home science. A limited expansion is needed at the lower level to supply the middle level manpower required by the mid 1980's (para 4.03). Unit costs are high, due partly to the policy of providing boarding facilities for most pupils and partly to the low pupil-teacher ratio (19:1). Lower cycle secondary teachers are trained in the Dar es Salaam teachers college where the program includes practical subjects and home science. Enrollment in 1971 was 240, and outputs from the college and the university appear to be greater than the long term need for secondary level teachers even when calculated on the present low student-teacher ratio (Annex 2).

3.05 Vocational training is provided in Dar es Salaam at a center which opened in 1968 with UNDP/ILO support. It has a capacity of 300 places and an annual output of 150 craftsmen. The National Apprenticeship Scheme sponsored by the Ministry of Labor and small training centers operated by religious groups and parastatal organizations have an annual output of about 200, many of whom require further training before they become proficient as craftsmen.

3.06 Numerous short specialized courses for managers are provided by government departments and industrial concerns. The uncoordinated multiple efforts in management training have splintered training resources, resulting in duplication of training and inability to provide more advanced training in modern management techniques. An inventory of on-going programs and a master plan for management improvement programs are therefore urgently needed.

3.07 The Dar es Salaam Technical College is the only institution in Tanzania offering technician training; its 1971 enrollment in the 3-year full-time technician course was 420. The College is short of experienced teaching staff, partly because expatriate teachers have been phased out very rapidly. The shortage is being partially alleviated through bilateral technical assistance. With the assistance of the Federal Republic of Germany, the government is establishing a new technical college at Arusha and a Faculty of Engineering at the University of Dar es Salaam.

3.08 The University has faculties of Agriculture, Arts, Law, Medicine and Science. Its Department of Education trains graduate secondary school teachers in a three-year course; recent enrollments have averaged 600. The University Institute of Education provides curriculum development and in-service courses for practicing teachers. Development of a Faculty of Engineering (para 3.06) should assist Tanzanian industrial development. Pending the completion of the next Plan, investments in higher education should be directed only to the most obvious high priority needs.

3.09 Doctors are trained abroad and in the University's Faculty of Medicine at Muhimbili, Dar es Salaam. The Faculty of Medicine was founded in 1968 and the present facilities at Muhimbili hospital are sufficient to produce about 30 doctors a year. Medical specialists, dentists, pharmacists and dental assistants are trained abroad. The Ministry of Health trains all medical auxiliaries, including nurses. Enrollments and other details regarding various health education and training programs are given in Appendix II.

Education finance

3.10 Total expenditure on education in Tanzania amounted to 4.5% of GDP in 1970/71; this figure is normal when compared with other African countries but has risen rapidly in the recent past and is expected to further increase to 5.8% by 1984/85 (Annex 3). Virtually all expenditure in 1970/71 was financed by public resources. The share of private education is very small although, at the secondary level, its proportion is rising rapidly (Appendix I). Funds for education are channelled through the Ministry of Education. Small fees are charged in primary schools and no fees in secondary schools. University tuition and boarding fees are fully covered by Ministry of Education bursaries. Other Ministries (e.g., Agriculture, Health, Labor) finance specialized courses.

3.11 While the government's total expenditure grew at 16.5% p.a. during the period 1964/65 - 1970/71, its annual outlays for education increased 14.5% p.a., the slower growth due primarily to financial constraints on capital expenditure. As a result, the proportion of government expenditure for education fell from 18% to 16%. However, recurrent spending on education continued to grow at a rapid rate (17.6% p.a.) and absorbed an increasing share of the government's total recurrent expenditures: 21% in 1970/71 as compared with 17% in 1964.

3.12 For the Government's capital program under the Second Five-Year Plan (1969/70-1973/74), 11%, or 297 million shillings, was earmarked for the Ministry of Education. Of this amount, 138 million was scheduled for investment in the first two years of the Plan period, over half of it for primary and secondary school construction. However, financial constraints have led to a cut-back in the planned rate of investment and the Ministry of Education's actual capital outlays have totalled only 75 million shillings over the first two years of the Plan period. About 75% of the Ministry's capital expenditure was devoted to new primary schools and extensions to teacher training colleges and the University. Other ministries made significant investments in new agriculture training institutes, rural training centers and para-medical training facilities (Annex 4).

3.13 Tanzania receives assistance for education from a variety of sources, such as Sweden, Norway, Denmark, the Federal Republic of Germany, the United States, IDA and UNDP. During the First Five Year Plan period (1964/65-1968/69), external loans and credits for capital expenditures alone totalled US\$11.1 million. For the first three years of the Second Five Year Plan, 1969/70-1973/74, foreign assistance to capital expenditure is expected to total about US\$24 million.

Future expenditure on education

3.14 Forecasts of future expenditures (Annexes 3 and 4) are based upon the government's order of priorities for allocating resources to education, namely (a) to provide national self-sufficiency in the supply of skills at the middle and higher manpower levels, and (b) to use the remaining resources available for the achievement of UPE at the earliest date that such resources will permit. The estimate of available resources assumes that economic growth will average 5.7% p.a. through 1985. Recurrent expenditures on education by the government are expected to absorb about 24% of the government's total recurrent expenditures by 1984/85. Capital outlays will be especially heavy in the early years of the forecast period, as on-going projects to extend secondary school, teacher training and university facilities are completed. After 1974/75, however, capital expenditures on education will be devoted mainly to primary school building, for which labor will be donated on a local, self-help basis as heretofore. During the period of 1975/76-1984/85, capital outlays on education are expected to average 70 million shillings p.a. or roughly 5% of the Government's annual total capital expenditures. Together, recurrent and capital expenditures on education are expected to be 18% of total government expenditures by 1984/85.

3.15 Based on present policies, UPE by 1988/89 would require the government to allocate 36% of its total recurrent budget in that year to education alone. In all probability, Tanzania will not have sufficient resources to achieve UPE by the target year, 1989. The forecast described in the preceding paragraphs indicates that the government's financial resources would enable primary school enrollments to expand to 2.4 million pupils by 1984/85 or to 65% of the relevant age group in that year. However, to reach this level of enrollment, the government would have to devote 60% of its annual recurrent education budget to primary education by 1984/85. After providing 27% for

education and training related to manpower needs and 5% for administration, only 8% would be left available to finance non-formal education schemes which were to be a major element of Tanzania's education strategy (para 1.03 and Annex 4). Since the cost of UPE could retard development of non-formal training, the government is considering modification of the primary school system in order to obtain UPE at lower cost (para 3.02). It is also planning to base the development of non-formal training on the modified village primary school along the lines of the experimental "community education centers" included in the proposed project (paras 4.11 - 4.12).

IV. NEED FOR THE PROJECT

4.01 General secondary education. The latest manpower survey, completed in 1969 by the Ministry of Economic Affairs and Development Planning (DEVPLAN) covering wage employment in all sectors except estate agriculture, was the mission's basis for estimating future requirements. It showed that in 1969, 52,000 out of 255,000 wage earners were to be found in high and middle level occupations, classified as follows (Annex 5):

		<u>No.</u>	<u>Category</u>
<u>High Level</u>	Professional	5,300	A - Jobs normally requiring university degree or equivalent.
	Professional/ Sub-Professional	13,000	B - Jobs which require successful completion of 4 years of secondary education plus one to three years of further education or training.
<u>Middle Level</u>	Sub-Professional and Skilled Office Workers	33,700	C - Jobs which require successful completion of 4 years of secondary education.

About 34% of Category A and 85% of Category B jobs were held by Tanzanians (para 2.02).

4.02 DEVPLAN is now revising its 1970-1985 forecast of high/middle level manpower requirements (which assumed 6.5% GDP growth p.a.) in the light of actual economic performance since 1968 and future trends. A preliminary estimate of requirements assumes that GDP will average 5.7% growth p.a. during 1970-1985 with monetary GDP growing at 6.9% p.a. and that labor productivity will increase at 2.0% annually. The estimate also assumes a modest upgrading in the occupational structure, with Categories A, B and C

representing together 27% (20% in 1969) of wage employment in these sectors by 1985. On this basis, wage employment is estimated to grow to 573,000 by 1985 and the number of workers required in that year for Categories A, B and C will amount to 155,000. Assuming complete replacement of non-citizen personnel, manpower requirements for 1970-1985 are:

	<u>Replacement</u>	<u>Expansion</u>	<u>Total</u>
Category A	4,700	6,600	11,300
Category B	9,900	41,300	51,200
Category C	<u>11,000</u>	<u>55,000</u>	<u>66,000</u>
Total	<u>25,600</u>	<u>102,900</u>	<u>128,500</u>

4.03 The basic source of high and middle level manpower is the qualified output from secondary schools at Form IV. At this level the total qualified output from existing and presently planned public and private schools during 1970-1985 is estimated at 125,000, leaving a shortfall of 3,500. A limited further expansion of lower secondary education appears necessary if Tanzania is to achieve self-sufficiency at high and middle manpower levels in most areas by the mid-1980's. At Form VI level the output should be adequate to meet the needs of Category A jobs.

4.04 Primary teacher training. Although detailed enrollment targets will be worked out in connection with the next Plan, the orders of magnitude summarized in Annex 2 indicate that an average of 3,400 additional primary teachers per year over the period 1971-1985 will be needed. Government policy is to provide pre-service courses in a region other than the trainees' home regions. However, a primary teacher training college (PTTC) is needed in each region because of the importance of locally-based in-service training. The national need is sufficient to require at least one PTTC in each of the eighteen regions.

4.05 At present, some of the PTTCs are inadequately housed; some regions have several colleges, others have none. In 1976, when planned PTTC projects, including the proposed second IDA project, are completed, the total enrollment capacity will reach 5,400 and the output 3,000, assuming that the temporary one-year course is retained (para 3.03). The two PTTCs included in the proposed project would therefore provide the teachers required to support a reasonable increase in primary enrollments. As they would be located in regions where no PTTC at present exist, they would conform to government policy.

4.06 Skilled craftsmen. Few data exist on occupations at the middle and lower levels of wage employment, which are not included in Categories A, B and C above. It is estimated that industry, construction, transport and public utilities employed about 135,000 workers in 1969. This figure would rise to about 260,000 by 1980, assuming an average growth rate of 6.0% p.a. in employment and 8.0% p.a. in the output of these sectors. Some 10,000 workers employed in these sectors or 7.5% of the total were identified as skilled craftsmen. Tanzania's development would require that by 1980, at least 10% of the labor force employed in these sectors be skilled workers. The estimated net increases of 16,000 from 1970 to 1980, or 1,600 p.a. are therefore minimum skilled labor requirements.

4.07 Medical personnel. The government's strategy for the development of economical health services calls for Rural Health Centers, each with outlying dispensaries, to provide health services other than those requiring hospital care, and for rural hospitals at district and regional levels to provide major curative services. These basic programs would be complemented by health services at the national level, consultation hospitals at three major centers, and three hospitals specializing in tuberculosis, mental disease and obstetrics respectively.

4.08 It is known that the main constraint to the implementation of the government public health strategy (Appendix II) is the insufficient supply of medical doctors. In 1971 there were only 480 medical doctors in Tanzania (1 per 27,900 inhabitants, compared with 1 per 12,400 in Kenya, 1 per 14,000 in Zambia and 1 per 14,600 in Uganda), 320 of whom were expatriate. Over 500 were needed at the time for the rural services alone; consequently the health care given by para-medical personnel in rural areas suffered from lack of professional guidance. It is estimated that a total of 950 doctors by 1980, rising to 1,400 by the mid-1980's, are the desirable numbers required for the health care system to function at optimum efficiency (Annex 6 and Appendix II). Output of doctors from the present Medical Faculty at Dar es Salaam would fall significantly short of requirements.

4.09 In order to keep within planned overall recurrent expenditures, the government at cabinet level has decided:

- (i) to plan for a maximum of 700 doctors working in Tanzania by 1980, representing nearly 75% of optimum requirements. (No estimates have been made for subsequent years.); and
- (ii) to increase annual intakes to the Medical Faculty to a maximum of 64 students.

4.10 By 1980, the output from the Faculty coupled with the existing stock with due allowance for wastage, would make available about 400 doctors. The deficit of 300 doctors for the planned service would be met through overseas training of 200 doctors and employment of 100 noncitizen doctors provided through external assistance or expatriate service. The ensuing shortage of 250 doctors necessary to meet the 1980 optimum requirements would be alleviated by the use of assistant medical officers who would perform the duties of doctors in the less exacting positions in rural areas. The faculty can now admit only 35 students per annum of whom about 30 graduate and the proposed project would provide an extension to the Faculty of Medicine to accord with the cabinet's decision (ii) above.

4.11 Non-formal education. The broad objectives of the government's educational development strategy (para 1.03) include the extension of non-formal education and training for adults in support of the ujamaa village concept. The government has decided to base this development on the primary school, to minimize recurrent and capital costs. The primary schools would become community education centers (CEC) and complement the Rural Training

Centers which train village and community leaders. The recent decentralization of many government administrative services, including the transfer of primary school administration to regional and district levels, should make possible a closer coordination between the different agencies for agriculture, education, health and community development which would be involved in an effective rural adult education program.

4.12 Most of the instruction for adults will be given by primary school teachers, the instruction time to be obtained by reduction of primary pupil contact hours. The curriculum of the primary teacher training colleges is being broadened to include practical subjects - agriculture, crafts, home science - which are of particular relevance to the rural community. The services of the better trained teachers will be complementary to those provided by agricultural extension agents and health service workers, who would use the facilities of the CEC when visiting the villages. Villagers with special skills or talents will also teach in the CECs. The implementation of the program on an experimental basis would be possible only through the availability of CEC physical facilities, financed from other than the government's investment budget.

V. THE PROJECT

5.01 The proposed project would assist Tanzania's education strategy by developing education and training facilities for children and adults in ujamaa villages, expanding and improving pre-service and in-service training of primary school teachers, expanding secondary and vocational education, and providing additional facilities for training doctors. It would comprise:

(a) construction, furniture and equipment for:

	<u>Additional Student Places</u>	<u>Boarding Places</u>	<u>Staff Housing Units</u>
Three general secondary schools	1,920	1,260	72
Two pre-service primary teacher training colleges	960	720	48
Extensions to one in-service primary teacher training college	240	240	15
Two vocational training centers	600	-	-
Eight community education centers	3,000	-	-
Extensions to the Faculty of Medicine, University of Dar es Salaam and the Bagamoyo Rural Health Center	<u>145</u>	<u>120</u>	<u>33</u>
	<u>6,865</u>	<u>2,340</u>	<u>168</u>

- (b) a total of 49 man-years of technical assistance and 35 man-years of fellowships for (i) staff development at the Faculty of Medicine; (ii) a study of the needs for development and coordination of management training programs; and (iii) the strengthening of the project implementation unit (Appendix III).

Project Items

5.02 General secondary schools. Over the period 1970-1985 the shortfall of Form 4 graduates entering the labor force is expected to be about 3,500 (para 4.03). The proposed project would therefore include three general secondary schools which are expected to have an output of about 3,000 over the same period. While initially a small deficit may remain, it is considered that further expansion is inadvisable at this time because at capacity the annual output of 350 from the three schools would be above the average annual need of 250 over the whole period. The estimates of student places and output are based on an acceptable class size of 40.

5.03 The three schools would be identical with four streams in Forms 1-4. They would be located in Kibondo, Lindi and Maswa. Initially, because of the relative inexperience of the teaching staff, the class size would be 35. A diversified curriculum with agriculture, commerce, crafts, and home science options during the last two years of the four year course would be offered. The allocation of students to the schools would be made nation-wide, based on the results of the primary leaving examinations. Boarding would therefore be provided. Graduate teachers for the schools would come from the Faculty of Education, University of Dar es Salaam, and diploma level general teachers from the Chang'ombe Teacher Training College, which would also supply specialist teachers in commerce, crafts and home science. Specialist teachers of agriculture would come from the Butimba Teacher Training College and the Faculty of Agriculture, Morogoro.

5.04 Pre-service primary teacher training colleges (PTTCs). The deficit between primary teacher supply and demand over the next fifteen years is estimated at 400 p.a.(paras.4.04 and 4.05). The two new colleges included in the proposed project would meet this deficit. They could enroll 960 students at 40 students per class but present government policy is to limit PTTC class-units to 30 each in view of the limited experience of Tanzanian teacher educators. The enrollment in the colleges during their first years of operation would therefore amount to 720, providing an annual output of about 360. Full boarding facilities would be provided as would housing for about half the teaching staff. During negotiations the government gave an assurance that it would, within two years of the signing of the Credit Agreement, undertake an evaluation of the present one-year primary teacher training course (para 3.03) and draw up a rationalization plan for the primary teacher training program to determine, in accordance with, future primary teacher needs, the optimal size and location of each region's PTTC(s) and the most appropriate length and structure for the training program (para 4.05).

5.05 The proposed colleges would be built in the Mtwara and Mbeya regions where there are no PTTCs at present. Both regions are in the less developed southern areas of the country. They would serve as focal points for in-service training courses for the teachers in their respective regions and for commercial activities connected with rural development.

5.06 The curriculum would stress agricultural training, handicrafts and home science, all fields of particular importance to rural development. Applicants for the courses would have completed primary or lower secondary education. No shortage at either level is expected. The training program would be flexible to produce either Grade A or Grade C teachers, depending upon the Government's ability to finance the higher salaries of Grade A teachers. Teacher trainers to staff the PTTCs would be available from the Faculty of Education at the graduate level and from Chang'ombe (Dar es Salaam) and Butimba Teacher Training Colleges at the diploma level. Chang'ombe produces primary teacher trainers in craft work and home science and Butimba in agricultural subjects.

5.07 Extension to an in-service primary teacher training college. This College, located at Bagamoyo, some 40 miles north of Dar es Salaam, has been providing in-service courses for primary school teachers to help them assume the responsibilities of community leaders in ujamaa villages. The proximity of the College to Dar es Salaam enables the trainees, many of whom come from remote areas, to visit the capital and attend lectures by national leaders.

5.08 It is estimated that about 18,000 teachers require these courses. The proposed item would provide additional facilities to increase the capacity of the College from 120 to 360 students so that, with the present 4-week courses, each teacher would be able to attend a course about once every five years. College staff are specially selected from experienced staff of other teacher training colleges and other appropriate institutions, and extensive use is made of specialist part-time lecturers.

5.09 Vocational training centers (VTCs). The two proposed centers would help to alleviate the shortfall in the supply of skilled workers (para 4.06). Sited at Tanga and Mwanza in conformity with the policy of decentralizing industrial development (para 2.07), they would operate in the same manner as the Dar es Salaam VTC in which apprentices are given a 4-year course following primary education. Attendance at the VTC is full-time during the first year; during the following three years the apprentices are employed in industry and attend the VTC on a part-time day and evening basis. The new centers would each have a capacity of 300 trainees and an annual output of about 150 craftsmen. In addition to apprentice training, the new VTCs would also offer ad hoc courses to meet the special needs of industry.

5.10 The Dar es Salaam VTC is assisted by a UNDP/ILO project and by the Canadian International Development Agency (CIDA). It operates effectively and in close cooperation with industry. Until now it has been staffed almost entirely by CIDA and ILO experts but sufficient local instructors are being trained at the VTC and overseas to staff present and projected VTCs. However, in the initial stages technical assistance would be essential. The Government

has applied to UNDP for six experts (13 man-years) and for 24 fellowships, mainly for instructor training to cover workshop practice, instructor training, training systems and methods, supervisor training and vocational guidance. Discussions with UNDP indicate that this application will be favorably considered. It is also likely that CIDA is prepared to consider a government request for the provision of experts to cover mechanical, automobile, electrical and building trades. Hence, no difficulty is expected in the provision of suitable instructional staff.

5.11 Community education centers (CEC). This item would provide for the construction and equipment of eight CECs in developing ujamaa villages initially in the Dodoma region. They would be experimental and designed to support government plans for rural development (para 4.11). Eight village sites have been tentatively chosen. In each case the existing primary school is several miles away and is to be resited in the new village. The CECs would serve as primary schools and also include basic facilities for instructing resettled adults in village crafts, agricultural activities, work-oriented literacy, home science, and health care. Courses for adults would be held in the late afternoon and evening.

5.12 Dodoma has been selected for these pilot CECs because of the success of pioneer ujamaa villages in this area. Furthermore, the Region has an efficient Rural Training Center incorporating a mobile construction unit satisfactorily staffed and equipped to handle simple building construction. The unit augmented by technicians financed under the Credit, would build the CECs with materials, furniture and equipment supplied under the Credit with general supervision from the project implementation unit. Cost estimates have been based on the assumption that all labor would be provided by the villagers on a "self-help" basis.

5.13 Most of the instruction at the CECs would be done by primary school teachers who are now being trained in appropriate practical subjects at primary teacher training colleges. The teachers would be assisted by visiting specialists from the Rural Training Center and by the agricultural and rural development (home economics) assistants attached to each village.

5.14 Management development study. The most important obstacle to development is the lack of managerial and associated skills to implement Tanzania's national strategy. Present management education and training programs are in the early stages of development and are uncoordinated. They should be rationalized within the framework of a master plan for managerial and associated learning services. Two man-years of technical assistance on terms and conditions acceptable to the Association are therefore included in the proposed project to survey the needs for management education and training. This study would inventory on-going programs, evaluate their effectiveness and prepare a master plan for management training to serve all sectors of the economy.

5.15 Faculty of Medicine. This project item would provide additional facilities for the Faculty of Medicine at Muhimbili hospital in Dar es Salaam and for a Rural Health Center in Bagamoyo to permit the annual output of doctors to be increased from 30 to about 60 in line with government policy (para 4.10). The facilities in Bagamoyo, a small community, would give the students experience in the practice of community medicine. All the facilities to be provided would be geared to medical teaching and would consist of laboratories, workshops, seminar rooms, boarding facilities for the students and staff housing for a small proportion of the staff.

5.16 In addition to the training of doctors, maximum use of the extended facilities would be assured in the training of assistant medical officers, nurses and other medical auxiliaries all of whom would benefit from working in close association, an experience likely to be of considerable value in their future employment as members of rural medical aid teams.

5.17 The training of medical doctors lasts five years and graduates are bound to serve the government for at least five years thereafter. The teaching program is divided into three main components: (i) Basic Sciences; (ii) Clinical Medicine; and (iii) Community Medicine. The curriculum is designed to prepare predominantly for service in rural areas: emphasis is placed on diagnosis and treatment of common diseases, the surgical management of injuries and infection and public health preventive measures.

5.18 The present teaching staff numbers 52 of whom only ten are Tanzanians. By 1980 the Faculty would need a full and part-time staff of about 110 of whom it is expected that about 50 would be local. Recruitment of overseas staff would be made through bilateral technical assistance agencies and UNDP in association with WHO. It is anticipated that such assistance will be forthcoming. In the event that sufficient assistance does not become available, the project would include funds for 35 man-years of technical assistance to complement the assistance provided by other agencies. The 35 man-years provided represents about 2 man-years in specialties within the three main components listed in para 5.17 but would be deployed flexibly in those areas requiring assistance in program and curriculum development (Appendix III). The project would also include 35 man-years of fellowships for the training of Tanzanian teachers for the medical faculty. Assurances have been obtained that technical assistance specialists would be employed upon terms and conditions mutually satisfactory to the Borrower and the Association and that fellowships would be awarded to appropriately qualified candidates.

5.19 Muhimbili hospital presently operates under dual management. The Ministry of Health is responsible for the hospital and its associated clinical facilities while the Ministry of Education is responsible for the Faculty of Medicine and its physical plant located at Muhimbili. The government has given assurances that within six months after the date of the Credit Agreement it would submit to the Association a plan for the operation of Muhimbili Hospital as a teaching hospital for the expanded Faculty of Medicine, and introduce such changes as the Association might reasonably request.

Cost of the Project

5.20 Cost table. The total cost of the project is US\$14.6 million; the estimated costs and foreign exchange components of the various parts of the proposed project are given in Annex 7 and are summarized below:

<u>Const., Furn., Equip., Consultants' Services & Project Unit Expenses</u>	<u>Tanzanian Shillings</u>			<u>US Dollars</u>			<u>Percent of Total</u>
	<u>(millions)</u>			<u>(millions)</u>			
	<u>Local</u>	<u>Foreign</u>	<u>Total</u>	<u>Local</u>	<u>Foreign</u>	<u>Total</u>	
1. Three new general secondary schools (Maswa/Lindi/Kibondo)	20.06	8.92	28.98	2.81	1.25	4.06	28%
2. Two new pre-service primary colleges (Mtwara and Tukuyu)	12.16	5.07	17.23	1.70	0.71	2.41	17%
3. Two new vocational training centers (Mwanza and Tanga)	3.14	3.93	7.07	0.44	0.55	0.99	7%
4. Eight new community education centers (Dodoma District)	2.03	0.86	2.89	0.29	0.12	0.41	3%
5. Extension to one in-service primary teacher training college (Bagamoyo)	3.23	1.35	4.58	0.45	0.19	0.64	4%
6. Extensions to Faculty of Medicine (Dar es Salaam & Bagamoyo R.H.C.)	5.87	2.93	8.80	0.83	0.41	1.24	8%
7. Technical Assistance							
a) Faculty of Medicine	1.96	8.35	10.31	0.27	1.17	1.44	9%
b) Management Study	0.16	0.43	0.59	0.02	0.06	0.08	1%
c) Project implementation	0.53	2.21	2.74	0.07	0.31	0.38	3%
8. Contingencies	<u>13.07</u>	<u>7.85</u>	<u>20.92</u>	<u>1.83</u>	<u>1.10</u>	<u>2.93</u>	<u>20%</u>
TOTAL	<u>62.21</u>	<u>41.90</u>	<u>104.11</u>	<u>8.71</u>	<u>5.87</u>	<u>14.58</u>	<u>100%</u>

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

	Tanzanian Shillings (millions)			US Dollars (millions)			Percent of total
	Local	Foreign	Total	Local	Foreign	Total	
1. <u>Construction</u>							
Academic & communal facilities	18.97	7.28	26.25	2.66	1.02	3.68	25%
Boarding	8.65	3.35	12.00	1.21	0.47	1.68	12%
Staff housing	8.07	3.14	11.21	1.13	0.44	1.57	11%
Site development	6.00	2.36	8.36	0.84	0.33	1.17	8%
Consultants' services & Project Unit expenses	1.77	0.43	2.20	0.25	0.06	0.31	2%
Sub-total	<u>43.46</u>	<u>16.56</u>	<u>60.02</u>	<u>6.09</u>	<u>2.32</u>	<u>8.41</u>	<u>58%</u>
2. <u>Furniture</u>	2.41	0.79	3.20	0.34	0.11	0.45	3%
3. <u>Equipment</u>	0.62	5.71	6.33	0.09	0.80	0.89	6%
4. <u>Technical Assistance</u>							
a) Faculty of Medicine	1.96	8.35	10.31	0.27	1.17	1.44	9%
b) Management Study	0.16	0.43	0.59	0.02	0.06	0.08	1%
c) Project implementation	0.53	2.21	2.74	0.07	0.31	0.38	3%
5. <u>Contingencies</u>							
Unforeseen factors	4.54	2.28	6.82	0.64	0.32	0.96	7%
Price increases	8.53	5.57	14.10	1.19	0.78	1.97	13%
TOTAL	<u>62.21</u>	<u>41.90</u>	<u>104.11</u>	<u>8.71</u>	<u>5.87</u>	<u>14.58</u>	<u>100%</u>

The recurrent expenditure generated by the project is estimated at T. Shs. 24 million, or 3.3% of the 1979/80 projected educational budget.

5.22 General. Construction cost estimates have been derived from recent school and university building costs in Tanzania. The average cost per square foot amounts to US\$2.80 for the CECs, excluding labor costs, US\$7.00 per square foot for the Vocational Training Centers, US\$9.25 for the secondary schools and PTTCs and US\$14.70 per square foot for the Faculty of Medicine. The proposed schedules of accommodation for the physical facilities to be provided are functional and economical, e.g., utilization factors in the vocational training centers would be 85% for classrooms and 80% for workshops, based on a 40-hour working week. Furniture and equipment cost estimates are reasonable; detailed lists would be prepared during the design stage and reviewed by the Association before procurement.

5.23 Unit costs. The estimated capital costs for the project institutions are considered reasonable; e.g., the estimated costs of academic and communal facilities per student place in the secondary schools (about US\$1,000) compared with an estimated cost of about US\$720 in the second Tanzanian education project (Cr. 149-TA) signed in May 1969. In the intervening three years there has been a rapid price escalation and recently, in July, 1972, an increase in the minimum wage which is expected to affect project costs.

5.24 Contingencies. Contingency allowances are shown in detail in Annex 8. For unforeseen factors 10% has been added to the cost estimates of site development, construction, equipment and professional services and 5% to the cost estimates of furniture. Unit costs of 1972, in both local currency and foreign exchange, are expected to increase by 7-10% p.a. and therefore an additional 18% contingency has been included for civil works, 15% for furniture and equipment, 10% for professional services and 15% for technical assistance.

5.25 Foreign exchange components. The foreign exchange components have been calculated as follows: (a) site development and construction costs, 28%; (b) furniture, 25%; (c) equipment, 90%; (d) technical assistance, 81%; and (e) professional services, 20%. Including contingencies, the foreign exchange component is estimated at US\$5.9 million or 40% of the total project cost.

Project Implementation

5.26 Administration. The existing Project Unit, established in the Ministry of Education for implementation of the first and second education projects, would also be responsible for the overall supervision of the project and liaison with the Association. It would be augmented to enable it not only to issue tenders, evaluate bids and award contracts for civil works, but also to provide architectural services for all project institutions except the extension to the Faculty of Medicine. Technical assistance would be provided for the Project Unit to undertake these additional responsibilities. The Project Unit would comprise the following full time

staff: (i) a project coordinator, (ii) a deputy project coordinator, (iii) an accountant, (iv) a procurement officer, (v) four qualified architects (8 man years technical assistance), one of whom could function as project coordinator, (vi) a civil engineer (2-1/2 man years T.A.), (vii) a clerk of works (1-1/2 man year T.A.); all of the above to be appointed in consultation with the Association, (viii) draftsmen, (ix) three full-time building inspectors, and (x) adequate supporting staff. Consulting firms of quantity surveyors would be utilized to assist the Project Unit as required. Consulting architects specializing in the design of medical facilities would be employed for the master planning and design of the extension to the Medical Faculty. All consultants would be selected and employed on terms and conditions acceptable to the Association. The Credit would help finance, in addition to the staff mentioned under (v), (vi) and (vii) above, three building inspectors, draftsmen as required for the Project Unit and technicians for the mobile unit of the Community Education Center, appropriate supplementary expenses of the Project Unit. As a condition of effectiveness, the government should appoint the project coordinator.

5.27 Procurement. Except for civil works and locally manufactured construction materials at the CECs and VTCs, contracts for civil works, furniture and equipment would be awarded on the basis of international competitive bidding in accordance with the Association's guidelines for procurement. Construction work at the CECs and VTCs would not be suitable for international competitive bidding due to their small size and remote locations and the availability of voluntary labor at the village level. For the CECs, construction work would be performed by a mobile construction unit attached to the rural training center (para 5.12). Imported construction materials, furniture and equipment would be procured through international competitive bidding. Locally manufactured construction materials would be procured through local competitive bidding. Pre-qualification procedures for civil works contracts would be acceptable to the Association. All civil works contracts for the first and second education projects were won by local contractors and this is likely to be repeated.

5.28 The bulk of instructional equipment would be procured abroad and furniture locally. Contracts for books would be awarded in accordance with the normal book procurement procedures of the Borrower. Items would be grouped to the extent practicable to encourage competition and to permit bulk procurement. Domestic manufacturers would be accorded a preferential margin of 15%, or the existing rate of import duties, whichever is lower, above the C.I.F. price of competing importers.

5.29 Sites. Suitable sites have been selected and are available for the three secondary schools and two VTCs. Because all land in ujamaa villages is community owned, no problems in acquiring sites for the project CECs are anticipated. Land adjacent to their present sites is available for the extensions to the Bagamoyo Teacher Training College and the Medical Faculty.

5.30 Disbursements. A forecast of disbursement is shown in Annex 9. The proposed credit of US\$10.3 million would cover all foreign exchange costs (US\$5.9 million) and 51% (US\$4.4 million) of local costs. The credit would

finance 71% of the total estimated project cost (US\$14.6 million). Implementation would be completed within 5 years of the effective date of the Credit Agreement. Undisbursed funds would be subject to cancellation. Disbursement would be on the basis of:

- (a) 100% of the C.I.F. price of imported construction materials, equipment and furniture and of the ex-factory price of locally manufactured furniture and equipment;
- (b) 80% of total expenditure for technical assistance and professional services, supplemental project unit expenses; and
- (c) 65% of total expenditure for civil works and locally procured construction materials.

VI. RECOMMENDATIONS

6.01 During credit negotiations, assurances were obtained that the Borrower would within two years of the signing of the Credit Agreement undertake an evaluation of the present one-year primary teacher training course and draw up a rationalization plan for the primary teacher training program (para 5.04).

6.02 In addition to the customary conditions, a condition of effectiveness of the Credit would be the appointment of the project coordinator (para 5.26).

6.03 During negotiations the government agreed to provide within six months after the date of the Agreement a plan for the operation of Muhimbili Hospital as a teaching hospital for the expanded Faculty of Medicine and to introduce such modifications as the Association might reasonably request (para 5.19).

6.04 Subject to the conditions in paras 6.01 - 6.03 above, the proposed project constitutes a suitable basis for a Credit of US\$10.3 million to the Government of Tanzania for a term of 50 years including a 10 year grace period.

THE EDUCATION AND TRAINING SYSTEMAdministration

1. Public primary schools are directed by 18 Regional Education Officers operating through 64 District Education Officers. Secondary, technical, teacher training and higher education are under the direct control of the Ministry of National Education. Private schools are controlled by the government but receive no financial support. The Ministry of Education is generally well organized but has lost some able personnel to the regions during the recent moves to decentralize the government.

2. Primary education begins at age seven and is a seven year course (Standards I-VII). Swahili is the language of instruction but English is taught at all levels. Fees, varying from region to region, are charged; these range from 10 shillings per year in the lower grades to 60 shillings in the highest. Exemption is allowed in case of need. A promotion examination at grade 4 for pupils in rural schools is being progressively phased out and the last such examination will be held in 1973.

3. In the decade since independence (1961-71), enrollments in public schools have increased from nearly 500,000 to over 900,000, representing about 37% of the relevant age group. Grade I enrollment in 1971 amounted to about 48% of the children aged seven. Enrollment in private schools was estimated at nearly 30,000; some of these schools cater for minority groups. There were in total about 4,500 schools, 400 of them private.

4. Nearly 90% of primary school leavers terminate their formal education at this level and the curriculum is designed principally to meet their needs rather than for the minority who proceed to secondary schools. Most primary schools have a garden and some 20% have a practical subjects room. Increasing emphasis is being given to agriculture, home science and simple craft work.

5. General secondary education comprises a four-year lower secondary course (Forms I-IV) followed by two years pre-university (Forms V and VI). All post-primary education is in English and no fees are charged in public schools. Dropout and repetition rates are negligible. After completing Form IV pupils sit for the National School Certificate examination and at the end of Form VI for the National Higher School Certificate examination. These examinations were first instituted in 1971, replacing the East African examinations which themselves had replaced the Cambridge University examinations.

6. The enrollments in public secondary schools are geared to manpower needs. Total enrollment during the decade 1961-1971 nearly tripled to over 32,600 while at the pre-university level enrollments increased more than seven fold to over 3,000. Even so, secondary enrollments amounted in 1971

to only 1.9% of the 14-19 years age group, 2.5% at the lower level and 0.6% at the upper. Enrollments in private secondary schools in 1971 were one-third of those in public schools. This proportion is rapidly increasing; in 1969 private secondary school enrollment was only one-sixth of the public enrollment.

7. Secondary school standards are reasonably good. Over 60% of the teachers are trained Tanzanians (1971) as against only 15% in 1967. The curriculum is still largely academic though it has been adapted to the local background in such subjects as history, geography and biology. Increased emphasis will in future be given to practical subjects such as agriculture, commerce, craft training and home science.

8. Nearly three-fourths of secondary students are boarders; only in Dar es Salaam are there schools where the day pupils outnumber boarders. The need for boarding facilities arises from the low population density and the large catchment area of all secondary schools outside Dar es Salaam. In addition, secondary school pupils require facilities for study which are provided in boarding schools but which are lacking in many Tanzanian homes; the performance of boarding school pupils in examinations is considerably better than that of day students.

Primary Teachers and Teacher Training

9. In 1971 there were nearly 20,000 teachers in public primary schools and about 500 in private schools. About 6,000 of these teachers were Grade A (two years teacher training following completion of Form IV), some 12,700 were Grade C (two years training following completion of Standard VII) and the rest were unqualified. Government policy is to use Grade A teachers for the upper primary grades 5 through 7 and Grade C teachers for the lower grades. The salaries of Grade A teachers are on average 50% higher than those of Grade C.

10. In 1971 there were 21 Primary Teacher Training Colleges (PTTCs) offering pre-service training for primary teachers with an enrollment of 4,200 in the Grade A and C programs. In addition, in-service courses for practising teachers are given in the Bagamoyo College of National Education.

11. With the increased emphasis on regional development and autonomy the government plans one PTTC in each of the 18 Regions; new PTTCs are now under construction in Lindi and Singida and the second IDA credit will expand those in Korogwe and Katoke. Where there is more than one PTTC in a Region the smaller PTTC where facilities are inadequate are planned to be converted into other types of schools (e.g. primary schools); no timetable has yet been worked out for this rationalization.

12. With only 37% of the age group enrolled in primary schools and a high pupil/teacher ratio of 45:1 there is need for more teachers. The main constraint on expansion is financial. There is no lack of candidates for primary teacher training courses and the government could effect significant

economies by gradually eliminating Grade A teachers and establishing a new grade of "primary school teacher" to be paid on the Grade C scale irrespective of qualifications prior to admission to the PTTC source.

Secondary Teachers and Teacher Training

13. In 1971 there were 1,706 secondary school teachers in public secondary schools of whom 1,064 were trained Tanzanians. The student/teacher ratio is low at 19:1 and the government is reluctant to increase it in view of the relative inexperience of the Tanzanian teachers who are steadily replacing expatriate teachers. Nevertheless, this low ratio is difficult to justify in view of the country's financial position. In 1971 private secondary schools employed 405 teachers, giving a student-teacher ratio of 26.5 to 1.

14. Diploma level teachers for Forms I-IV are trained in a two-year course at the Chang'ombe (Dar es Salaam) Teacher Training College. Courses offered include training for technical subjects and domestic science. Total 1971 enrollment was 240. Graduate teachers are trained at the University in three-year courses; recent total enrollments have averaged 600. The entry to both diploma and graduate courses is the Higher School Certificate and planned outputs of teachers are adequate to meet requirements to 1980.

Technical Education and Vocational Training

15. The two secondary technical schools at Moshi and Ifundi provide 4-year post-primary courses with emphasis on engineering; the courses would also lead to the School Certificate, thereby allowing students to pursue higher education. The present enrollment is about 1,200 with the main development at Moshi where additions are being made to provide for Forms V and VI and leading to Higher School Certificate.

16. Supported by the Vocational Training Act, 1972, trade training is the responsibility of the Ministry of Labor and Social Welfare which has an agreement with UNDP to develop a National Industrial Training Program incorporating an apprenticeship scheme. The project is being executed by ILO with CIDA assistance and the first stage is scheduled to be completed in March, 1973. The Canadian and UNDP contributions amount to \$1.4 million of which nearly \$240,000 is for equipment and the remainder for expert assistance and fellowships. A second stage, to include development of vocational training centers at Tanga and Mwanza, is planned for execution during January, 1973, to June, 1975. The Government has asked UNDP for US\$479,000 for six experts and 24 fellowships and the Association has been asked to provide the relevant physical facilities. CIDA may also supply experts. The Vocational Training Center at Dar es Salaam has an output of 150 craftsmen p.a. supported by a technical teacher training scheme designed to meet the Program's future needs. Other training facilities with an output of about 200 p.a. are being developed using improvised accommodation.

17. Numerous short specialized courses for managers are provided by Government departments and industrial concerns. Considerable duplication of effort is apparent and a master plan, taking into account manpower needs for management training is urgently needed.

18. The only institute for higher technical education in Tanzania is the Dar es Salaam Technical College which operates full-time and part-time day and evening courses mostly at technician level. A diploma course at the professional level is being developed but would appear largely to duplicate the engineering course being developed at the University. Because of very rapid phasing out of expatriates the College is short of experienced engineering staff. Enrollment in the 3 year full-time technician course in 1971 was 420 and 13 were enrolled in the 3-year full-time diploma course which follows the technician course. The Federal Republic of Germany is assisting the development of a new technical college at Arusha to train technicians in 4-year courses of which three years would be full-time in the college and one-year in industry. There would be an intake of 120 students p.a. with an output of 100 technicians yearly.

19. Engineering training at the degree level takes place at the University of Nairobi or overseas but the Federal Republic of Germany is developing a Faculty of Engineering at the University of Dar es Salaam which is expected to open in July, 1973. Intake to the 4-year course after completing Form VI will be 120 students per year.

Educational Radio

20. Radio Tanzania broadcasts 12 hours of radio programs weekly for primary schools and 10 hours for secondary schools. The language of instruction are Swahili for primary schools and English for secondary schools. Subjects covered for secondary schools include English, history, civics, and science. There is no national television service and none is planned for the immediate future.

Higher Education

21. In July, 1970, the three constituent colleges of the University of East Africa became the three separate Universities of Makerere in Uganda, Nairobi in Kenya and Dar es Salaam in Tanzania. The University of Dar es Salaam comprises Faculties of Arts, Law, Medicine and Science in Dar itself and a Faculty of Agriculture at Morogoro some 120 miles away. The University also houses a Department of Education for the pre-service training of graduate secondary school teachers and an Institute of Education which gives in-service courses and works on curricula. Both degree and diploma courses are offered; the total enrollment is about 1,600. In addition, nearly 500 Tanzanian students are enrolled in degree or diploma courses in Makerere and Nairobi and a similar number in post-secondary courses overseas.

HEALTH EDUCATION

1. Although their precise effect on economic growth is difficult to measure, short life expectancy and a high incidence of illness in Tanzania adversely affect the productivity of the labor force. In Tanzania, 41% of the population is affected by tuberculosis of the lung. Child mortality is high: one child in ten dies before reaching 5 years of age in the rural areas, due to malnutrition, pneumonia or diarrhea. Infectious and parasitic diseases, including malaria, affect two-thirds of the country's inhabitants.

2. Prior to independence in 1961, health facilities in Tanzania consisted of a few urban hospitals supplemented by a small number of scattered health centers. This urban hospital-based system could not provide adequate curative nor preventive services to the mass of the rural population.

3. The Government's strategy is to develop an economical rural based system organized around: (a) a Rural Health Center with 5 outlying dispensaries per 50,000 population, designed to cater for the entire health needs of the family except those which can be provided only in hospital; and (b) rural hospital at the regional and district levels, equipped to provide major curative services. These facilities are complemented by health services at the national level, provided in consultation hospitals in Dar es Salaam, Moshi and Mwanza and in three government hospitals specializing in tuberculosis, mental disease and obstetrics respectively. By 1972, Tanzania had surpassed its targets on a nationwide basis for dispensaries and for rural hospital beds (1 per 1,000 population), although these facilities were unevenly spread and were well below minimum targets in some districts. However, the number of Rural Health Centers increased during 1969-1971 to only 40% of the required number. Further development will be aimed at (a) achieving the target for Rural Health Centers and (b) expanding rural facilities and dispensaries, as required for population growth and for equality of distribution. Tanzania can meet all its targets for rural health facilities within the next ten years, without having to increase the recent average rate of annual investment in this area. External aid will probably provide a substantial portion of investment requirements (up to 50%), as in the past. To finance the additional recurrent costs of operating the system, the Government has recently decided to increase its recurrent health budget by at least 10% p.a. (compared with 5.7 p.a., 1970/71-1972/73). This would raise the share of health in the total Government recurrent budget from 8% in 1972/73 to approximately 9.5% by 1980.

4. This strategy calls for medical auxiliaries to operate the country's health care facilities at all levels, under the overall supervision of physicians. Key auxiliary personnel are Medical Assistants (MAs) and Rural Medical Aides (RMAs) who operate, respectively, the rural health centers and the dispensaries. Together with Assistant Medical Officers, 1/

1/ An Assistant Medical Officer is an upgraded medical assistant.

MAs also staff the hospitals substituting to a large extent for physicians. A summary of Tanzania health education institutions is in Table 1.

5. The supply of auxiliary personnel has not been adequate for the proper staffing of Tanzania's health care facilities. However, in recent years, the training of auxiliaries has expanded considerably; furthermore, this training is expected to keep pace in the future with the country's expanding network of facilities. The annual output of MAs and RMAs was increased from 60 in 1965 to 150 in 1971 with the establishment of 3 new schools. As a result of extensions to five existing schools, now under way, and the construction of additional schools with German, Finnish and Swedish aid, the combined yearly output of MAs and RMAs will gradually increase to a level of 480 by 1978, which will be adequate to meet needed through 1985. The establishment of 5 new nurses' training schools will more than double the annual output of nurses from 170 in 1966 to 500 in 1974; no further expansion of nurse training capacity will be needed. Considerable progress has also been made in augmenting the supply of other categories of personnel, e.g., midwives, health officers, pharmacy assistants and laboratory technicians. The supply of auxiliaries should be sufficient in most categories to staff the country's Government and private facilities by the mid-1980's (Annex 6).

6. The role of the physician or Medical Officer (MO) is to manage the health care system as a whole and to serve as supervisor, exemplary practitioner and teacher for the cadre of auxiliaries. As leaders of Rural Medical Teams, MOs manage the system from regional and district medical headquarters and they direct the running of rural hospitals. A MO is also needed to supervise each rural health center complex, i.e., to supervise the administration of health care to about 10,000 families. To carry out these functions about 950 MOs will be needed by 1985 or one MO per 25 auxiliaries. An additional 500 will be required to staff Dar-es-Salaam hospitals, national consultation hospitals and the University Medical Faculty, as well as to direct the training of medical auxiliaries and allied staff in over 60 schools and centers. A total of about 1,400 doctors in government and private employment by the mid-1980's is the minimum number required for the health care system to function satisfactorily. However this figure cannot be attained and expatriate physicians cannot be replaced unless 1,300 new Tanzanian doctors become available for employment during 1972-1985.

7. Medical Officers are the one category of personnel in which supply is not keeping pace with development of the health system. At the end of 1971, there were in Tanzania about 480 doctors (1 per 27,000 inhabitants, compared with 1 per 12,400 in Kenya, 1 per 14,000 in Zambia and 1 per 14,600 in Uganda in 1969), 320 of whom were expatriates. Over 500 were needed at that time for rural services alone and consequently the health care given by auxiliaries in rural areas suffered from a lack of professional guidance. Doctors are presently trained in Dar es Salaam and in foreign medical facilities (including Makerere, where no places will be available to admit Tanzanians after 1977). The Dar es Salaam Faculty can admit only 35 students

per annum of whom about 30 graduate. The total supply of about 420 new MOs in 1972-1985 from the Faculty falls short of estimated needs by some 880, leaving unfilled 68% of the MO posts required by 1985. A deficit of this kind would jeopardize the development of Tanzania's health care system. Not only would MOs still be spread too thinly to give effective management and technical guidance to the system, but the training of auxiliaries would lack professional direction - resulting in lower quality personnel.

TECHNICAL ASSISTANCE

1. The proposed project would include 49 man-years of technical assistance and 35 man-years of external fellowships. The total cost is estimated to be \$1.91 million.

2. The program would consist of the following:

	<u>Cost - US\$ Equivalent</u>
(a) <u>Faculty of Medicine</u>	1,445,000

- 1) Medical specialists (35 man-years), to complement as necessary the assistance available from other agencies, for the development and adaptation of instructional programs and teaching methodology to local conditions, and the identification of appropriate reference books and materials. The 35 man-years provided represent about 2 man-years in each of the specialities within the three major components of the teaching program, as follows: follows:

(i) Basic Sciences, comprising anatomy-histology, physiology, biochemistry, microbiology, pharmacology and pathology; (ii) Clinical Medicine, comprising surgery-ophthalmology, otolaryngology, anaesthesiology, medicine, obstetrics and gynecology, child-health and pediatrics, and psychology; (iii) Community Medicine, comprising community health, epidemiology-biostatistics, behavioral sciences, and parasitology-entomology.

However, the assistance would be deployed flexibly in those areas requiring curricula development or additional staff.

- 2) Fellowships (35 man-years) for the training of Tanzanian teachers for the medical faculty.

(b) <u>Management Study</u>	82,000
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Management training specialists (2 man-years) to assist in surveying and evaluating the scope of on-going management training programs, identifying the needs for further development of training,

and drawing up a master plan for management education to serve all sectors of the economy.

- | | |
|--|---------|
| (c) <u>Project Unit</u> | 383,000 |
| 1) Four <u>architects</u> (8 man-years) | |
| 2) One <u>civil engineer</u> (2-1/2 man-years) | |
| 3) One <u>clerk of works</u> (1-1/2 man-years) | |

3. In view of potential technical assistance from bilateral and international agencies, the program would be flexible. Within the total amount allocated to technical assistance and subject to IDA agreement, the length of specialists' services could be varied as needs and circumstances may warrant over the project period. Assurances should be obtained that technical assistance specialists would be employed upon terms and conditions mutually satisfactory to the Borrower and the Association and that fellowships would be awarded to appropriately qualified candidates.

COMPARATIVE EDUCATION INDICATORS

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, however, no attempt is made to compare educational systems. Data presented in the following table have been collected largely by the Bank missions from government sources; the remainder are either estimates or data from UNESCO, ILO, and other international organizations. 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 basis of these data, the following qualifications should be borne in mind:

- "Equivalent" as defined in the table includes all education and training, formal and non-formal.
- "Primary" education refers to education of the first six years of schooling and is not necessarily the same as the secondary level regardless of type (e.g., general, technical, agricultural).
- "Secondary" education (Col. 10) includes enrollments in technical, commercial, agricultural, vocational and home-economic courses.
- "Literacy rates" (Col. 3) are usually based on country censuses. In many countries they are only approximations and it is doubtful that any uniform definition of "literate" has been followed consistently.
- "Public expenditure in education" (Cols. 4 and 6) refers to all capital and recurrent expenditures devoted to education by public and quasi-public agencies.
- "Enrollment ratio" (Cols. 7 and 9) refer to school year mean the percentage of eligible children enrolled full-time in the appropriate school, public and private, in the country. This ratio is calculated on the basis of error in the developing countries owing to variations in the accuracy of basic data (i.e., age-specific population and enrollment), enrollment of students in non-formal education, and the fact that students actually in school. Overaged students whose inclusion is indicated by footnotes also can include the ratios.

ADVANCED

Country	Year	Population (billions)	GDP/CAPITA (US \$)	Literacy (% of Adults)	Public Expenditure on Education (% of GDP)	% of GDP Devoted to Public Expenditure	% of Total Public Expenditure on Education	Primary School Enrollment per 1000	Secondary Enrollment per 1000	Secondary Enrollment per 1000 (Vocational Schools)	Secondary Students per 1000 (Full-time Equivalent)	Higher Enrollment in Agriculture, Engineering	Annual Output from Higher Education 100,000 Population
Canada	70	24.0	2,010 F	99	73	4.3	5.9	99	24	60	12	24	77.3
Germany, Fed. Rep.	70	21.4	2,920 F	99	300	3.1	22.5	99	80 D	12	17	9	51.3
France	70	47.4	2,920 F	99	300	3.1	22.5	99	80 D	12	17	9	51.3
Italy	70	47.4	2,920 F	99	300	3.1	22.5	99	80 D	12	17	9	51.3
Japan	70	100.4 F	1,920 F	99	50 C	3.9	9.1 D	96	28	28	21	21	308
Sweden	69	13.0 F	2,430 F	99	180	7.2	20.0	99	26	66	19	25	230
New Zealand	71	2.8 F	2,700 F	99	180	7.2	20.0	99	26	66	19	25	230
Norway	71	2.8 F	2,700 F	99	180	7.2	20.0	99	26	66	19	25	230
Denmark	70	4.5 F	2,650 F	99	180	7.2	20.0	99	26	66	19	25	230
Finland	69	4.5 F	2,650 F	99	180	7.2	20.0	99	26	66	19	25	230
Switzerland	69	5.7 F	2,270 F	97	230 D	5.8	14.5	99 D	16	75	27	10	180
U.S.A.	70	204.8	4,950	99	233	5.8	13.8	98	28	58	18	16	188.8
U.S.A.	70	204.8	4,950	99	233	5.8	13.8	98	28	58	18	16	188.8

AFRICA

1. Algeria	70	14.3	360	23.5	35	10.5	20.0	51	42	22	20	20	6
2. Congo (Brazzaville)	70	1.6	160	...	5	3.0	20.0	74	48	8	8	4	7
3. Cote d'Ivoire	70	1.6	160	...	5	3.0	20.0	74	48	8	8	4	7
4. Egypt	70	1.6	160	...	5	3.0	20.0	74	48	8	8	4	7
5. Ghana	70	1.6	160	...	5	3.0	20.0	74	48	8	8	4	7
6. Guinea	70	1.6	160	...	5	3.0	20.0	74	48	8	8	4	7
7. Kenya	70	1.6	160	...	5	3.0	20.0	74	48	8	8	4	7
8. Nigeria	70	1.6	160	...	5	3.0	20.0	74	48	8	8	4	7
9. Senegal	70	1.6	160	...	5	3.0	20.0	74	48	8	8	4	7
10. Sierra Leone	70	1.6	160	...	5	3.0	20.0	74	48	8	8	4	7
11. Sudan	70	1.6	160	...	5	3.0	20.0	74	48	8	8	4	7
12. Tanzania	70	1.6	160	...	5	3.0	20.0	74	48	8	8	4	7
13. Uganda	70	1.6	160	...	5	3.0	20.0	74	48	8	8	4	7
14. Zambia	70	1.6	160	...	5	3.0	20.0	74	48	8	8	4	7
15. Zimbabwe	70	1.6	160	...	5	3.0	20.0	74	48	8	8	4	7

AMERICA AND CARIBBEAN

16. Dominican Republic	69	4.1 F	365 F	55	6	2.9 F	17.0	80	16	17	1	10	16 C
17. Haiti	68	3.0 F	300 F	49	10 B	3.0 B	25.4 C	31	15	22	26	15	7 A
18. Jamaica	68	5.7 F	360 F	86	34	4.4	17.6	68	6	6	26	10	4.3
19. Mexico	69	1.9 F	670 F	86	24	4.4	17.6	68	6	6	26	10	4.3
20. Trinidad and Tobago	70	50.7 F	670 F	76	24	2.6	19.1 Q	71	11	9	23	3	2.6 C
21. Venezuela	69	2.0 F	900 F	90	40	5.1	18.9	95	35	11	25	25	2.6 C

ASIA

22. India	71	14.0 F	350 F	73	15	4.2	19.0	96 F	52 F	16 F	35 F	27 F	179
23. Indonesia	71	13.5 F	380 F	57	11 Q	3.1	10.8 B	62	33	23	23	11	52.4 F
24. Korea	70	2.3 F	250 F	26	19	6.7	15.3	64	25	3	26	17	19 F
25. Japan	70	113.0 F	2,920 F	99	7.3	3.9	9.1 D	96	25	22	22	22	308
26. Korea	71	31.8 F	2,500 F	99	13.0	7.6	16.7	100 X	35	46	9	1	308
27. Taiwan	71	23.7 F	2,500 F	99	13.0	7.6	16.7	100 X	35	46	9	1	308
28. Thailand	70	10.9 F	250 F	88	12	4.7	18.4 E	89 X	31	16	16	10	182
29. Philippines	70	10.9 F	250 F	88	12	4.7	18.4 E	89 X	31	16	16	10	182
30. Singapore	70	2.1 F	930 F	75	30	3.4	16.1	90 X	30	12	36	25	182
31. Thailand	71	36.2 F	200 F	71	8 V	4.1 V	17.1	83 X	34	13	25	15	182
32. Turkey	69	35.4 F	390 F	48 A	9	3.5	17.1	92 X	42	14	35	26	41

Summary for Developing Countries

Number of Countries	Range	Quartiles: Upper	Quartiles: Lower
46	(5-98)	75	25
52	(1-59)	17	6
51	(1.4-6.7)	4.7	3.2
30	(6.3-29.0)	21.0	15.0
53	(0-119)	89	46
53	(22-72)	46	33
53	(1-59)	29	8
52	(1-09)	22	5
51	(13-38)	29	20
47	(1-38)	18	10
45	(0-457)	46	6

World Tables (IBRD) Provisional Figures

Columns (3)-(9) and (11): IBRD Missions
 Columns (10)-(12) and (13): UNESCO Statistical Yearbook and IBRD Missions

Notes: A = 1965 or before
 B = 1966
 C = 1967
 D = 1968
 E = 1969
 F = 1970
 G = 1971
 X = Including private expenditure
 Y = Including overaged students
 Z = UNESCO sources

Abbreviations: ... Data unavailable
 0 Negligible nil or negligible
 ? Questionable
 * Includes part-time students

T A N Z A N I A

PUBLIC PRIMARY AND GENERAL SECONDARY SCHOOLS. ENROLLMENTS 1968 - 1971 AND PROJECTED

ENROLLMENTS 1975, 1980, 1985.

	<u>Grade</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1975</u>	<u>1980</u>	<u>1985</u>
P R I M A R Y	7 - year old	364,000	374,000	384,000	394,000	438,000	508,000	590,000
	% enrolled Grade 1	43	42	45	48	60	68	75
	1	156,802	157,986	172,596	190,091	262,000	347,000	440,000
	2	148,188	145,487	152,234	166,590	238,000	314,000	410,000
	3	143,353	141,389	141,734	149,305	210,000	282,000	385,000
	4	136,449	137,571	138,458	138,246	190,000	247,000	345,000
	<u>Total 1 - 4</u>	584,792	582,433	605,022	644,232	900,000	1,190,000	1,580,000
	5	67,417	71,198	88,614	102,608	165,000	225,000	305,000
	6	57,579	61,688	68,714	85,267	145,000	199,000	270,000
	7	55,381	60,790	65,624	70,502	130,000	186,000	245,000
<u>Total 5 - 7</u>	180,377	193,676	222,952	258,377	440,000	610,000	820,000	
<u>Grand total</u>	765,169	776,109	827,974	902,609	1,340,000	1,800,000	2,400,000	
% admitted to secondary	13.5	9.5	12	11.5	7	5	4	
S E C O N D A R Y	8	6,989	7,149	7,372	7,570	8,500	9,300 ^{1/}	9,300
	9	6,710	7,086	7,148	7,623	8,400	9,200	9,200
	10	6,438	6,759	7,089	7,322	8,300	9,100	9,100
	11	5,763	6,328	6,713	7,044	8,200	9,000	9,000
	<u>Total 8 - 11</u>	25,900	27,322	28,322	29,559	33,400	36,600	36,600
	12	1,214	1,410	1,506	1,608	2,000	2,100	2,100
	13	929	1,226	1,339	1,436	2,000	2,000	2,000
	<u>Total 12 - 13</u>	2,143	2,636	2,845	3,044	4,000	4,100	4,100
	<u>Grand total</u>	28,043	29,958	31,167	32,603	37,400	40,700	40,700

Sources: Statistics: Ministry of National Education.

Projections: Mission calculations based on manpower needs and financial constraints

^{1/} Increased capacity over 1971 enrollments of 8,100, comprising 6,100 places from Norad schools and the second IDA credit and 2,000 places from the proposed project.

T A N Z A N I A: PUBLIC PRIMARY AND SECONDARY TEACHER REQUIREMENTS

AND SUPPLY 1971 - 1985

	1971 (Actual)	1985 (Projected)	Needs 1971 - 1985			Total	Supply ^{2/}	Deficit
			Expansion	Attrition ^{1/}	Localization			
<u>Primary education</u>								
Grades 1 -4 enrollment	644,232	1,580,000						
Pupil/teacher ratio	51	45						
Grade C teachers	12,700	35,100	22,400	11,500	-)			
)			
Grades 5 - 7 enrollment	258,377	820,000				54,300	43,000	11,300
Pupil/teacher ratio	39	40)			
Grade A teachers	6,600	20,500	13,900	6,500	-)			
)			
<u>Secondary education</u>								
Enrollment	32,603	40,700						
Student/teacher ratio	19	19						
Number of teachers	1,706	2,140	434	773	625	1,830	5,000	3,170 (excess)
Citizen teachers	1,081	2,140						
Non-citizen teachers	625	-						

1/ Attrition calculated at 3% of stock.

2/ From existing and planned institutions excluding the project teacher training colleges.

TANZANIA

Expenditures on Education and Training
(Millions of Tanzanian Shillings)

	1964/65	1968/69	1969/70	1970/71	1971/72 ^{1/}	1972/73 ^{1/}	Projected ^{2/}		
							1974/75	1979/80	1984/85
<u>RECURRENT</u>									
Ministry of Education	119.4	200.6	247.3	283.0	311.6	337.7	428.3	648.7	985.0
Other Ministries	10.0	12.3	42.3	59.0	64.1	76.3	80.0	82.3	95.0
Sub-Total	129.4	212.9	289.6	342.0	375.7	414.0	508.3	731.0	1,080.0
Central Government									
Current Revenue	840.0	1,270.0	1,577.0	1,683.0	1,875.0	2,045.0	2,380.0	3,150.0	4,633.0
% Education Expenditures	15.4	16.7	18.3	20.3	20.0	20.2	21.4	23.2	23.3
Central Government									
Recurrent Expenditures ^{3/}	776.1	1,186.0	1,527.0	1,631.0	1,824.0	1,990.0	2,270.0	3,000.0	4,500.0
% Education	16.7	17.5	19.0	21.0	20.6	20.8	22.4	24.4	24.0
Volunteer Agencies and Local Authorities	43.5	58.0	30.0	9.8	-0-	-0-	-0-	-0-	-0-
Total Recurrent	172.9	270.9	319.6	351.8	375.7	414.0	508.3	731.0	1,080.0
<u>CAPITAL</u>									
Ministry of Education	31.0	7.7	29.1	45.5	58.6	85.1 ^{5/}	50.0	62.1	61.0
Other Ministries	18.8	20.7	23.2	17.1	19.0	39.7 ^{5/}	11.0	3.0	26.0
Total Capital	49.8	28.4	52.3	62.6	77.6	124.8	61.0	65.1	87.0
Central Government									
Capital Expenditures ^{4/}	204.0	460.5	611.0	829.0	802.0	978.0	1,070.0	1,355.0	1,871.0
% of Education	24.4	6.2	8.6	7.6	9.7	13.0	5.7	4.8	4.6
<u>TOTAL RECURRENT AND CAPITAL</u>									
Central Government Expenditures on Education	179.2	241.3	341.9	404.6	453.3	538.8	569.3	796.1	1,167.0
Total Central Government Expenditures	980.1	1,646.5	2,138.0	2,460.0	2,626.0	2,968.0	3,340.0	4,355.0	6,371.0
% Education	18.3	14.7	16.0	16.4	17.3	18.2	17.0	18.2	18.3
Total Expenditures on Education	227.7	299.3	371.9	414.4	453.3	538.8	569.3	796.1	1,167.0
GDP	6,156.0	8,265.0	8,818.0	9,300.0	9,790.0	9,900.0	11,554.0	15,161.0	20,290.0
% Education	3.6	3.6	4.2	4.5	4.6	5.4	5.0	5.3	5.8
Monetary GDP	4,350.0	6,043.0	6,522.0	6,882.0	7,294.0	7,600.0	8,849.0	11,990.0	18,000.0
% Education	5.1	5.0	5.7	6.0	6.2	7.0	6.4	6.6	6.5

Sources: Ministries of Education, Health, Finance and Economic Affairs, and Development Planning

^{1/} Approved budget and annual plan estimates.

^{2/} Mission estimates.

^{3/} Includes Consolidated Fund Services.

^{4/} Excludes Tazara.

^{5/} Includes Proposed IDA Project

TANZANIA

Central Government Expenditures on Education and Training
(Millions of Tanzanian Shillings)

	1969/70	1970/71	1971/72 ^{1/}	1972/73 ^{1/}	%	Projected		1979/80	1984/85	%
						1974/75	%			
RECURRENT										
<u>Ministry of Education</u>										
Primary Education	124.3	140.0	158.8	167.3	49.5	220.0	51.4	377.2	641.0	65.0
Secondary Education	) 56.3	) 58.1	52.3	54.7	16.2	60.7	14.2	73.3	91.0	9.2
Technical Education			8.2	8.8	2.7	12.0	2.8	15.5	17.9	1.8
Teacher Training	15.0	17.8	16.8	23.4	6.9	35.3	8.2	39.4	44.2	4.5
University	31.5	40.7	43.9	46.8	13.9	57.5	13.4	87.0	116.9	12.0
of which Medical										
Faculty, DES	4.7	6.0	7.3	9.0		11.0		19.0	27.0	
Adult Education	2.5	7.8	13.1	17.7	5.2	18.0	4.2	16.0	16.0	1.5
General and Administration	17.7	18.8	18.5	19.0	5.6	24.8	5.8	40.0	58.0	5.0
Sub-Total, Ministry of Education	247.3	283.2	311.6	337.7	100.0	428.3	100.0	648.7	985.0	100.0
<u>Other Ministries</u>										
Agriculture	19.4	31.4	26.6	31.5		32.4		27.6	39.5	
Cooperative, Farmer & other Training	18.6	30.7	25.9	30.6		31.2		26.2	29.0	
Agriculture Institutes	0.8	0.7	0.7	0.9		1.2		1.4	1.5	
Labor	1.5	2.0	2.8	3.0		3.1		3.2	3.4	
Apprenticeship Scheme, Productivity Institute & Other Training	0.8	1.1	1.6	1.1		1.1		0.9	1.0	
National Industrial Training Program (Vocational Training Centers)	0.8	0.9	1.2	1.9		2.0		2.3	2.4	
Rural Development	9.2	7.6	8.1	9.1		11.3		16.3	18.8	
Rural Training Centers	1.7	1.5	2.6	3.6		4.4		9.6	10.8	
Other	7.5	6.1	5.5	5.5		6.9		6.7	8.0	
Health -- Medical Auxiliary and Other Training	1.9	3.3	4.9	5.2		6.0		8.5	12.1	
Natural Resources -- Fisheries and Forestry Technician Training	4.5	5.7	9.1	9.7		10.4		12.7	15.2	
Other Training Programs -- Civil Service, Police, etc.	5.7	9.0	12.6	17.8		16.8		14.0	15.0	
Sub-Total, Other Ministries	42.3	49.0	64.1	76.3		90.0		82.3	95.0	
<u>Total Recurrent</u>	289.6	342.2	375.7	414.0		508.3		731.0	1,080.0	
% Allocated to Non- ^{2/} Formal Training	13.0	16.9	17.0	17.5		14.5		10.5	7.8	
CAPITAL										
<u>Ministry of Education</u>										
Primary Education	14.7	20.1	9.0	15.0		48.0		50.0	50.0	
Secondary Education	) 2.9	) 0.2	8.8	30.3	34.1			7.0	7.0	
Technical Education			0.7	5.8						
Teacher Training	4.6	7.3	9.5	12.1				5.1		
University	3.4	5.1	7.7	18.1		2.0			4.0	
Adult Education	0.7	2.0	1.0							
Other	2.8	2.0	0.4							
Sub-Total	29.1	45.5	58.6	85.1		50.0		62.1	61.0	
<u>Other Ministries</u>										
Agriculture	3.7	1.0	2.0	11.6		5.0			10.0	
Labor	0.8	3.0	3.9	7.1		2.0			5.0	
Rural Development	3.2	3.0	4.0	5.6				3.0	3.0	
Health	1.0	4.7	2.8			4.0			8.0	
Other Training	14.5	5.4	9.1	12.6						
Sub-Total	23.2	17.1	19.0	39.7		11.0		3.0	26.0	
<u>Total Capital</u>	52.3	62.6	77.6	124.8		61.0		65.1	87.0	
GRAND TOTAL	341.9	404.8	453.3	538.8		569.3		796.1	1,167.0	

Sources: Ministries of Education, Finance, Health, Economic Affairs and Development Planning and Mission Estimates

^{1/} Approved budget estimate

^{2/} Includes: Cooperatives and farm training, rural development, adult education, vocational trade centers, government in-service schemes.

TANZANIA
HIGH AND MIDDLE LEVEL MANPOWER REQUIREMENTS

1970 - 1985

OCCUPATIONAL CATEGORY ^{1/}	Requirements 1970 - 1974				Requirements 1975 - 1985				Total Requirements 1970-1985				
	1969 Stock	Replacement Citizen Attrition	Local- ization	New Job Creation	Total New Entries Required	Need 1974	Replacement Citizen Attrition	Local- ization	New Job Creation	Total New Entries Required	Need 1985	Replace- ment	New Job Creation	Total New Entries
A. Citizens	1,800	150			4,650	6,300	1,050		6,600	11,850	1,200		
Non-Citizens	3,450		2,000		-0-	1,450	1,450		-0-	-0-	3,450		
Total	5,250			2,500	4,650	7,750		4,100	6,600	11,850	4,650	6,600	11,250
B. Citizens	11,050	950			13,800	23,950	7,100		37,400	54,200	8,050		
Non-Citizens	1,900		900		-0-	1,000	1,000		-0-	-0-	1,900		
Total	12,950			11,950	13,800	24,950		29,300	37,400	54,200	9,950	41,250	51,200
C. Citizens	29,750	900			16,750	45,600	6,150		49,250	88,700	7,050		
Non-Citizens	3,950		1,600		-0-	2,350	2,350		-0-	-0-	3,950		
Total	33,700			14,250	16,750	47,950		40,750	49,250	88,700	11,000	55,000	66,000
TOTAL													
Citizens	42,600	2,000			35,200	75,800	14,300		93,250	154,750	16,300		
Non-Citizens	9,300		4,500		-0-	4,800	4,800		-0-	-0-	9,300		
Total	51,900			28,700	35,200	80,600		74,150	93,250	154,750	25,600	102,850	128,450

Source: IDA staff estimate based on data supplied by the Manpower Planning Division of the Ministry of Economic Affairs and Development Planning.

- ^{1/} Category A: Jobs normally requiring a University degree or equivalent.
 Category B: Jobs which require successful completion of Form IV (School Leaving Certificate) plus one to three years of formal, post-secondary education or training.
 Category C: Jobs which require successful completion of Form IV (School Leaving Certificate).

T A N Z A N I A

NEED AND SUPPLY OF MEDICAL PERSONNEL

Occupation	1971 Stock ^{1/}	Requirements 1972-1985				1985 Needs	Estimated Supply from Existing Institutions 1971-1984	Balance
		Citizen Attrition	Local- ization	Additional Requirements	Total New Entries Required 1972-85			
Medical Officers	480	50	220	940	1,310	1,420	420	- 890
Assistant Medical Officers	120	30		540	570	660	560	- 10
Medical Assistants	290	80		1,340	1,420	1,630	1,520	+ 100
Rural Medical Aids	580	100		2,890	2,990	3,470	2,920	- 70
Grade "A" Nurses	1,020	270	400	1,380	2,050	2,400	1,950	- 100
Grade "B" Nurses	2,100	380	10	2,310	2,700	4,410	2,720	+ 20
Nurse Midwives	350	70		440	510	790	420	- 90
Nursing Assistants	1,610	290		3,250	3,540	4,860	3,500	- 40
Health Officers	130	20		720	740	850	670	- 70
Laboratory Technicians	100	20		630	650	730	500	- 150
Village Midwives	700	130		1,000	1,130	1,700	1,100	- 30
Health Official Auxiliaries	200	30		2,190	2,220	2,390	1,800	- 420
Pharmacy Assistants	100	30		230	260	330	180	- 80
Laboratory Assistants	70	10		410	420	480	400	- 20
Dispensing Auxiliaries ^{2/}	100					-0-		

Source: Mission estimate based on data and manpower projections supplied by the Planning Office of the Ministry of Health and by the Manpower Planning Division of the Ministry of Economic Affairs and Development Planning and on established national health policy and plans.

^{1/} Includes non-citizen personnel as follows: Medical Officers - 321, Grade "A" Nurses - 396, and Grade "B" Nurses - 9. In addition to the occupations listed above, 222 specialist personnel (of whom 114 were non-citizens) were also employed in 1971: dentists and dental assistants, pharmacists, nutrition officers, physio-therapists, occupational therapists, and psychiatric nurses.

^{2/} This category of personnel will be phased out entirely by 1975.

TANZANIA FOURTH EDUCATION PROJECT
SUMMARY OF ESTIMATED PROJECT COSTS
TShs. ('000) & US\$ ('000)

PROJECT ITEM		PLANNED CAPACITY		STAFF HOUSING UNITS	COST OF SITE DEVELOPMENT	COST OF BUILDINGS				FURNITURE	EQUIPMENT	TOTAL	CONSULTANTS' 1/ SERVICES & PROJECT UNIT EXPENSES	TECHNICAL ASSISTANCE	FOREIGN 3/ EXCHANGE VARIATION	TOTAL COST	
No.	Name	Training	Boarding			Academic & Communal	Boarding	Staff Housing	Total							TShs ('000)	US\$ ('000)
Three New General Secondary Schools																	
101	Maswa	640	420	24	1,364	3,280	1,963	1,577	6,820	500	493	9,177	230	-	113	9,520	1,333
102	Lindi	640	420	24	1,364	3,280	1,963	1,577	6,820	500	493	9,177	230	-	113	9,570	1,334
103	Kibondo	640	420	24	1,426	3,429	2,053	1,649	7,131	523	515	9,595	230	-	117	9,942	1,392
Sub-Total		1,920	1,260	72	4,154	9,989	5,979	4,803	20,771	1,523	1,501	27,949	690	-	343	28,982	4,059
Two New Pre-service Primary Teacher Training Colleges																	
201	Mtwara 2/	480	360	24	980	3,136	1,815	1,577	6,528	390	234	8,132	200	-	95	8,427	1,180
202	Tukuyu 2/	480	360	24	1,024	3,279	1,898	1,649	6,826	408	245	8,503	200	-	99	8,802	1,233
Sub-Total		960	720	48	2,004	6,415	3,713	3,226	13,354	798	479	16,635	400	-	194	17,229	2,413
Two New Vocational Training Center																	
301	Mwanza	300	-	-	300	1,547	-	-	1,547	60	1,500	3,407	50	-	76	3,533	495
302	Tanga	300	-	-	300	1,547	-	-	1,547	60	1,500	3,407	50	-	76	3,533	495
Sub-Total		600	-	-	600	3,094	-	-	3,094	120	3,000	6,814	100	-	152	7,066	990
401-408	Eight New Community Education Centers in Dodoma District	2,400	-	-	185	2,520	-	-	2,520	40	40	2,705	75	-	33	2,893	405
501	Extension to one in-service Primary Teacher Training College (Bagemoyo)	360	240	15	500	1,498	1,087	900	3,485	242	200	4,427	100	-	52	4,579	641
Extension to the Faculty of Medicine Dar es Salaam																	
601	A. Alterations and additions to basic science teaching facilities	300	120	32	455	392	943	2,088	3,423	317	70	4,265	486	-	61	4,812	674
601	B. Additions to the Muhimbili Hospital	-	-	-	263	1,747	-	-	1,747	100	750	2,860	252	-	40	3,152	441
602	C. New facilities for Bagemoyo Health Center	20	20	1	105	310	150	72	532	40	54	742	80	-	10	832	117
Sub-Total		320	140	33	824	2,449	1,093	2,160	5,702	457	884	7,867	818	-	111	8,796	1,232
Technical Assistance																	
A. Faculty of Medicine (Specialist & Fellowships)		-	-	-	-	-	-	-	-	-	-	-	-	9,996	318	10,314	1,445
B. Management Study		-	-	-	-	-	-	-	-	-	-	-	-	570	18	588	82
C. Project Implementation (Architect/Engineers & Equipment)		-	-	-	-	-	-	-	-	-	-	-	-	2,650	85	2,735	383
Sub-Total		-	-	-	-	-	-	-	-	-	-	-	-	13,216	421	13,637	1,910
Foreign Exchange Variation 3/		-	-	-	93	284	130	122	536	21	221	871	14	421	1,306	-	-
Total Project excluding Contingencies (TShs)		-	-	-	8,360	26,249	12,002	11,211	49,462	3,201	6,325	67,348	2,197	13,637	-	83,182	11,650
Contingency - Amount (TShs)		-	-	-	2,349	-	-	-	13,866	643	1,578	18,436	443	2,049	-	20,928	2,931
Total Project including Contingencies (TShs)		-	-	-	10,709	-	-	-	63,328	3,844	7,903	85,784	2,640	15,686	-	104,110	-
(US \$)		-	-	-	1,500	-	-	-	8,869	538	1,107	12,014	370	2,197	-	-	14,581
Foreign Exchange Component - Percentage		-	-	-	28%	-	-	-	28%	25%	90%	33%	20%	81%	-	40%	-
Foreign Exchange Amount - (TShs)		-	-	-	2,985	-	-	-	17,614	978	7,147	28,724	535	12,645	-	41,904	-
Foreign Exchange Amount - (US \$)		-	-	-	418	-	-	-	2,467	137	1,001	4,023	75	1,771	-	-	5,869

1/ Professional services for faculty of medicine and supplemental operational expenses of Project Unit.
2/ 480 at 40 per class or 360 at 30 per class - ref. paragraph 5.04 of Appraisal Report.
3/ Includes allowance for foreign exchange variation as a result of the February 1973 devaluation of the US\$.

TANZANIA IV
CONTINGENCY ALLOWANCES ^{/1}
 (US\$ 000's)

	Site Development		Buildings		Furniture		Equipment		Consultants' Services & Proj. Unit Expenses		Technical Assistance		TOTAL
	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	
Allowances for Physical Increases	10%	10%	10%	10%	5%	5%	10%	10%	10%	10%	-	-	-
Allowances for Price Increases	18%	18%	18%	18%	15%	15%	15%	15%	10%	10%	15%	15%	-
Total	28%	28%	28%	28%	20%	20%	25%	25%	20%	20%	15%	15%	-
Total Cost before Contingencies	845	326	5,002	1,925	334	114	85	801	245	63	370	1,540	11,650
Contingencies: Physical Increases -	85	33	500	195	17	6	8	80	25	6	-	-	955
Price Increases -	152	59	900	347	50	17	13	120	25	6	56	231	1,976
Total	237	92	1,400	542	67	23	21	200	50	12	56	231	2,931
TOTAL PROJECT COST	1,082	418	6,402	2,467	401	137	106	1,001	295	75	426	1,771	14,581

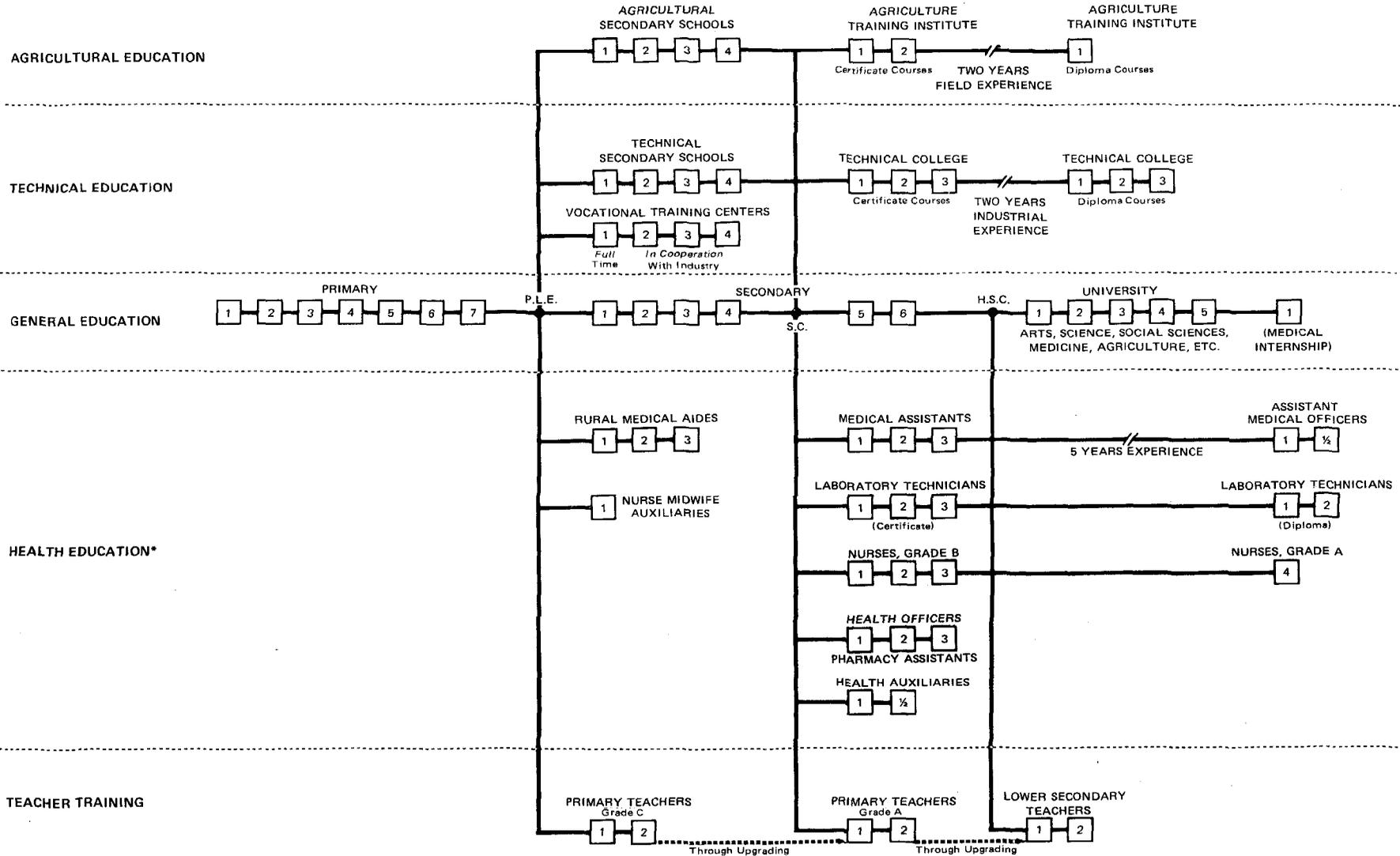
/1 Includes allowance for foreign exchange variation as a result of the February 1973 devaluation of the US\$.

T A N Z A N I AFourth Education Project - Forecast of Disbursements

Quarter ^{/1}	US\$ (000's)		
	Quarterly Disbursements	Accumulated Disbursements	Total Balance Undisbursed
1	-	-	10,300
2	-	-	10,300
3	50	50	10,250
4	250	300	10,000
5	360	660	9,640
6	500	1,160	9,140
7	280	1,440	8,860
8	370	1,810	8,490
9	1,420	3,230	7,070
10	790	4,020	6,280
11	720	4,740	5,560
12	580	5,320	4,980
13	860	6,180	4,120
14	930	7,110	3,190
15	1,460	8,570	1,730
16	360	8,930	1,370
17	160	9,090	1,210
18	160	9,250	1,050
19	860	10,110	190
20	190	10,300	0

^{/1} Starting from the date of effectiveness.

TANZANIA: STRUCTURE OF EDUCATION, 1971



* These courses include clinical practice.

P.L.E. - Primary Leaving Examination

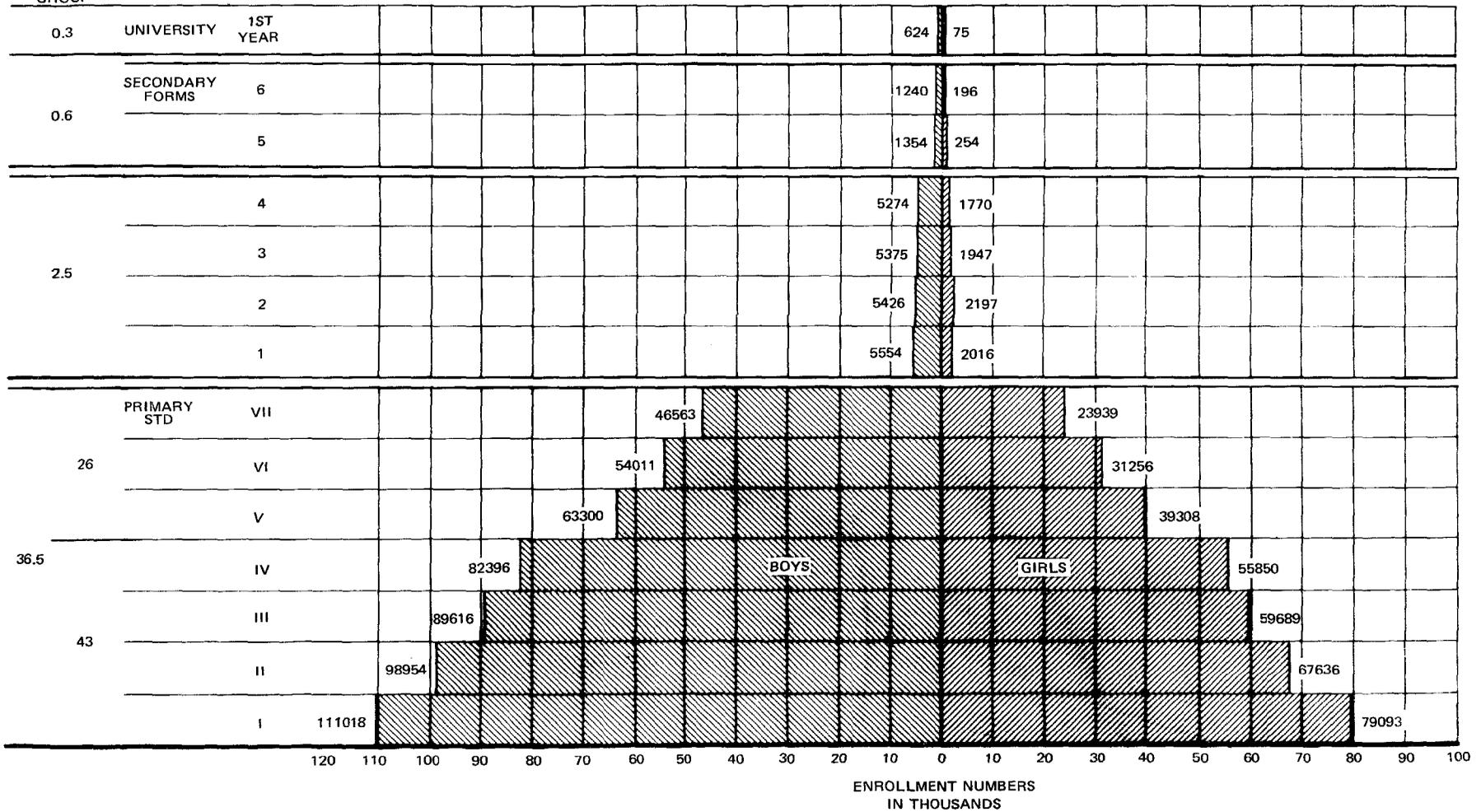
S.C. - School Certificate Examination

H.S.C. - Higher School Certificate Examination

TANZANIA EDUCATION PYRAMID, 1971

(PUBLIC SCHOOLS)

AS % OF AGE GROUP



TANZANIA - PROJECT IMPLEMENTATION SCHEDULE

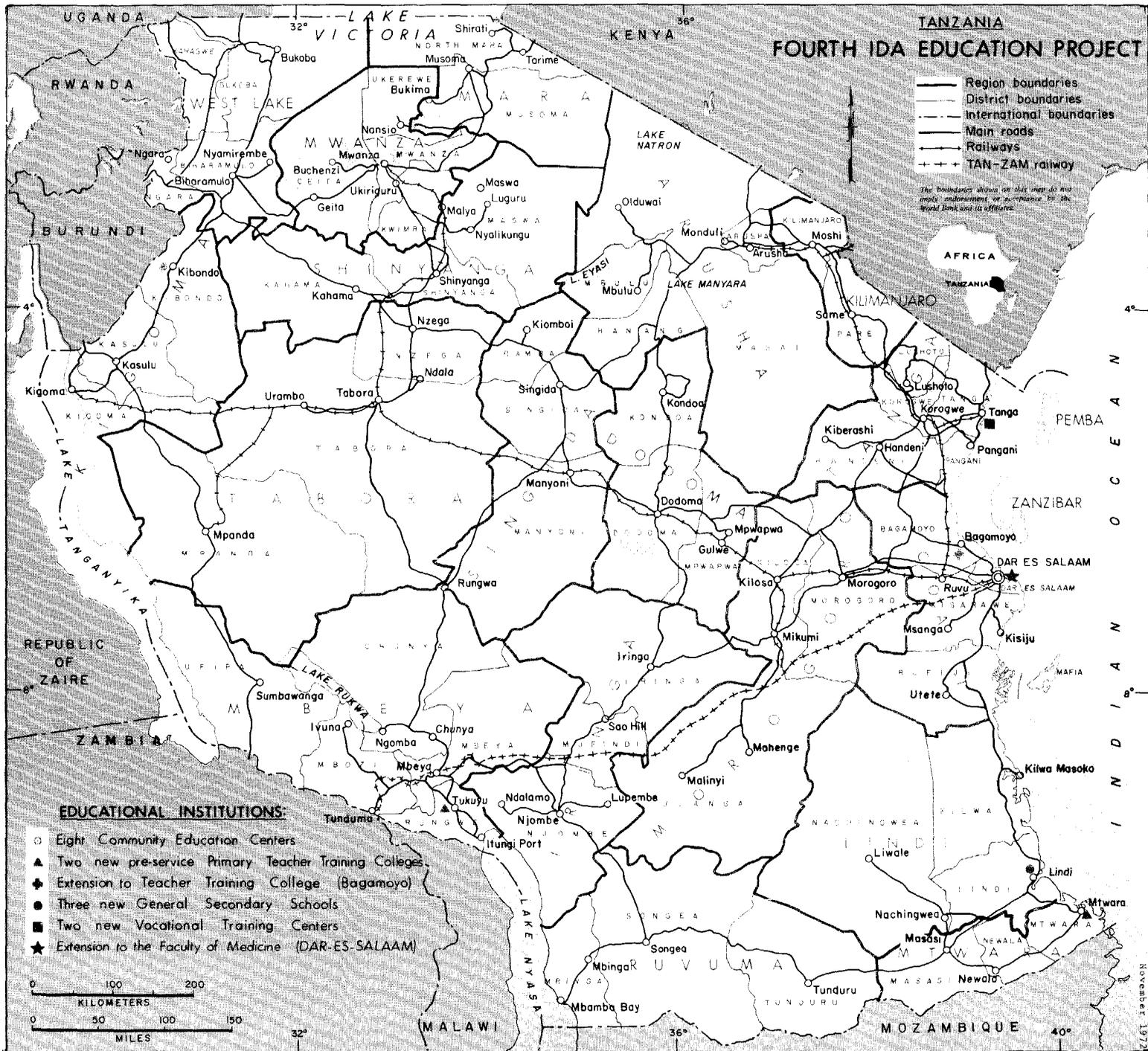
	1/	First Year				Second Year				Third Year				Fourth Year				Fifth Year			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Construction Furniture and Equipment																					
Building																					
Design and Contracts		:::	;BB	***	***	*BB	===														
Site Development			...	..	...	...	ccc	ccc	ccc	ccc	ccc	ccc	ccc	ccc	ccc	ccc	ccc	ccc	ccc	ccc	ccc
Construction					ccc	ccc	ccc	ccc	ccc	ccc	ccc	ccc	ccc	ccc	ccc	ccc	ccc	ccc	ccc	ccc	ccc
Professional Services		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Furniture					PPP	PBB	***	*B=	=		MMM	MMM	MMM	MMI	III						+
Equipment					PPP	PBB	***	*B	===		MMM	MMM	MMM	MII	III						+
Technical Assistance																					
Faculty of Medicine			TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT
Project Unit	SSS	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT	TTT
Management Study			TTT	TTT	TTT	TTT	TTT														
Consultant Architects	EEE																				
Project Unit	vvv																				

Legend

- vvv Establishment of Project Unit
- ::: Design
- *** Preparation of bid packages
- === Tender and contract awarding
- ... Survey of sites
- .. Site Development
- ccc Site Development
- EEE Engagement of Consultant Architect
- SSS Project Unit Architects and Engineers
- BBB Bank review and approval

- ccc Construction
- ... Professional Services
- PPP Preparation of lists
- MMM Manufacturing
- III Installation
- + End of guarantee period
- TTT Technical Assistance

1/ Starts from the date of effectiveness



TANZANIA
FOURTH IDA EDUCATION PROJECT

- Region boundaries
- - - District boundaries
- - - International boundaries
- Main roads
- Railways
- +++ TAN-ZAM railway

The boundaries shown on this map do not imply endorsement or acceptance by the World Bank and its affiliates.

EDUCATIONAL INSTITUTIONS:

- Eight Community Education Centers
- ▲ Two new pre-service Primary Teacher Training Colleges
- ◆ Extension to Teacher Training College (Bagamoyo)
- Three new General Secondary Schools
- Two new Vocational Training Centers
- ★ Extension to the Faculty of Medicine (DAR-ES-SALAAM)

