

PN - AAR - 995

15N 38522

Education and World Affairs, 522 Fifth Avenue, New York, New York 10036. TN 7-9450

001348

000004

5

KE  
370.183  
EAT  
C.D.

**EAST AFRICA:  
Kenya, Tanzania, Uganda**

**STUDY OF MANPOWER NEEDS, EDUCATIONAL CAPABILITIES,  
AND OVERSEAS STUDY**

**Report Number 3**

**Study Committee on  
Manpower Needs and  
Educational Capabilities  
in Africa**

**August 10, 1965**

## TABLE OF CONTENTS

FOREWORD.....	1
EAST AFRICA: THE PATTERNS OF CHANGE.....	1
Opportunities for Reappraisal.....	1
Regional Programs of Human Resource Development.....	4
Teachers for East Africa.....	4
The University of East Africa.....	4
The East African Common Services Organization.....	8
The East African Staff College.....	9
KENYA (Report Number 3A).....	10
Introduction.....	11
The Land and the People.....	11
National and Human Resource Development.....	11
The Seven-Year Development Plan.....	11
Manpower Planning.....	12
Manpower Needs.....	13
Projections of Future Manpower Requirements.....	16
The Rate of Africanization of the Labor Force.....	24
Educational Capabilities.....	28
The Report of the Kenya Education Commission.....	28
Major Objectives of Kenya's Educational Planning.....	28
The Supply of Teachers.....	31
Technical Education.....	33
Agricultural Education.....	34
University Education: University College, Nairobi.....	35
The Upgrading of Employed Manpower.....	39
The Future Direction of Educational Planning.....	40
Overseas Study.....	41
Statistics on Overseas Study.....	41
Kenyans Studying in the United States.....	42
Kenyans Studying in the United Kingdom.....	44
United Nations Fellowships.....	45
Kenyans Studying in the Soviet Union and Eastern Europe.....	45
Kenyans Studying in Canada, France, and West Germany.....	46

Administration of Overseas Study.....	46
Manpower Balance Sheet.....	48
The Manpower Supply-Demand Equation.....	48
TANZANIA (Report Number 3B).....	57
Introduction.....	58
The Land and the People.....	58
The Tanzanian Economy.....	58
National and Human Resource Development.....	59
Early Development Plans.....	59
The New Five-Year Development Plan, 1964-69.....	60
Manpower Planning Machinery.....	62
Implementation of Planning Goals.....	64
Surveys of Manpower Supply and Demand.....	65
Estimates of Future Manpower Requirements.....	67
Educational Capabilities.....	74
The High Attrition Rate in Primary and Secondary Schools.....	74
Educational Plans.....	76
Secondary Education.....	77
Post-Secondary Education.....	79
Technical and Vocational Education.....	81
In-Service Training.....	82
University Education.....	83
Government Scholarships for Study in East Africa....	85
Overseas Study.....	86
A Registry of All Post-Secondary Students.....	86
Administration of Overseas Scholarships.....	87
Statistics on Tanzanians Studying Abroad.....	88
Manpower Balance Sheet.....	93
Estimates of the Number of Tanzanian Graduates During the Plan Period.....	93
Secondary School Supply in Relation to Demand.....	99
Demand-Supply in Class A.....	100
Demand-Supply in Class B.....	104
Conclusions of Manpower Survey.....	106

11

<b>UGANDA (Report Number 3C)</b> .....	107
<b>Introduction</b> .....	108
The Land, the People, and the Economy.....	108
<b>National and Human Resource Development</b> .....	109
The Five-Year Development Plan.....	109
Manpower Assessments and Plans.....	109
Manpower Supply and Demand.....	111
<b>Educational Capabilities</b> .....	115
The Reform of Primary Education.....	115
The Planned Expansion of Secondary Schools.....	116
Secondary and Post-Secondary Technical Education..	117
Agricultural Education.....	119
Teacher Training.....	119
Upgrading Employed Manpower.....	122
University Education: Makerere University College.	123
<b>Overseas Study</b> .....	125
Selection Procedures for Study Abroad.....	125
Recovery of Overseas Students.....	125
Statistics on Ugandans Studying Abroad.....	126
Students in the United States.....	128
Students in the United Kingdom.....	129
Students in Other Countries.....	130
<b>Manpower Balance Sheet</b> .....	130
The Manpower Supply-Demand Equation.....	130
<b>CONCLUSIONS AND RECOMMENDATIONS</b> .....	133
<b>East African Regional Issues</b> .....	134
<b>Kenya</b> .....	145
<b>Tanzania</b> .....	148
<b>Uganda</b> .....	152
<b>BIBLIOGRAPHY</b> .....	156
<b>I. East African Regional</b> .....	156
<b>II. Kenya</b> .....	165

III. Tanzania.....170  
IV. Uganda.....176  
APPENDIX.....182

East Africa  
Report Number 3

Errata

<u>page</u>	<u>line</u>	
80	16-17	Delete "now terminated" and insert "which will be ending on June 30, 1966".
114	10-12	Should read: "the number of university graduates must increase by about 9.5 per cent per year and the total pool of graduates must rise from 4,000 in 1962 to over 22,000 in 1981".
127	Table 9	More recent figures for Ugandans studying overseas are given on the attached sheet.
142	29	Insert footnote after "opportunity to do so" as follows: "While Tanzania has developed more effective machinery for manpower planning and analysis than have the other East African countries, there is still room for improvement, and external assistance, especially with staffing, will be needed for some time."

Education and World Affairs 522 Fifth Avenue, New York, N. Y. 10036 TN 7-9450

## EAST AFRICA

Report Number 3

## FOREWARD

### Frame of Reference

This East African report, which includes separate reports for Kenya, Tanzania, and Uganda based on surveys made in these countries between July 1964 and March 1965, is submitted in partial fulfillment of USAID Contract AID/afr-198 dated June 2, 1964.<sup>1</sup>

The AID directive to Education and World Affairs called for the following: (1) an assessment of available data concerning high-level manpower needs,<sup>2</sup> (2) an appraisal of the capabilities of indigenous African educational institutions to meet those manpower needs, and (3) a survey of opportunities for study overseas as they relate to high-level manpower needs.

---

<sup>1</sup>This report is one in a series of nine country studies, including Ethiopia, Guinea, Kenya, Liberia, Nigeria, Sudan, Tanzania, Tunisia, and Uganda. In addition, a summary report containing general conclusions and recommendations based on the individual country reports is being submitted to AID.

<sup>2</sup>The term "high-level manpower" has been given different meanings. As used in these reports, it generally includes two categories: (1) Class A occupations, sometimes identified as Senior, which are those requiring a university education or its equivalent; and (2) Class B occupations, sometimes called Intermediate, which require two or three years of post-secondary training or its equivalent. Other categories which require less training were not examined closely, although some attention was given to middle-level or Class C occupations, which require secondary school education or the equivalent.

Study Committee on  
Manpower Needs and  
Educational Capabilities  
in Africa

James S. Coleman,  
University of California,  
Los Angeles  
C. W. de Kiewiet,  
Africa Liaison Committee,  
American Council on Education  
Frederick Harbison,  
Princeton University  
Eldon L. Johnson,  
Great Lakes Colleges Association  
John J. McKelvey, Jr.  
Rockefeller Foundation  
John W. Masland, DIRECTOR OF STUDY  
Schuyler C. Wallace,  
Foreign Area Fellowship Program

Liaison Members:

Wilton S. Dillon,  
National Academy of Sciences  
Maurice Harari,  
Education and World Affairs  
C. Walter Howe,  
American Council on Education

This overall East African report is composed of several parts. Basically, it consists of separate reports for Kenya, Tanzania and Uganda. These are preceded by a short introductory explanation of certain recent trends in East Africa and of their relationship to educational developments and assistance programs. The country reports are followed by a general conclusion dealing with East Africa as a whole, including recommendations to AID. This section in turn is followed by separate country conclusions and recommendations.

The study director and members of the study committee are grateful to many individuals in East Africa and elsewhere who gave generously of their time, sharing their experience and providing assistance and guidance. They particularly wish to thank members of the EWA staff who assisted directly in the preparation of this report: Sally V. Allen, Thomas Ford, Patricia Mulvey, Rhoda Pauley, and James R. Sheffield.

John W. Masland  
Director of the Study

## **EAST AFRICA: THE PATTERNS OF CHANGE**

### **Opportunities for Reappraisal**

During the year in which the Education and World Affairs study has been underway, conditions in East Africa have changed markedly. The exact character of these changes and their results are not yet clear. Although factors within Kenya, Tanzania and Uganda are contributing to the uncertainties, a principal element of uncertainty is the breakdown in regional relationships and the problems posed for each country by this breakdown. Much of the educational development of recent years had been based on assumptions of a regional approach to human resource development.

The regional character of East Africa is a heritage of British rule, which created a common market and common transportation, communications, currency, tax, banking and other facilities. Most of these were undertakings of the East African Common Services Organization. Indeed, EACSO has been one of the principal employers of high-level manpower in East Africa, and this and other opportunities have provided a fairly high degree of labor mobility among the countries.

The East African governments, moreover, inherited from colonial rule a regional approach to education. At the post-secondary level particularly, the British planned a regional pattern establishing institutions, some of a specialized nature, that would serve the needs of East Africa as a whole. The three countries maintained and even extended this pattern after independence. External donors, including AID, reinforced the regional approach in their assistance programs.

But now regionalism is threatened by attempts to advance along separate national lines. At the political level, high-sounding declarations of intentions to federate have been replaced by charges and countercharges. Tanzania has introduced a separate currency and has placed restrictions on some imports from Kenya. The future of EACSO is in doubt. The regional approach to education, particularly as manifested in the federal University of East Africa, is under severe strain. The entire situation is extremely fluid and the outcome cannot be predicted.

Under these circumstances it is not wise for the study committee at this time to propose firm and precise recommendations with respect to all of the questions posed by its directive from AID. Indeed, the terms of reference of the project are no longer fully relevant. Other agencies, both American and British, moreover, are reviewing the East African situation. Yet the very uncertainties that dictate this conclusion also suggest that conditions are ripe for a fresh and imaginative look at the whole situation. The East African governments now are forced to reconsider the assumptions and expectations of their educational programs. They will have to make some new and difficult choices. AID thus in some respects is in a more favorable position for a thorough reappraisal of the strategy of its assistance programs.

Issues To be Reexamined. The study committee concludes that what on the surface appears to be an unfavorable climate can be turned to advantage, providing East Africans, AID and other external donors alike with an extraordinary opportunity to open issues for reexamination and to look at them in a way that has not previously been feasible. These issues include such large questions as:

1. What are the essential elements of a viable national system of education for each country, regardless of the future of regionalism? What can the governments of Kenya, Tanzania and Uganda afford to develop and maintain? What levels of external support can realistically be anticipated?
2. What changes in secondary education should be made?
3. How can the acute shortage of secondary teachers be overcome?
4. What kind of university system is suitable for East Africa under a regional pattern or under a separate national pattern? What university resources are essential for each country regardless of regional developments?
5. Along what lines should professional education (medicine, veterinary medicine, agriculture, engineering) develop in East Africa? How much can be accomplished regionally or cooperatively?

6. What is the appropriate relationship of the university system to the subprofessional, non-degree granting institutions? Should institutions for terminal education be developed at the non-degree level?

7. What is the appropriate relationship of the university system, federal or national, to secondary education? What university entrance levels should be maintained?

8. How can university tuition, fees and other charges to the student be most effectively financed?

9. How can overseas study be most effectively related to national or regional needs?

10. What is the future role of EACSO with respect to human resource development in East Africa?

11. What is the future role of the AID participant training program in East Africa?

AID's Opportunity. Although answers to these and other questions of similar character remain unclear under present conditions, AID need not be reticent to continue investments in education in East Africa. Rather it should take positive advantage of the opportunity to seek out and experiment with new forms and areas of assistance. Regardless of the future of East African federation, the United States will continue to be concerned with the development of the human resources of this area. Thus AID should maintain a critical reexamination of its own strategy of assistance to education in the three East African countries in the light of changing circumstances.

This process will inevitably take time; conditions in East Africa, moreover, will remain fluid. Thus it is essential at this moment to identify elements in the situation that present some stability or that can be managed apart from the elements of change, in order to determine whether there are areas on which continuing programs of assistance can be based during this period of transition. In some areas it will be necessary to develop alternate courses of action from among which choices can be made as conditions warrant.

## Regional Programs of Human Resource Development

Several programs of human resource development, to which reference will be made in the following country reports, deserve explanation in this introduction to East Africa.

### Teachers for East Africa

The Teachers for East Africa (TEA) program was developed to help supply teachers for East Africa's secondary schools. With the approach of independence, it was essential to mount a concerted effort to supply teachers from overseas to replace those leaving the area and to staff the many new schools that would be established. The Teachers for East Africa program was launched in December 1960 at a meeting in Princeton, initiated by the African Liaison Committee, of representatives of the American and British governments and foundations and of the East African governments. With AID assistance and in cooperation with the British, Teachers College Columbia University developed a four-year program, 1961-1964, to recruit and train American teachers for service in East Africa and to provide consultant services to East African governments in teacher training. Altogether over 400 American teachers were recruited over the four-year period, although the supply has fallen short of the numbers requested. In 1964 the decision was made to replace TEA by the Peace Corps. TEA will terminate in 1967, when the service of the last of the four waves of secondary teachers will be completed. The British government has supported a similar program to provide British teachers within the same projects.

A newer program, Teacher Education in East Africa (TEEA) is a logical successor to TEA, emphasizing teachers for teacher training rather than for schools directly. This also is an Anglo-American regional program, operated by Teachers College Columbia University, providing assistance to the training of teachers within East Africa. Under this program, also with AID support, the United States and the United Kingdom are expected to provide experienced staff for primary and secondary teacher training colleges. A target of 60 to be divided equally among Kenya, Tanzania and Uganda was set for 1964.

### The University of East Africa

The University of East Africa, was established

in 1961 when its provisional council was constituted. It represents a novel attempt to maintain a federal university composed of constituent colleges and faculties located in the three countries: Makerere College in Kampala, University College, Nairobi, and University College, Dar es Salaam. It came about as the result of a combination of circumstances. Each of the countries was ambitious to provide university education for its citizens; yet at the same time they were faced with the realities of financial stringency. At a conference at Lake Como in 1963, attended by representatives of the East African governments and of the American and British governments and private foundations, an attempt was made to work out answers to the dilemma. The extent of university development that was projected would be expensive. The three governments undertook to provide support at a fairly high level. External donors responded generously with pledges of assistance. Thus in cooperation with the major external donors, university development went forward. Even so, the concept of minimizing duplication was not as well buttressed at Como as it might have been.

Plans for the University of East Africa. The University of East Africa is now operating under plans formulated by the Committee on Needs and Priorities in 1961, and a development plan for the 1964-1967 triennium prepared in mid-1963, as modified by decisions of the University Economy Committee and the University Grants Commission following the Como conference. The 1964-67 development plan incorporated the following basic principles:

1. Each of the three colleges was to develop comparable faculties in the arts, sciences and education, so that by 1967-68 the resources of Dar es Salaam and Nairobi would be developed to parity with those of Makerere, the original institution.
2. There was to be no duplication of expensive professional subjects such as medicine, law engineering, veterinary science, agriculture and architecture.
3. There was to be as rapid an increase as possible in the numbers of East African staff, both administrative and academic.
4. (a) All qualified East African students were to be admitted to the University if facilities were available.

(b) Entry of students to the professional faculties was to be on the basis of merit, tempered by the need for balanced representation for the three East African countries.

5. The development plan, so far as the common faculties were concerned, was based upon the free choice of students, dependent upon the availability of places, but ensuring the viability of these faculties in the three colleges. If within this framework, the university could not ensure the numbers of students so required, the East African governments were to take steps to make available the necessary numbers of students to make those faculties viable.

The Three Constituent Colleges. Makerere University College, the oldest institution within the present university, was established in 1938, and originally was intended to serve all of East Africa. It includes faculties of arts, science and education and the only East African faculties of medicine and agriculture. University College, Nairobi, established in 1954 as the Royal Technical College to offer courses in technical subjects, was elevated to university college status in 1960 and given its present name in 1964. It offers the only degree-level instruction in East Africa in architecture, engineering and veterinary science and has developed faculties in the arts and sciences. Plans for a faculty of education are underway. University College, Dar es Salaam is a new institution, which opened in 1961 with 14 students in the faculty of law, the only such faculty in East Africa. It now has faculties of arts, sciences and education as well.

The University of East Africa is supported by the three governments through grants to the University Grants Commission. It also has received very substantial assistance from the British government, AID, private American and British foundations, and other external sources.

Projected Enrollments. The University of East Africa development plan projects the following enrollments:

	<u>1963-64</u>	<u>1964-65</u>	<u>1965-66</u>	<u>1966-67</u>
Makerere University College	749	794	854	894
University College, Nairobi	531	638	778	918
University College, Dar es Salaam	<u>84</u>	<u>195</u>	<u>375</u>	<u>505</u>
	1,364	1,627	2,007	2,317

These enrollment figures were accepted for further planning by the University Grants Commission in March 1964.

The Future of U.E.A.: Pressures for Separation. From its inception, the University of East Africa has been faced with not unexpected centrifugal forces within each of the three countries to establish separate, nationally-oriented universities, each with a full array of specialized faculties. At this writing the future of the university remains in doubt. While conditions in all three countries operate adversely upon the university, the greatest overt pressures for separation have arisen in Uganda. Makerere College, initially established to serve all of East Africa, gave Uganda a quarter century head start on its neighbors in university level education. Uganda has wished to press forward with further development of this institution and has been impatient with suggestions that expansion of Makerere be delayed until the university colleges in Nairobi and Dar es Salaam are brought up to a level comparable to that of Makerere. Uganda has deeply resented proposals to withdraw funds that had been allocated for expansion of Makerere, and has failed to direct Ugandan students to the common faculties at Nairobi and Dar es Salaam.

For the most part, Kenya and Tanzania have favored continuation of the University of East Africa as a federal institution. This is understandable since University College, Nairobi and University College, Dar es Salaam are newer and relatively less developed. Kenya and Tanzania, moreover, have taken the position that East African and external assistance provided to Makerere prior to the establishment of the University of East Africa belonged to all three countries, which Makerere was designed to serve. Yet even so, in medical education and possibly in other professional areas, these countries are exhibiting nationalistic tendencies

running counter to their declared policy toward the university. As indicated below, Tanzania is converting its sub-professional Medical Training Center to a professional program, although the entrance level is lower than for the Makerere degree program. Kenya also has ambitions to establish a medical school.

Within the university, measures have been taken to counter these tendencies. In the area of agricultural education, in which the university maintains the only degree-level program at Makerere, a regional council on agricultural education has been established, including representatives of the university, the three governments, and the sub-degree training schools at Morogoro in Tanzania and Bukalasa in Uganda, to coordinate development plans and programs. A similar council has been established for medical training.

Since early 1965 it has appeared that the university would break up; the question has been when and under what conditions. At one point a vote at Makerere favored withdrawal and the Uganda government urged dissolution. But the other governments and colleges have resisted this move. It has recently been suggested, however, that Uganda has decided to make Makerere an independent university by the end of the current three-year planning period in 1967. Most observers agree that except for the establishment of admission and degree requirements and the maintenance of academic standards, the development of the separate colleges will proceed along national lines in most respects. Tanzania and Kenya have expressed a desire to maintain the University of East Africa even if Uganda withdraws Makerere. They also have indicated that the new university in Zambia would be welcome to participate in some manner.

#### The East African Common Services Organization

Another regional approach to manpower education and training is provided by the East African Common Services Organization, through its various enterprises. The Railway School in Nairobi, operated by East African Railways and Harbors, for example, has a comprehensive program at three levels: (1) post-primary, (2) post-School Certificate (after which many trainees go on to the Kenya Polytechnic Institute), and (3) post-Higher School Certificate. Some students are sponsored for the degree program in engineering at University

College, Nairobi. EACSO also maintains training programs in office management, tax administration, customs, and so forth. Altogether, there are over 80 EACSO in-service training programs. All of these contribute to the development of the manpower resources of all three East African countries.

#### The East African Staff College

A further example of the regional approach to high-level manpower development has been provided by the East African Staff College. This college was initiated in 1964 by the three governments and EACSO to provide in-service training for senior level personnel. Under the direction of Guy Hunter, whose services were provided by the British Overseas Development Ministry, courses of several months duration were held in Nairobi in November 1964 and in Kampala early in 1965. It was hoped to repeat the program in each of the three capitals on a regular basis, but there is some doubt that the governments will assign a sufficient number of senior officers to make the Staff College a worthwhile undertaking.

101

KENYA

Report Number 3A

## INTRODUCTION

### The Land and the People

Kenya achieved its independence as recently as 1963. Although it is the largest exporter of tea in Africa, over half of Kenya's 225,000 square miles are too arid for farming. The extensive highlands in the central and western regions of Kenya support most of the population and the variety of agricultural produce that accounts for roughly 90 per cent of the country's earnings.

Of the estimated 9,000,000 people in Kenya, approximately 200,000 are Asians and 50,000 are Europeans. These individuals of European and Asian origin, who comprise three per cent of the total population, dominate the country's agriculture, industry, and commerce. Kenya remains dependent upon the capital and skills provided by these segments of her population for economic development.

## NATIONAL AND HUMAN RESOURCE DEVELOPMENT

### The Seven-Year Development Plan

The basic guidelines for Kenya's development are contained in the Development Plan, 1964-1970.<sup>1</sup> The main goals of the plan are to raise GDP from \$680 million in 1962 to \$1,020 million in 1970, which requires an annual growth rate of 5.7 per cent, and to raise per capita income from \$80 and \$93. In July 1965, the Ministry of Economic Planning and Development revised the annual growth rate goal upwards from 5.7 per cent to 6.2 per cent. The plan calls for over one-half of the total net investment to come from external donors, particularly Great Britain. Insofar as priorities can be identified, the develop-

---

<sup>1</sup>Kenyan Ministry of Finance and Economic Planning, Development Plan, 1964-1970: For the Period from 1st July, 1964, to 30th June, 1970 (Nairobi, Kenya: Government Printer, 1964).

ment plan points to agriculture and secondary education as key sectors upon which overall development largely depends.

Because the plan was hastily prepared and is incomplete, it is now being extensively revised by the Kenyan government. Most of the staff work in the Ministry of Economic Planning and Development<sup>1</sup> was directed by Edgar Edwards, who was placed in the ministry with Ford Foundation support. Edwards returned to the United States in July 1965 but expects to come back to Kenya in a year. In the interim his critical position will be filled by an East African.

### Manpower Planning

The first comprehensive manpower survey of Kenya was completed in May 1965.<sup>2</sup> Before the completion of the survey, those responsible for educational planning or for personnel policies in the public and private sectors based their decisions on a number of limited studies and on the day-to-day demands of Kenya's various employers. With the help of the Ford Foundation the government of Kenya now is developing staff competence and adequate machinery to collect data on manpower supply and demand -- of far greater importance -- the government is also

---

<sup>1</sup>Formerly called the Ministry of Finance and Economic Planning.

<sup>2</sup>Kenyan Ministry of Economic Planning and Development, "High-Level Manpower Requirements and Resources in Kenya, 1964-70," prepared under the direction of Calvin F. Davis, consultant for the Ford Foundation to the government of Kenya (Nairobi, Kenya: Ministry of Economic Planning and Development, May, 1965).

Useful manpower analysis had been made earlier by Guy Hunter in Education for a Developing Region : A Study in East Africa (London: George Allen and Unwin, Ltd., 1963) and by John L. Thurston, consultant for the Ford Foundation to the government of Kenya, in "Utilisation of Manpower in the Kenya Public Service" (Nairobi, Kenya: November 21, 1963).

developing the ability to utilize this information to formulate a national strategy of human resource development.

In addition to Edgar Edwards, the Ford Foundation has provided three advisers who helped prepare the manpower survey that was completed in May 1965: David Anderson, staff development adviser in the Directorate of Personnel (the agency that hires Civil Service employees), provided information on manpower demand for the survey; Ernest Stabler, planning officer in the Ministry of Education, made projections of supply; and Calvin Davis, in the Ministry of Economic Planning and Development, directed the compilation of this data. The Ford Foundation is also helping to staff the Central Registry of Students in the Ministry of Education and a proposed manpower planning section in the Ministry of Economic Planning and Development. The central registry will bring together information on all Kenyan students at post-secondary institutions abroad by location, field of study, and estimated year of return. This information will be used by the Directorate of Personnel and other employers, the manpower planning unit, the scholarship selection committee, and external donors in relating study opportunities to changing needs.

The manpower planning unit, whose establishment was recommended in the May 1965 survey, will plan, coordinate, and report on manpower problems and courses of action. The survey also recommended that an advisory committee composed of senior government officers and business and labor leaders be established to work with this planning unit. Clearly, the government of Kenya will be increasingly able to formulate and carry out a strategy of human resource development.

### Manpower Needs

The new manpower survey contains the most recent statistics on present employment and projections of future requirements. The survey has been criticized, especially for projecting a surplus of agricultural and scientific personnel, but is recognized as useful if considered cautiously. The analysis which follows summarizes the principal calculations of the survey.

Statistics on Current Employment. The survey covered 77.2 per cent of all nonagricultural employment, as Table 1 indicates. Although a cut-off point of 100 employees was used in determining firms to be surveyed, most of the nation's high-level manpower was included, since there is a heavy concentration

of such manpower in the government -- Kenya's largest employer of trained manpower -- and in the larger private firms.

Agricultural employment, however, was omitted from the survey because it was reasoned that nearly all high-level agricultural personnel are included under the government Ministry of Agriculture, and the number of both high- and middle-level agricultural positions outside the government has been small. The survey acknowledged, however, that a shift from highly efficient European farming to other forms, such as cooperatives, land consolidation, and resettlement schemes, might cause a considerable demand for high-level agricultural manpower. The EWA study committee concludes that for this very reason agricultural personnel should have been included in the projections, and the EWA committee questions the survey's conclusion that there will be surplus of agricultural and scientific personnel.

**TABLE 1**  
**EMPLOYMENT AND OCCUPATIONAL COVERAGE**  
**OF THE 1964 SURVEY**

Sector of Employment	Total Employment <sup>a</sup>	Employees in Surveyed Establishments	Per Cent Surveyed of Total
Mining & Quarrying	2,294	1,199	52.3%
Manufacturing & Processing	47,758	32,015	67.0%
Construction (Private)	8,789	4,122	46.9%
Commerce & Distribution	50,126	20,997	41.9%
Transport & Communication <sup>b</sup>	45,828	41,814	91.2%
Services <sup>c</sup>	31,765	12,857	40.5%
Utilities	2,469	2,317	93.8%
Local & Foreign Government	55,784	53,048	95.1%
Central Government (Excluding Quasi-Governmental Enterprises)	89,995	89,995	100.0%
<b>TOTAL</b>	<b>334,808</b>	<b>258,364</b>	<b>77.2%</b>

<sup>a</sup>Data supplied by the Employment Statistics Division of the Kenyan Ministry of Economic Planning and Development.

<sup>b</sup>Includes East African Railways and Harbours, posts and telecommunications, as well as road transport.

<sup>c</sup>Excludes domestic services in private households.

**Projections of Future Manpower Requirements**

In order to project requirements over the six-year period, the survey made certain assumptions about the rates of wastage of the various racial groups during the six-year period, 1964-70. For Africans it assumed a wastage rate of 18 per cent in the public sector and 18 per cent in the private sector; for Asians 42 per cent and 30 per cent respectively; and for Europeans 46 per cent and 30 per cent. On this basis, the survey projected the following overall composition of Kenya's nonagricultural employment.

TABLE 2

**COMPOSITION OF KENYA'S NONAGRICULTURAL EMPLOYMENT  
(EXCLUDING DOMESTIC SERVICE)**

Category	Employment		
	1964	1970 (Est.)	% Increase
Professional & Top Management (Class A)	6,279	9,968	58.8%
Technical & Semi-Professional (Class B)	12,815	31,213	143.6%
Skilled Office & Middle & Lower Management (Class C)	31,986	41,272	29.0%
Skilled Manual (Classes C & D)	17,901	25,018	39.8%
Semi-Skilled & Unskilled (Class D)	265,827	317,829	19.6%
<b>TOTAL</b>	<b>334,808</b>	<b>425,300</b>	<b>27.0%</b>

Less than 2 per cent of the total nonagricultural employment falls within Class A, and even the total of 334,808 for all five categories constitutes a very small proportion of Kenya's estimated total work force of 2,333,000.

Class A Requirements. Table 3 breaks down the requirements in Class A by specific occupation groups.

TABLE 3

CLASS A MANPOWER: PRESENT EMPLOYMENT AND FUTURE REQUIREMENTS

Occupation	Total Employment, 1964	Employed Africans, 1964	Employed Asians, 1964	Employed Europeans, 1964	Current Vacancies	Required Replacements in 6 Years	Total Requirements by 1970
Architects (buildings)	70	1	25	44	5	22	63
Town Planners	10	0	1	9	7	5	15
Quantity Surveyors	25	1	7	17	5	11	24
Civil Engineers	200	16	48	136	39	70	173
Electrical Engineers	214	20	45	149	51	67	267
Telecommunication Engineers	102	1	17	84	14	43	86
Mechanical Engineers	341	12	62	267	22	101	206
Industrial Efficiency Engineers	1	0	0	1	0	0	0
Safety Engineers	5	0	0	5	0	2	4
Chemical Engineers	22	0	3	19	2	7	13
Mining Engineers	5	0	0	5	0	1	2
Agricultural Engineers	5	0	0	5	0	2	3
Naval Architects	1	0	0	1	0	0	0
Surveyors	53	3	4	46	10	20	44
Chemists	80	8	23	49	17	30	64
Physicists (soil, hydrology, meteorology)	7	3	0	4	2	2	6
Geophysicists	1	0	0	1	0	0	0
Meteorologists	8	1	0	7	2	4	8
Geologists	4	0	0	4	0	2	3
Veterinarians	51	13	4	34	13	20	49
Veterinary Bacteriologists	4	0	0	4	9	2	12
Animal Scientists (domestic animals)	3	0	0	3	1	1	3
Biologists	2	0	0	2	1	1	3
Zoologists	22	2	3	17	4	10	21

181

TABLE 3 -- Continued

## CLASS A MANPOWER: PRESENT EMPLOYMENT AND FUTURE REQUIREMENTS

Occupation	Total Employment, 1964	Employed Africans, 1964	Employed Asians, 1964	Employed Europeans, 1964	Current Vacancies	Required Replacements in 6 Years	Total Requirements by 1970
Bacteriologists	2	0	1	1	0	2	3
Biologists	7	0	0	7	0	3	5
Botanists	12	1	1	10	2	6	12
Agronomists	72	19	4	49	34	26	81
Scientific & Fumigation Officers	2	0	0]	2	0	1	2
Horticulturists	8	5	0	3	1	2	5
Silviculturists	25	3	0	22	9	11	28
Soil Scientists	1	0	0	1	0	1	2
Physicians & Surgeons	744	36	384	324	36	219	478
Physiologists (medical)	5	0	0	5	0	2	3
Pathologists (medical)	7	0	5	2	2	3	7
Dentists	37	2	22	13	0	11	22
Pharmacists	128	0	78	50	7	39	130
Optometrists	9	0	3	6	0	3	5
University Teachers (arts)	48	9	3	36	4	38	118
University Teachers (sciences)	58	8	10	40	2	45	137
Teachers (secondary school) <sup>a</sup>	1,263	371	283	609	159	403	1,934
Teachers	395	210	57	128	100	102	309
Lawyers	436	12	308	116	8	94	233
Authors, Journalists, & Related Writers	116	39	5	72	6	32	61
Accountants (professional)	236	26	86	124	12	75	151
Librarians	18	6	2	10	3	6	14
Economists	17	7	5	5	4	6	15

191

TABLE 3 -- Continued

CLASS A MANPOWER: PRESENT EMPLOYMENT AND FUTURE REQUIREMENTS

Occupation	Total Employment, 1964	Employed Africans, 1964	Employed Asians, 1964	Employed Europeans, 1964	Current Vacancies	Required Replacements in 6 years	Total Requirements by 1970
Statisticians	23	6	11	6	3	9	19
Mathematicians	12	5	1	6	3	3	9
Psychologists	8	0	0	8	0	4	6
Personnel Specialist (industrial)	33	13	4	16	1	8	15
Translators	20	17	3	0	0	4	10
Interpreters	3	3	0	0	0	1	2
Designers (industrial & commercial products)	4	1	1	2	0	1	2
Professional & Technical Workers	15	1	0	14	2	4	9
Administrators (government)	571	448	17	106	85	139	395
Directors, Managers, & Working Proprietors	708	135	144	429	21	196	380 <sup>b</sup>
<b>TOTAL</b>	<b>6,279</b>	<b>1,464</b>	<b>1,680</b>	<b>3,135</b>	<b>708</b>	<b>1,922</b>	<b>5,611</b>

<sup>a</sup>The employment figures include graduate teachers only. There are also 737 nongraduate teachers.

<sup>b</sup>The total requirement for this occupational category is estimated at 1,520. An estimated 25 per cent of this total will call for university degrees, and these have therefore been included in Class A. The remaining 1,140 are in Class C.

107

The above table demonstrates that by far the greatest demand will be for secondary school teachers, followed by engineers, doctors, government administrators, and university teachers.

Class B Requirements. The estimated demand for Class B manpower is as follows:

TABLE 4

CLASS B MANPOWER: PRESENT EMPLOYMENT AND FUTURE REQUIREMENTS

Occupation	Total Employment, 1964	Employed Africans, 1964	Employed Asians, 1964	Employed Europeans, 1964	Current Vacancies	Required Replacements in 6 years	Total Requirements by 1970
Meteorologists (assistant)	12	2	0	10	3	5	12
Professional Nurses (sr. & supervisory)	473	20	82	371	60	170	372
Nurses (staff & general duty) <sup>a</sup>	1,062	1,030	32	0	59	195	573
Midwives	169	167	1	1	18	31	100
Compounders	48	47	1	0	0	9	23
Physiotherapists	6	0	1	5	0	3	5
X-Ray Operators (medical)	48	30	14	4	15	12	41
Other Medical Technicians <sup>b</sup>	434	406	9	19	53	86	269
Dieticians	3	2	1	0	0	1	2
Primary School Teachers <sup>c</sup>	4,481	4,062	294	125	8,695	3,452	18,797
Religious Leaders	1,367	1,106	6	255	32	277	668
Commercial Artists	31	6	10	15	0	9	17
Interior Decorator Designers	2	1	0	1	0	1	2
Display Artists	5	3	0	2	0	1	2
Radio & T.V. Announcers	60	40	9	11	1	16	35
Draftsmen	361	147	188	26	38	107	247
Technicians (engineering)	888	527	132	229	20	202	469
Technicians (industrial lab.)	104	56	37	11	4	25	48
Technicians (research lab.)	256	160	27	69	37	69	226

22

TABLE 4 -- Continued

CLASS B MANPOWER: PRESENT EMPLOYMENT AND FUTURE REQUIREMENTS

Occupation	Total Employment, 1964	Employed Africans, 1964	Employed Asians, 1964	Employed Europeans, 1964	Current Vacancies	Required Replacements in 6 years	Total Requirements by 1970
Science & Engineering Technicians	77	66	4	7	14	15	51
Agricultural Technicians (field staff)	836	711	50	75	163	185	599
Livestock Officers (field staff)	384	320	6	58	66	88	269
Forestry Officers (field staff)	257	230	5	22	16	54	147
Accountants (non-certified)	638	105	257	276	23	202	393
Social Workers	288	286	2	0	2	52	139
Taxidermists	3	0	0	3	0	1	1
Buyers	9	2	0	7	11	3	6
Hunters & Game Wardens	55	6	0	49	5	18	39
Fisheries Officers	8	1	1	6	1	3	6
Ship Engineers & Officers	55	13	35	7	4	16	33
Aircraft Pilots, Navigators & Flight Engineers	210	2	1	207	2	63	114
Radio Communication Operators	185	142	24	19	9	45	109
<b>TOTAL</b>	<b>12,815</b>	<b>9,696</b>	<b>1,229</b>	<b>1,890</b>	<b>9,341</b>	<b>5,416</b>	<b>23,814</b>

231

(Footnotes to Table 4)

<sup>a</sup>Strictly speaking, these staff and general duty nurses did not meet the definition for inclusion in this survey ( i.e., secondary education or its equivalent.) Many of them enter training at completion of Standard 8 or 9. The survey recommends that the entry requirement be raised to Form 4 as soon as secondary school output is increased sufficiently to make this possible.

<sup>b</sup>All but four of these are medical assistants and health visitors employed by the central and local governments.

<sup>c</sup>Employment figures include graduates, primary 1 and primary 2 teachers only. In addition, there are 14,698 trained teachers (two years of teacher training with K.P.E. or less education) and 8,649 teachers without teacher training. These 8,649 untrained teachers are included in current vacancies.

---

---

Once again the greatest single need is for teachers -- this time at the primary level -- followed by nurses, and a variety of technicians.

Class C Requirements. The survey estimated that roughly 25,000 persons would be required at the Class C level by 1970, of whom 18,000 would be skilled office workers.

The Rate of Africanization of the Labor Force

These figures suggest only a part of the manpower picture, however. It is necessary to examine the racial composition of the labor force as well. The fact that 57.7 per cent of the Class A and B jobs are held by Africans is impressive for a country so recently independent as Kenya. Moreover, positions in the government are open to all citizens, regardless of race. Yet the political climate and the fact that individuals of Asian descent have been slow to accept citizenship inevitably will increase pressure for further Africanization, particularly in the private sector. Even so, it must be recognized that fulfillment of development plans will depend in large measure on the retention of the capital and skills provided by Kenya's non-African population. Kenya's success in moving forward will depend upon rational balancing of these factors.

TABLE 5

RACIAL DISTRIBUTION OF PRESENT EMPLOYMENT

Category	Europeans		Asians		Africans	
	Total	Per Cent	Total	Per Cent	Total	Per Cent
Class A	3,267	50.4%	1,745	26.9%	1,476	22.7%
Class B	1,890	14.7%	1,229	9.6%	9,696	75.7%
Class C	6,658	14.8%	17,840	39.6%	20,559	45.6%
Class D	97	2.0%	796	16.5%	3,937	81.5%
TOTAL	11,912	17.2%	21,610	31.2%	35,668	51.6%

Tables 6A and 6B indicate the progress made in Africanization of the Civil Service in recent years.

TABLE 6A

RACIAL COMPOSITION OF THE KENYA CIVIL SERVICE: ADMINISTRATIVE, EXECUTIVE, AND PROFESSIONAL (top 3) CLASSES

Race	July, 1961		July, 1963	
	Number	Per Cent	Number	Per Cent
African	496	10%	900	19%
Asian or Arab	1,342	26%	1,511	29%
European	3,316	64%	2,655	52%
TOTAL	5,154	100%	5,156	100%

TABLE 6B  
RACIAL COMPOSITION OF  
SELECTED POSITIONS

Category	No. in Post	Africans		Europeans		Asians		Arabs	
		No.	%	No.	%	No.	%	No.	%
Administrative Officers	350	221	63.1%	105	30%	13	4%	11	.03%
Professional Officers	1,153	156	13.5%	772	67%	224	19%	1	.1%
General Executives	853	225	26%	106	12%	515	60%	7	.8%
Departmental Executives	545	181	33%	171	31%	192	35%	1	.2%
Semi-Professional Employees	179	139	78%	16	9%	24	13%	...	...
Personal Secretaries	258	23	9%	119	46%	116	45%	...	...
Nursing Class	261	69	26%	152	58%	40	15%	...	...
Police & Prison Personnel	1,339	918	69%	322	24%	96	7%	3	.2%
Technical Department Staff	1,289	444	34%	540	42%	302	23%	3	.2%
<b>TOTAL</b>	<b>6,225</b>	<b>2,376</b>	<b>38%</b>	<b>2,303</b>	<b>37%</b>	<b>1,522</b>	<b>24%</b>	<b>26</b>	<b>.4%</b>

In the private sector the extent of Africanization of Class A positions varies from zero to over 60 per cent. In selected firms the manpower survey found the following racial breakdown, which shows that Africanization of private firms remains a large task.

TABLE 7

CLASS A OCCUPATIONS IN THE PRIVATE SECTOR --  
PERCENTAGE BREAKDOWN BY RACE

Industry	European	Asian	African
All Oil Firms	59.0%	15.9%	25.1%
10 Leading Motor Firms	82.3%	16.0%	1.7%
25 Large Manufacturing Firms	50.1%	18.7%	31.2%
4 Leading Banks	62.2%	35.9%	1.9%

## EDUCATIONAL CAPABILITIES

### The Report of the Kenya Education Commission

For the first time since 1949, a comprehensive review of education in Kenya has been undertaken by a commission appointed in January 1963 by the Minister of Education and chaired by Professor S. H. Ominde of the University College.<sup>1</sup> While the first part of the report of the Kenya Education Commission, issued in December 1964, is an extremely useful document, it is unfortunately of limited value for the purposes of this particular study. It deals with a wide variety of issues and makes numerous recommendations that will be translated into specific priorities and programs in the second part of the report, promised for some time in 1965. The first part, moreover, gives only marginal attention to post-secondary education.

Although the recommendations in the Education Commission's first report cannot be considered policy until the government issues its white paper, it is worthwhile to note some of the points made. One of the commission's main concerns was fostering a sense of national unity and purpose through the educational system. Although differences in school fees and even different diets among ethnic groups remain formidable obstacles to integration, the commission suggested possible means of alleviating the situation, including a public relations program to communicate the government's goals to its citizens.

The commission also recommended that primary education be entrusted to the local authorities, that secondary education be highly centralized, and that the curriculum be geared more closely to national needs by including African history, geography, literature, and agricultural science in secondary schooling. The commission also recommended the establishment of "intermediate colleges." It was not clear, however, whether these institutions would be primarily for sixth form work or would provide a broad range of terminal technical, commercial, and other nonacademic courses along the lines of some community colleges in the United States.

### Major Objectives of Kenya's Educational Planning

Until the government acts upon both parts of the commission's report and its recommendations, the basic plan for Kenya's

---

<sup>1</sup>Kenya Education Commission, Kenya Education Commission Report, Part I (Nairobi, Kenya: Government Printer, December, 1964).

educational development is contained in the Development Plan, 1964-70. The plan calls for these achievements by 1970:

1. Enough places at the secondary and higher levels to educate those with recognized abilities; and
2. Organization of the educational system to meet the country's manpower needs.

The plan also sets universal primary education as a long-range goal. Since primary education is largely a local responsibility, the achievement of this goal is likely to vary greatly among the regions. Any really determined effort to attain universal primary education would divert precious resources from secondary and higher education, thus conflicting with the plan's second goal of meeting the nation's need for high-level manpower.

Expansion of Secondary Schools. The plan accords "highest priority" to the expansion of secondary schools, and the targets set forth call for an increase in enrollment of 10 per cent a year in Form 1 and of 18 per cent a year in Form 5. Kenya is counting on a World Bank loan for 75 per cent of the capital expenses of the proposed expansion of secondary schooling and teacher training. Preliminary estimates of recurrent expenditures for secondary education over the planning period call for an increase from the present £2.3 million to £3.5 million in 1970.<sup>1</sup> The Kenyan economy probably could support expenses of this magnitude, providing that the skills and capital of Europeans and Asians are retained throughout the planning period and that external assistance is maintained at expected levels.

In connection with its loan application to the World Bank and as part of the revised national development plan, the Ministry of Education has revised its own targets for expansion of secondary education. Although these estimates must be considered tentative until they are approved by the government, they nonetheless reflect the ministry's thinking as of February 1965.

---

<sup>1</sup>For details concerning expenditures within the current budget, see Development Estimates for the Year 1964-65 and 1964-65 Estimates of Recurrent Expenditure (Nairobi, Kenya: Government Printer, 1964).

TABLE 8

SECONDARY SCHOOL DEVELOPMENT PLAN FOR 1965-70

Enrollment in Forms 1-6 in Government-Established and Government-Assisted Schools and Number of School Certificates and Higher School Certificate Passes

Attrition: 2.5 per cent per year

Class size: New Forms 1-4 - 35 students  
New Form 5 - 25 students

Form	Actual Enrollment 1964	Projected Enrollment						Per Cent Increase, 1964-1970
		1965	1966	1967	1968	1969	1970	
Form 1	8,956	10,981	12,381	13,431	14,481	15,706	17,106	91%
Form 2	7,231	8,732	10,706	12,071	13,095	14,119	15,313	112%
Form 3	5,515	7,050	8,514	10,438	11,769	12,768	13,766	150%
Form 4	4,433	5,377	6,874	8,301	10,177	11,475	12,449	181%
CSC & GCE Passes <sup>a</sup> (65% of Form 4 enrollment)	2,881	3,495	4,468	5,396	6,615	7,459	8,092	181%
Form 5	792	992	1,192	1,392	1,592	1,792	1,992	152%
Form 6	549	772	967	1,162	1,357	1,552	1,747	218%
HSC Passes <sup>b</sup> (60% of Form 6 enrollment)	329	463	580	697	814	931	1,048	219%

<sup>a</sup>Cambridge School Certificate and General Certificate of Education.

<sup>b</sup>Higher School Certificate.

These targets are nearly in line with the projections made by E. F. Sheffield of the University of Toronto in a study completed in June 1964 of entrance requirements at the University of East Africa.<sup>1</sup> If these minimum requirements remain the same, the potential Kenyan input into the University of East Africa will be roughly 1,000 in 1970.

#### The Supply of Teachers

Although theoretically the development plan assigned top priority to secondary education, it offered no long-term solution for the growing teacher shortage. The plan estimated demand for additional teachers in Forms 1 through 4, allowing for wastage, to be 1,573 by 1970.<sup>2</sup> Of this number only 416 could be expected from East African institutions, leaving roughly 1,157 to be recruited from other sources.

In its development plan Kenya clearly gives a lower priority to this manpower requirement than to many others. The proposed expenditures for education during the planning period call for a decline in the percentage allocated to teacher training from 8 per cent in 1964-65 to 4 per cent in 1970 and a low of 2.8 per cent in 1966-67. Of the 254 new teachers required for Forms 5 and 6, 219 will have to be recruited from overseas.

Since the plan was written, however, Kenya has shown more concern over this matter. The first part of the Education Commission report emphasizes the critical shortage of teachers and suggests remedial measures. Several additional local sources that could supply Kenyan teachers have been identified by

---

<sup>1</sup>University of East Africa, "Entrance Levels and Degree Structure Report 1964" (Kampala, Uganda: 1964). One of the appendices to this report was compiled by Dr. E. F. Sheffield of the Canadian Universities Research Foundation; it includes statistical tabulations projecting annual enrollments.

<sup>2</sup>Note that the manpower survey made far larger estimates of the number of teachers that will be needed (see Table 3).

planners in the Ministry of Education.<sup>1</sup> One local training source is the proposed Department of Education at the University College in Nairobi; this will be discussed in the section on the university. Two other sources that would train secondary school teachers are the proposed Swedish institute for science teachers and Kenyatta College, established on the former British military base of Kahawa. These and other sources of new teachers are shown in the following table:

TABLE 9

SOURCES OF SECONDARY TEACHERS FOR 1965-70  
CUMULATIVE TOTALS WITH FIVE PER CENT WASTAGE PER YEAR

Source	1965	1966	1967	1968	1969	1970
Local Training Schemes:						
Upgrading Primary Teachers	230	218	207	197	188	180
Secondary Teachers:						
Three-Year Course		37	93	185	327	470
One-Year Course	17	46	77	123	177	238
Swedish Institute for Science Teachers					35	68
Department of Education						
University College					40	100
Kenyan Graduates Trained Overseas		20	49	86	132	185
Kenyan Graduates from Overseas Trained Locally		15	29	42	55	67
Kenyans Trained at Makerere & Dar es Salaam	5	10	15	20	10	10

<sup>1</sup> See Mike Dixon, "Estimated Supply and Demand of Secondary School Teachers" (Nairobi, Kenya: Planning Office, Ministry of Economic Planning and Development, October 15, 1964), draft paper; and Ernest Stabler, "A Working Paper on the Supply of Secondary Teachers, 1965-70" (Nairobi, Kenya: Ministry of Education, October 12, 1964).

TABLE 9

SOURCES OF SECONDARY TEACHERS FOR 1965-70  
CUMULATIVE TOTALS WITH FIVE PER CENT WASTAGE PER YEAR

Source	1965	1966	1967	1968	1969	1970
Department of Technical Cooperation (British)	147	147	147	147	147	147
TEA/Peace Corps	75	147	147	147	147	147
Roman Catholic Missionaries	10	19	28	37	46	55
American University of Beirut (AID Participant Training Program)				10	26	41
TOTALS	484	659	792	994	1,330	1,708

This forecast of 1,708 teachers by 1970 is based on optimistic estimates. Even so, the figure falls short of the requirement of 1,934 for the same year identified in the manpower survey. This demonstrates that the supply of secondary teachers will remain of critical importance if Kenya is to achieve its modest goals for secondary school development. Note, moreover, the heavy dependence upon external assistance that is anticipated.

Technical Education

Technical education in Kenya, like teacher training, is offered at several levels. At the lowest level, eight trade schools throughout the country offer a two-year post-primary course in such skilled occupations as carpentry, metal-working, and brick-laying, with less than satisfactory results. The recent Kenya Education Commission report recommended that these trade schools be upgraded to four-year secondary schools with a technical-agricultural curriculum.

At the middle level there are two institutions in Kenya which produce subprofessional craftsmen and technicians. The Mombassa Institute of Muslim Education (now open to all races) is small and offers a narrow range of courses at the secondary school level, as well as a few evening courses. The Kenya Polytechnic Institute in Nairobi, on the other hand, offers a

wide variety of courses to its 1,325 students. Many of these students, including other East Africans, are sponsored by governments, the East African Common Services Organization, and private firms. This institution was established in 1958 to fill the gap left by the upgrading of the Royal Technical College to university status, ultimately to become University College Nairobi. Courses at the Kenya Polytechnic Institute are available on an evening, day-release, "sandwich", or full-time basis, and range from pre-School Certificate- to Higher School Certificate-level, with the chance of going on for university work.

The Kenya Polytechnic Institute seems to be more closely related to the realities of employment than similar schools elsewhere in Africa. Most of its courses are for apprentices in commerce and industry who must have jobs before they are enrolled. Instruction is closely related to job needs through advisory boards made up of business leaders.

The institute has received support from various sources, including the British government, the UN Special Fund, UNESCO, and the Peace Corps. It is seriously overcrowded at present. Plans for expansion now under discussion with USAID and other donors would provide urgently needed buildings, equipment, and staff.

### Agricultural Education

Since agriculture in Kenya was dominated by the European settlers until recently, it is not surprising that opportunities for agricultural training have been limited. One important development has been the introduction of vocational-agricultural courses in a number of secondary schools. This so-called vo-ag experiment was an uphill battle because of the traditional attitudes towards secondary education, but as more white collar jobs become filled and agriculture becomes more profitable, it is likely that more secondary schools will include agriculture in their curricula.

Egerton College. Egerton College is the highest level agricultural training institution in Kenya. (The University of East Africa's only degree course in agriculture is offered at Makerere College in Uganda.) Originally established to provide agricultural training for Europeans, Egerton now trains mostly African students who are sponsored by various departments of the Kenyan government. The growing number of private students

(supported by the Aga Khan, private firms such as dairies, tanneries, or coffee boards, or self-supported) points to a third stage in the college's development when much of the government will be Africanized and private individuals and firms will support the college.

Egerton is now expanding from a two-year course enrolling 200 students to a three-year course enrolling about 300 students. Admissions requirements will gradually rise, demanding more and better science preparation at the School Certificate level. The course of study will thus be comparable to the agricultural colleges in Tanzania and Uganda, and Egerton graduates in several courses will be able to go on for degree work at the university. Between 80 and 100 students will graduate from the college each year with diplomas in agricultural engineering, agriculture, animal husbandry, dairy science, and forestry. Through a contract with West Virginia University, USAID is providing instructional staff, equipment, and buildings for the college and is sending a number of participants to West Virginia University for training so that Egerton will soon have more Africans on its staff. The Rockefeller Foundation, FAO, UNICEF, and several other donors are also making significant contributions to the college's development.

University Education: University College, Nairobi

The University College, Nairobi, formerly Royal Technical College and later Royal College, became one of the three constituent colleges of the University of East Africa in 1964. AID has provided development loans to the University College to help finance construction of an engineering block, a physics building, residence halls, a theater, and a library.

In addition to arts and sciences which all three East African colleges offer, University College, Nairobi awards professional degrees in engineering, architecture, and veterinary science. It is planning a degree program in education, to be added in 1966, if not sooner. Although it is impossible to predict expansion with accuracy, the University Development Plan projected undergraduate enrollment as follows:

TABLE 10

UNIVERSITY COLLEGE, NAIROBI  
PROJECTED UNDERGRADUATE ENROLLMENT: 1965-6

Field of Study	1964-65 (actual)	1965-66	1966-67
Arts (B.A.)	235	335?	425?
Science (B.Sc.)			
Commerce (B.Comm.)			
Veterinary Science (B.Vet.Sc.)	50	60	80
Engineering (B.Sc.Eng.)	159	200	225
Land Development (Prof. Qual.)	33	60	70
Art (East African Dipl. F.A.)	31	38	40
Domestic Science (Prof. Qual.)	38	12	3
Architecture (Prof. Qual. and B.Arch.)	48	73	75
<b>TOTAL</b>	<b>594</b>	<b>778</b>	<b>918</b>

The actual enrollment as of September 26, 1964 was 613, which when broken down by race and territory revealed that 317 were from Kenya and 143 of these Kenyans were African.<sup>1</sup> The college has been under some criticism from the government for not responding to the needs of the country. The new principal, Arthur Porter from Sierra Leone, is very conscious of the need to give the college a distinctly African focus.

The College's Responsibility for National Educational Development. For a variety of reasons, the University College, Nairobi, is only now establishing a Department of Education and in other ways is demonstrating the desire and intention to contribute vigorously and appropriately to the development of

<sup>1</sup>From provisional acceptances it appears that the enrollment at University College, Nairobi in 1965-66 will include 937 undergraduates, of whom 492 will be from Kenya.

Kenya's entire educational system. In the absence of such a department, the Ministry of Education itself set up a "shadow" Institute of Education in 1964, combining two existing teacher training organizations in order to help coordinate and strengthen all teacher training activities in Kenya. It was recognized at the time, of course, that the University College -- as elsewhere in East Africa -- should eventually participate in the institute together with the Ministry of Education and the teacher training colleges and should also be the permanent home of the institute. Such a relationship has been rapidly growing since Arthur Porter became principal of University College, Nairobi in October 1964; and following the imminent establishment of a Department of Education there, it is to be expected that agreements will soon be reached under which the University College will be closely linked with the institute.

UCN will then be able to draw upon its growing facilities for research and instruction to contribute to the strengthening of pre-service and in-service teacher training in Kenya at all levels. Several foundations have already committed themselves to assist such developments. USAID may expect to be asked to assist with institute staffing along the lines that it is already following in Tanzania and Uganda.

The Faculty of Veterinary Science. The need for trained veterinarians in East Africa is large, for millions of livestock are raised in the area. Most of the region's 150 veterinarians are Europeans, and to replace them while expanding services is a formidable task. Thus, the Faculty of Veterinary Science at University College, Nairobi can play an important role.

With the help of major grants from the Rockefeller Foundation and AID, the faculty changed in 1963 from a diploma course for assistant veterinary officers to a degree-granting program in veterinary science. With continued assistance from these and other donors, the veterinary faculty plans to serve East and Central Africa with an enrollment of 60 students. In addition to providing capital expenses for the Faculty of Veterinary Science, AID has also provided teaching and research staff and participant training through a contract with Colorado State University.

In October 1964, a meeting of international organizations was convened by the University of East Africa to discuss a variety of internal problems of the Faculty of Veterinary Medicine, including questions of financing, staff, and curriculum. The meeting did result in agreement among all interested

parties on the resolution of the faculty's internal problems, and a program for the faculty was established. It was generally agreed that the Faculty of Veterinary Medicine at University College, Nairobi is the strongest in the East African area from Pretoria to Khartoum and should continue to receive support.

The College's Adult Education and Extension Services.

The Institute of Adult Studies at Nairobi College comprises the Department of Residential Adult Education, based at the College of Social Studies at Kikuyu, and the Department of Extramural Studies, which offers some 140 courses in 16 towns throughout the country. Both departments provide short courses in a variety of fields. In the College of Social Studies a one-year course for about 14 students is available; it leads to a Certificate of Adult Studies or to Mature Age entry to the University of East Africa. The college was recently expanded from 30 to 60 places. Unlike the Kenya Institute of Administration, which is discussed below, the College of Social Studies was never intended to provide job-oriented in-service training; rather, its courses seek to broaden the student's understanding of the East African environment. The fact that one-half of the students are supported by their employers indicates a recognition of the value of this experience as well as of the value of qualifying for further study.

Medical Training. At the present time Kenyans attend the Faculty of Medicine at the University of East Africa at Makerere University College. Even though enrollments at Makerere are being increased, Kenya hopes to have a medical school at Nairobi eventually. Quite apart from the question of cost, a medical school cannot be established in Kenya until the capabilities of the teaching hospital at Nairobi are substantially improved. Beginning shortly, however, some of the Makerere medical students will receive part of their clinical instruction in this hospital. Eventually, preclinical instruction in the basic medical sciences can be provided by the Faculty of Veterinary Science at the Choromo campus of the Nairobi University College.

Legal Training. Kenyans seeking a law degree may enroll in the law faculty of University College, Dar es Salaam. In Nairobi the legal community has established the Kenya School of Law for the training of advocates. The school offers a one-year postgraduate course of practical training for students who have completed a law degree and a complete academic course of several years for students who plan to enter the legal profession by way of apprenticeship. The school also expects to provide

training for law clerks, lay magistrates, certain members of the public service, and persons drawn from industry and commerce.

### The Upgrading of Employed Manpower

The 1965 manpower survey confirmed a growing realization that the formal education system will be unable to produce enough high-level manpower to meet Kenya's needs. Consequently, many high-level positions will be held by persons without university education, just as many intermediate-level jobs will be filled by persons with little or no secondary education. The upgrading of those presently employed is not only necessary but is both cheaper and faster than formal schooling.

The Kenya Education Commission has recommended that adult education, in-service training, and community development be shifted from the Ministry of Social Services to the Ministry of Education. This shift would coordinate formal education more closely with literacy programs, training schemes, and the labor market in a comprehensive strategy for the upgrading of the population.

The Kenya Institute of Administration. By far the largest institution for the upgrading of employed manpower is the Kenya Institute of Administration, located at Kabete. The institute was established in July 1961 to provide short courses for civil servants on a "crash" basis, and it has remained under the jurisdiction of the Directorate of Personnel, entirely separate from the University College. It has received substantial assistance from AID. Between July 1961 and July 1964 about 1,500 Kenyans completed KIA courses running from three to fifteen months. The present staff of 30 uses the case method whenever possible in developing practical skills in the five autonomous departments: public administration, executive training, local government, cooperative training, and community development. The Directorate of Personnel is responsible for the selection and placement of trainees and for the content of the curriculum.

In 1964 a committee was appointed under the chairmanship of A. L. Adu, regional representative of UNTAB in Dar es Salaam, to review the status of KIA<sup>1</sup>. The Adu report, as it was generally

---

<sup>1</sup>"Report of the Committee of Review into the Kenya Institute of Administration," A. L. Adu, Chairman (November 30, 1964).

called, concluded that KIA was playing a role in nation-building far beyond the temporary need for Africanization and recommended that the training in attitudes as well as administrative skills be continued and broadened. The report urged that as much of the government's nontechnical training as possible be concentrated within the institute, which should remain an arm of the government -- directed primarily by political rather than administrative decisions.

Overseas Training. Training opportunities overseas provided by foreign sponsors constitute one of the most important means of upgrading presently employed manpower. Among these is the AID participant training program, which is the largest single program bringing Kenyans to the United States. According to the 1964 "Roster of Kenya and Regional Participant Training", 570 Kenyans have taken part in participant training from FY 1956 through FY 1964 in the United States, in third countries, and in both the United States and third countries. Of these 570 students, 289 were in agriculture and 147 in government management. The annual totals for students trained under the program for FY 1963 and FY 1964 were 227 and 196 respectively.

Other In-Service Training Programs. Kenya also has training schemes for the military, the police, and other government departments, and the larger private firms have in-service training programs for their employees. Kenyans also enroll in the training programs of the East African Common Services Organization.

#### The Future Direction of Educational Planning

At this writing it is difficult to forecast the precise direction in which Kenyan education is moving. Within the next six months the outcome of the loan application to the World Bank should be known, the development plan will be revised, the second report of the Kenya Education Commission will be published, and the subsequent white paper will define government policy.

## OVERSEAS STUDY

### Statistics on Overseas Study

Study abroad represents an important source of high-level manpower for Kenya, but as yet the full value of this source has not been realized. Information on Kenyans studying abroad, moreover, is less reliable than information on other East African students abroad, partly because of the incomplete records of Kenyans who went overseas on the "airlifts" of the late 1950s. Consequently, the following figures are primarily indications of the magnitude of the movement by Kenyans to certain countries.<sup>1</sup>

In September 1964 the statistics section of the Kenyan Treasury listed 3,213 students abroad, including some who had left the country in 1955. The May 1965 manpower survey lists a total of 3,767 Kenyans who are studying outside the country. Not all of these, however, are at the post-secondary level. This figure includes students attending University of East Africa colleges in Uganda and Tanzania, moreover, as well as those studying overseas. On the basis of these two sources, it is probable that slightly more than 3,000 Kenyans were studying abroad during the academic year 1963-64.<sup>2</sup>

The Treasury's statistics section estimated that by 1969 2,080 Africans now studying overseas will have returned to Kenya, of whom 30 will have graduate degrees and 899 will have completed undergraduate work. The May 1965 manpower survey estimates a total of 5,199 students returning by 1970, or about 850 returnees a year. Although the survey took wastage and nonreturnees into account in these projections, the returnee figures still seem rather high.

---

<sup>1</sup>Material for this section was obtained from the statistics section of the Kenyan Treasury, Open Doors (1961-1965), the office of the Kenya students adviser in New York City, the African-American Institute, the British Council, the Commonwealth Universities Yearbook, UNTAB, the Kenya Embassy in Paris, and "Auslandsstelle des Deutschen."

<sup>2</sup>On April 5, 1964 The New York Times reported that more than 4,000 Kenyans were studying abroad, but this figure included secondary students and is questionable.

### Kenyan Students Studying in the United States

According to Open Doors, 775 Kenyans studied at U. S. colleges and universities during 1963-64 and 100 of these were at the graduate level. Only Nigeria had more students in the United States during 1963-64, and there were almost twice as many Kenyans in the United States as there were at the same level in the United Kingdom. Although estimates vary, there are at least 200 Kenyans at the high school level, a legacy of the "airlifts" of the late 1950s.

The total number of Kenyan students in the United States has increased by at least 100 each year from 1959-60 through 1962-63, and by about 80 between 1962-63 and 1963-64. Although there were approximately 400 new Kenyan students in the United States in both 1961-62 and 1962-63, the total of new students for 1963-64 was only 172, an indication that more students are staying for longer periods of time. Whereas 50 per cent of the Kenyans attending U. S. post-secondary institutions were graduate students in 1957-58, only 10 per cent in 1960-61 and 13 per cent in 1963-64 were in that category.

As of March 1, 1965, the Kenya students adviser in New York City listed 1,037 Kenyan students in the United States. Of the 930 at the post-secondary level (155 more than were recorded by Open Doors) 166 were graduate students. The remaining 107 Kenyans were listed at the high school level. As of March 1965, 545 Kenyans were recorded as having completed courses in the United States and Canada and returned to Kenya.

The largest number of Kenyans studying in the United States have been enrolled in the social sciences and the fewest in agriculture. The distribution of students by field of study over the past four years is indicated below.

TABLE 11

FIELD OF STUDY OF KENYAN STUDENTS IN THE UNITED STATES, 1960-64

Field	1960-61	1961-62	1962-63	1963-64	
				Total	Graduate Students
Social Sciences	124	215	241	296	39
Physical & Natural Sciences	63	89	111	133	17
Humanities	38	60	64	71	4
Business Adminis.	24	37	78	89	9
Medical Sciences	33	54	69	51	12
Engineering	13	27	48	56	5
Education	20	36	40	35	10
Agriculture	10	17	29	31	4

Most students have received private financial support; the Kenyan government has sponsored the smallest number. The sources of support are shown below.

TABLE 12

SOURCES OF SUPPORT FOR KENYAN STUDENTS IN THE UNITED STATES

Source of Support	1960-61	1961-62	1962-63	1963-64
Private	202	292	126	146
U.S. Coll. or Univ. & Private	...	...	264	230
U.S. Government	24	75	117	129
Self-Sponsored	54	70	51	72
U.S. Coll. or Univ. & Government	...	...	65	60
Private & U.S. Government	13	38	20	19
Private & Foreign Government	3	18	21	34
Foreign Government	10	17	7	13

The ASPAU Program. The ASPAU program, initiated in 1961, has brought 71 Kenyans to the United States to date. Six students graduated in June 1964, one in October 1964, and one has been repatriated. It is estimated that 14 students will graduate in

1965, 4 in 1966, 15 in 1967, and 11 in 1968. The ASPAU program does not appear to draw students away from the University of East Africa. In 1964, for example, only 10 per cent of the 26 students identified by the Kenya Central Selection Committee had Higher School Certificates, which are required for admission to the university.

The AFGRAD Program. A total of 13 Kenyans have studied or are now studying in the United States at the graduate level under AFGRAD sponsorship. Four students were selected for 1963-64 in biology, chemistry, medicine, and engineering. The nine additional students are studying under AFGRAD for 1964-65; three are in medicine, two in agriculture, two in biological sciences, one in finance, and one in personnel and industrial relations.

Kenyans Studying in the United Kingdom

According to British figures, the total number of Kenyan students enrolled in post-secondary and university courses in the United Kingdom was 1,592 in 1961-62, 1,509 in 1962-63, and 1,593 in 1963-64. Of these, the number of students at the university level during the three years was 400, 445, and 393 respectively.

The number of graduate students was 50 (12.5 per cent) in 1961-62, 78 (17.5 per cent) in 1962-63 and 48 (12 per cent) in 1963-64.

The greatest number of students have been enrolled in the arts, then in medicine, and the fewest in dentistry, as shown below.

TABLE 13

FIELD OF STUDY OF KENYANS ATTENDING UNIVERSITIES  
IN THE UNITED KINGDOM, 1961-64

Field	1961-62		1962-63		1963-64	
	Total	Graduate Students	Total	Graduate Students	Total	Graduate Students
Arts	110	22	122	36	109	14
Medicine	99	9	100	14	74	7
Technology	58	7	69	6	81	10
Pure Science	48	7	58	9	58	9
Social Studies	56	4	52	7	39	4
Agric. & Forestry	16	1	28	5	18	3
Veterinary Science	8	--	12	--	10	1
Dentistry	5	--	4	.1	4	--
Total	400	50	445	78	393	48

According to the Commonwealth Universities Yearbook, 45.5 per cent of the Kenyans in the United Kingdom at the university level were known to hold awards in 1961-62; 47 per cent were known to hold awards in 1962-63.

The number of Kenyans at the post-secondary nonuniversity level has been between 1,062 and 1,200 during the last three years. In 1963-64, most of these students were enrolled in technical colleges (567), nursing schools (324), and institutions offering professional and practical training (187). A very high proportion of students in technical colleges have been working for the General Certificate of Education examinations, though the percentage has declined since 1961-62. In that year 204 (42 per cent) out of 485 enrolled in technical colleges were working for the G.C.E. The figures for 1962-63 were 199 (39 per cent) out of 512 for 1963-64, 195 (34 per cent) out of 567.

British Technical Assistance Bursaries have been awarded to 284 Kenyan students since January 1, 1964. Of these 284, 81 are in administration, 28 in engineering, and about 20 each in medicine, agriculture, forestry and veterinary science, education, marine engineering and navigation, and post office courses.

#### United Nations Fellowships

A total of 163 technical assistance fellowships have been awarded to Kenyans from 1960 through 1963 under the regular and expanded programs of the United Nations. Of these, 57 were awarded in 1963: 17 by UNTAB, 17 by ILO, 10 by WHO, and 1 by UNESCO.

#### Kenyans Studying in the Soviet Union and Eastern Europe

Figures from the Kenyan Ministry of Education indicate that as of November 1964 at least 142 Kenyans are studying in Eastern European countries during 1964-65. Of these, 62 are in Yugoslavia, 50 in Bulgaria, 15 in Czechoslovakia, 10 in Hungary, and 5 in Romania.

Although the number of Kenyans presently in the Soviet Union is not known (there were at least seven in 1960-61), it seems apparent that the number will increase in the near future. Three hundred scholarships were offered to Kenyans for study in the U.S.S.R. during the academic year 1964-65; 200 of these were offered by the Soviet government and were tenable for a wide range of academic and technical courses at Russian universities and other institutions of higher learning; the remaining 100 were offered by Russian trade unions and cultural organizations for study

at Patrice Lumumba Friendship University and other universities in the U.S.S.R. According to a Kenyan newspaper, the U.S.S.R. hopes that at least 300 Kenyans will go to the Soviet Union annually and that the total will be at least 2,000 by 1968. Some African students studying at Russian universities have been dissatisfied, however. In May 1965, for example, 29 Kenyan students out of a group of 90 at Baku University who protested against the situation there were returned to Kenya before their courses were completed.

#### Kenyans Studying in Canada, France, and West Germany

During 1963-64 there were 69 Kenyans studying in Canada, all but one at the secondary level.

The Kenya Embassy in Paris has reported that there are currently 14 Kenyan students studying in France, 13 of whom have been sponsored by the French government. Of the 14, 5 are at the college level (i.e., they have completed secondary school but have not yet attained university level), and all are studying French. Of the remaining nine, five are undergraduates and four are graduates. Among these, there are three medical students, one student doing research for a doctorate, and one enrolled in higher social studies.

Available figures on the number of Kenyans studying in West Germany are limited. Statistics on foreign students at universities and professional schools on a nonuniversity level for the summer semester of 1963 indicate that there were 11 Kenyans in West Germany for that period. Of these, six were in medicine, one in architecture, one in mining, one in linguistics, one in political economics, and one listed as miscellaneous.

#### Administration of Overseas Study

The government of Kenya is now taking steps to improve the selection and recovery of overseas students so that their education can be more directly related to the country's manpower needs. All offers of overseas scholarships are approved by the Ministry of External Affairs before going to the Central Selection Committee within the Ministry of Education. It is then the responsibility of the Central Selection Committee to consider the educational merits of the proposed scholarships and to select the students. Theoretically all scholarships must be cleared through the committee, but there have been several notable exceptions to this

procedure.<sup>1</sup> Since the British Overseas Development Ministry and AID participant training programs are job-oriented, they operate through the Directorate of Personnel rather than the Ministry of Education.

A Central Registry of Students is being established in the Ministry of Education with the support of the Ford Foundation. Other mechanisms are also needed, however. Kenya's student advisers and embassy and consulate staffs are too few in number to cope with the task of maintaining information on students under their jurisdiction. Plans are being discussed by AID and AAI to alleviate this situation by providing counselors to assist the Kenyan student advisers.

AID and the Ford Foundation have sponsored several recruitment missions made up of representatives of the Public Service Commissions of the three East African governments and the East African Common Services Organization. These trips were of limited value because of insufficient lead time to prepare for the visit in a systematic way.

---

<sup>1</sup>The most dramatic case was in the spring of 1964 when a group of students selected by the committee to go to Bulgaria were pushed aside at the airport by a group assembled by the Minister for Home Affairs (now Vice President) Oginga Odinga.

**MANPOWER BALANCE SHEET**

The Manpower Supply-Demand Equation

While recognizing the numerous variables involved, the 1965 manpower survey compared projections on supply (provided by the Ministry of Education) with the projected requirements identified in Table 3. The following Class A balance sheet may be compared with the estimated requirements set forth in Table 3 on page 18.

TABLE 14

**CLASS A OCCUPATIONS: SHORTFALLS AND SURPLUS, 1970**

Occupation	Total Requirements by 1970	Estimated Supply to 1970	Shortfalls or Surplus		
Architects (buildings)	63	36	- 27		
Town Planners	15	7	- 8		
Quantity Surveyors	24	24	0		
Civil Engineers	173	621	- 55		
Electrical Engineers	207				
Telecommunication Engineers	86				
Mechanical Engineers	206				
Industrial Efficiency Engineers	0				
Safety Engineers	4				
Chemical Engineers	13			20	+ 7
Mining Engineers	2			2	0
Agricultural Engineers	3			10	+ 7
Naval Architects	0			0	0
Surveyors	44	24	- 20		
Chemists	64	87	+ 23		
Physicists (soil, hydrology, meteorology)	6	46	+ 32		
Geophysicists	0				
Meteorologists	8				
Geologists	3	5	+ 2		
Veterinarians	49	53	- 11		
Veterinary Bacteriologists	12				
Animal Scientists (domestic animals)	3				

TABLE 14 -- Continued

CLASS A OCCUPATIONS: SHORTFALLS AND SURPLUS, 1970

Occupation	Total Requirements by 1970	Estimated Supply to 1970	Shortfalls or Surplus
Biologists	3	102	+ 70
Zoologists	21		
Bacteriologists	3		
Biologists	5		
Botanists	12	12	0
Agronomists	81	219	+ 131
Scientific & Fumigation Officers	2		
Horticulturists	5		
Silviculturists	28		
Soil Scientists	2	2	0
Physicians & Surgeons	478	214	- 274
Physiologists (medical)	3		
Pathologists (medical)	7		
Dentists	22		
Pharmacists	130	58	- 72
Optometrists	5	0	- 5
University Teachers (arts)	118	I.N.A. <sup>a</sup>	- 118 <sup>b</sup>
University Teachers (sciences)	137	I.N.A. <sup>a</sup>	- 137 <sup>b</sup>
Secondary School Teachers <sup>c</sup>	1,934	545	-1,698
Teachers	309		
Lawyers	233		
Authors, Journalists, & Related Writers	61		
Accountants (professional)	151	61 <sup>d</sup>	0
Librarians	14	128	- 23
Economists	15	12	- 2
Statisticians	15	15 <sup>e</sup>	0
Mathematicians	19	71	+ 43
Psychologists	9		
Personnel Specialists (industrial)	6	0	- 6
Translators	15	15	0
Interpreters	10	I.N.A. <sup>a</sup>	- 10 <sup>b</sup>
Designers (industrial & commercial products)	2	I.N.A. <sup>a</sup>	- 2 <sup>b</sup>
	2	2	0

TABLE 14 -- Continued

CLASS A OCCUPATIONS: SHORTFALLS AND SURPLUS, 1970

Occupation	Total Requirements by 1970	Estimated Supply to 1970	Shortfalls or Surplus
Professional & Technical Workers	9	3	- 6
Administrators (government)	395	395	0
Directors, Managers, & Working Proprietors	380 <sup>f</sup>	380	0
<b>TOTAL</b>	<b>5,611</b>	<b>4,637<sup>g</sup></b>	<b>-974</b>

<sup>a</sup>Information not available.

<sup>b</sup>These shortfalls will probably be met by surpluses in other occupations and the output of university graduates which has not been allocated to specific occupations.

<sup>c</sup>The employment figures include graduate teachers only. In addition, there are 737 nongraduate teachers. The shortfall will be met by the Ministry of Education plan, which includes recruitment of expatriate teachers and the training of nongraduate teachers.

<sup>d</sup>Of this supply, 26 will be graduates with degrees in journalism and 35 will be graduates with B.A.'s.

<sup>e</sup>There will be an estimated total of 270 graduates with economics degrees. Since relatively few individuals work in posts specifically labeled "economist," the 255 other persons with economic degrees have been included in the supply of government administrators and directors, managers, and working proprietors (the last two occupations listed in this table).

<sup>f</sup>The total requirement for this category is estimated at 1,520. About 25 per cent of the posts included in this total will call for a university degree, and therefore these have been included in Class A. The remaining 1,140 posts are in Class C.

<sup>g</sup>This total includes 1,225 university graduates in the following fields that have not been allocated to specific occupations: music, 16; B.A., 536; social sciences, philosophy, and anthropology, 138; general science, 535.

The following table, reproduced from the survey, shows those fields in which shortages are expected and others in which it appears that there will be a surplus.

TABLE 15

SELECTED CLASS A OCCUPATIONS: SHORTFALLS AND SURPLUS

Occupation	Estimated Shortfall	Estimated Surplus
Graduate Secondary Teachers	-1,698	
University Teachers (science)	- 137	
University Teachers (arts)	- 118	
Physicians, Surgeons, & Pathologists	- 274	
Pharmacists	- 72	
Surveyors	- 20	
Engineers	- 55	
Architects	- 27	
Lawyers	- 22	
Chemists		+ 23
Physicists & Meteorologists		+ 32
Biologists, Zoologists, & Bacteriologists		+ 70
Agronomists and Horticulturists		+131

In comparing the estimated shortfall of 1,698 graduate secondary teachers to the supply of 1,708 teachers in 1970 shown in Table 9, on page 32, it should be noted that the latter figures includes nongraduate Kenyan teachers and also the projected supply of graduates from overseas.

The following table, also from the survey, groups Class A occupations according to educational requirements.

**TABLE 16**  
**CLASS A OCCUPATIONS BY EDUCATIONAL LEVEL**

Occupations	Demand	Supply	Shortfall or Surplus
Science/Math. Based Occupations: (doctors, engineers, graduate science teachers, geologists, etc.)	3,108	1,773	-1,335
Other Occupations requiring Specialized Training: (lawyers, nonscience teachers, etc.)	1,667	803	- 864
Occupations Open for Non- Specialized Degrees	836	2,061	+1,225

The 1,225 unallocated graduates are in such fields as the social sciences, general sciences, philosophy, and the arts. It is clear that they constitute an important potential source of secondary teachers, and both the government of Kenya and external donors are considering ways to tap this source.

Turning to Class B, the following table from the survey indicates the projected demand, supply, and shortfall or surplus in each occupational group.

TABLE 17

CLASS B OCCUPATIONS: SHORTFALLS AND SURPLUS

Occupation	Total Requirements by 1970	Estimated Supply to 1970	Shortfalls or Surplus
Meteorologists (assistant)	12	6	- 6
Professional Nurses (sr. & supervisory)	372	372	0
Nurses (staff & general duty) <sup>a</sup>	573	160	- 413
Midwives	100	100	0
Compounders	23	24	+ 1
Physiotherapists	5		
X-Ray Operators (medical)	41	36	- 10
Other Medical Technicians <sup>b</sup>	269	300	+ 31
Dieticians	2	0	- 2
Primary School Teachers <sup>c</sup>	18,797	15,633	-3,164
Religious Leaders	668	519	- 149
Commercial Artists	17		
Interior Decoration Designers	2	48	+ 27
Display Artists	2		
Radio & T.V. Announcers	35	I.N.A. <sup>d</sup>	I.N.A. <sup>d</sup>
Draftsmen	247	33	- 214
Technicians (engineering)	469		
Technicians (industrial lab.)	48	145	- 649
Technicians (research lab.)	226		
Science & Eng. Technicians	51		
Agricultural Technicians (field staff)	599		
Livestock Officers (field staff)	269	975	+ 107
Forestry Officers (field staff)	147	280	+ 133
Accountants (noncertified)	393	83	- 310
Social Workers	139	116	- 23
Taxidermists	1	0	- 1
Buyers	6	2	- 4
Hunters & Game Wardens	39	I.N.A. <sup>d</sup>	I.N.A. <sup>d</sup>
Fisheries Officers	6	3	- 3

TABLE 17 -- Continued

CLASS B OCCUPATIONS: SHORTFALLS AND SURPLUS

Occupation	Total Requirements by 1970	Estimated Supply to 1970	Shortfalls or Surplus
Ship Engineers & Officers	33	31	- 2
Aircraft Pilots, Navigators & Flight Engineers	114	...	- 114
Radio Communication Operators	109	109	0
TOTAL	23,814	18,975	-4,839

<sup>a</sup>Again it should be noted that many of these nurses have not completed secondary education but enter training after completion of standard 8 or 9.

<sup>b</sup>All but four of these are medical assistants and health visitors employed by the central and local governments.

<sup>c</sup>These figures include graduates, primary 1 and primary 2 teachers only. There are an additional 14,698 trained teachers (but not graduates) and 8,649 untrained teachers.

<sup>d</sup>Information not available.

When selected individual occupations in Class B are ranked according to shortfall or surplus, substantial imbalances appear.

TABLE 18

SELECTED CLASS B OCCUPATIONS: SHORTFALLS AND SURPLUS

Occupation	Shortfall	Surplus
Primary School Teachers	-3164	
Technicians (engineering & lab.)	- 649	
Nurses (staff & general duty)	- 413	
Accountants (noncertified)	- 310	
Draftsmen	- 214	
Aircraft Pilots, Navigators & Flight Engineers	- 100	
Medical Technicians		+ 31
Agriculture & Livestock Technicians		+107
Forestry Officers (technician level)		+133

According to the manpower survey, most Class B jobs are in the government and most of the formal training for these positions, unlike that for Class A positions, is under the jurisdiction of the various ministries. Thus, although trained primary teachers and certain other jobs will be in very scarce supply, the appropriate ministries can keep the supply and demand of Class B in better balance than is the case with Class A supply and demand.

Manpower Data and Educational Planning. These calculations on manpower supply and demand are derived from the 1965 survey. As indicated above, this survey is as good as any of its kind, and the estimates of requirements and of supply are useful for planning purposes, although it is disappointing that the survey did not include nongovernmental agricultural employment. The calculations

identify the areas and the general orders of magnitude of anticipated shortages.

Those concerned with plans for and assistance to educational development will be interested in the estimates of shortages. The most critical, of course, is the shortage of teachers -- primary, secondary, and university. These figures reveal the importance of maintaining a supply of teachers, particularly at the secondary and university levels, if continued expansion of the educational system is to take place as planned. Table 16, which is a summary calculation, also points to the serious imbalance between the estimated supply of individuals prepared for the science- and mathematics-based occupations and those prepared for occupations open to individuals with nonspecialized degrees.

The tables from the manpower survey suggest that there will be surpluses of agronomists, horticulturists, biologists, zoologists, chemists, physicists, and technicians in forestry, agriculture, and medicine, although the actual numbers in each are not large. These surpluses are particularly puzzling in that they occur in many of the fields often identified as high priorities. Yet it should be recognized that if jobs are not available in the special fields for which these persons are prepared, there will be employment opportunities in other fields. The large shortage of teachers already has been emphasized. This field can more than absorb the so-called surpluses. There also will be opportunities for employment in the private sector. As settlement schemes, cooperatives, and private farming develop, the demand for agronomists and agricultural technicians should increase significantly.

59'

TANZANIA

Report Number 3B

## INTRODUCTION

### The Land and the People

Tanzania achieved political independence in December 1961 after having been a German colony, a mandate, and later a trust territory under British rule.<sup>1</sup> Much of the country's 341,000 square miles is arid bush, and most of its 9.5 million people live on the periphery, along the Indian Ocean to the east, the great lakes in the west, or the highlands in the north and south.

As in Kenya and Uganda, the socioeconomic level of the population in Tanzania can be roughly divided along racial lines. Some 20,000 Europeans have dominated the top-level positions in the civil service, agriculture, and industry, and they continue to hold most of the technical and professional jobs. At the middle level the Asian community of roughly 100,000 control most of the country's commercial enterprises as well as many of the subprofessional positions in the civil service. Although the situation is changing rapidly, the vast majority of the population is engaged in subsistence agriculture, earning roughly \$50 per capita. At the time of independence, nearly all of the high-level jobs in the government were held by expatriates.

### The Tanzanian Economy

Tanzania's GNP is largely dependent on agricultural production, and the rate of economic growth, therefore, varies with weather conditions and world prices. Before 1961 the annual rate of increase in GNP averaged five per cent. In 1961 drought and crop failures were responsible for a decline in the growth rate, which fell to 0.4 per cent. Since that time, however, the annual rate of growth has been high, reaching six per cent in 1963. The Five-Year Development Plan for 1964-69 projects an average annual increase in gross domestic

---

<sup>1</sup>Since the initiation of this study, Tanganyika merged with Zanzibar to form the United Republic of Tanganyika and Zanzibar, which in turn took the name Tanzania. Unfortunately, it has not been possible to include Zanzibar in this report. In the areas of manpower and educational planning and administration, the separate operations of Tanganyika and Zanzibar have not yet been coordinated. Therefore, this report refers solely to what was formerly Tanganyika.

product of 6.7 per cent, and the government realizes that future growth must be based on progress in the nonagricultural sectors as well as on increased agricultural production.

Employment Problems. In spite of this reasonably high rate of growth, wage and salary employment in the modern sector has actually been declining since 1960. Although there has been an average annual rise in GDP of four to five per cent, wage and salary employment dropped from 405,000 in 1960 to 339,400 in 1963 -- a decline of 16 per cent. By July 1964, however, employment had risen to 353,000. The 1964-69 development plan expects to increase the level of employment to 540,000 by 1970 and to double employment in the modern sector by 1980. At present this sector of 400,000 employed persons supporting two million population represents about 20 per cent of the total population. By 1980 it is expected that 800,000 employed persons will support a population of four million, the labor force thus representing almost 29 per cent of the total population -- a gain of 45 per cent in 15 years.

Yet in spite of these favorable expectations, Tanzania, like other developing countries, is plagued with the problems of unemployment. While no reliable quantitative data are available, there is clear evidence of a serious urban unemployment problem. In Tanzania, as in other African countries this situation is an unfortunate by-product of development. The relatively rich and attractive but small modern sector, established in the midst of a very poor and very large traditional sector, acts as a magnet, drawing the masses of underemployed who are barely eking out a living in rural areas. Thus, the unemployed consist largely of displaced rural population.

The five-year plan provides various programs designed to strengthen the traditional sector. Educational plans also deliberately hold down expansion of primary education, in part to minimize the problem of masses of unemployed primary school-leavers.

## NATIONAL AND HUMAN RESOURCE DEVELOPMENT

### Early Development Plans

Tanzania's manpower planning is relatively advanced, both in

the systematic analysis of its needs and in the establishment of effective machinery for the implementation of its goals. The extreme scarcity of human resources has forced the government to plan as rationally as possible.

Development planning in Tanzania dates from 1943, when a development branch was established in the secretariat of the administration. In the following year development proposals were published, and in 1946 a ten-year plan was prepared in response to the United Kingdom Commonwealth Development and Welfare Program. This plan was accepted by the Legislative Council in 1947; it was revised in 1950 and the following years, until in 1955 it was superseded by a new five-year plan. In 1961, prior to independence, a £24 million three-year development plan was announced, based on recommendations of the Economic Survey Mission of the International Bank for Reconstruction and Development. All of these plans had been essentially capital works expenditure programs, limited to the public sector of the economy.

#### The New Five-Year Development Plan, 1964-1969

Finally, in the spring of 1964 the government issued a new Five-Year Development Plan for July 1964 to June 1969.<sup>1</sup> This was produced after more than a year of effort by the Directorate for Development Planning under the leadership of the Director of Planning, Mr. J. Faudon, a French economist loaned to the Tanzanian government. The plan was prepared only after thorough consultations within both the public and private sectors. The separate government ministries, as well as industry, labor, and cooperative groups, and regional and local agencies were brought into the planning processes. Similarly, publication of the plan was followed by a concerted effort to publicize and explain it widely.

Objectives of the Five-Year Plan. Unlike its predecessors, the new five-year plan is a comprehensive program concerned with all aspects of development: economic and social, public and private, national and regional. It outlines ambitious but realistic objectives for the five-year period which are

---

<sup>1</sup>The Five-Year Development Plan of Tanganyika, July 1964 to June 1969, Volumes I and II, (Dar es Salaam, Tanzania: Government Printer, 1964).

proposed as steps toward long-term goals extending to 1980. Thus, it is the first of three interrelated plans. The plan's objectives include: doubling of per capita income in five years to achieve an overall increase from £19.6 in 1961 to £45.1 in 1980; self-sufficiency in skilled professional and managerial positions by 1980; and an increase in life expectancy from the present 35 or 40 years to 50 years. The principal programs of the plan aim to: (1) increase agricultural production, primarily through community development and cooperative schemes; (2) expand the industrial sector; (3) expand the commercial network; and (4) increase social services, including education.

Financing the Plan. The five-year plan anticipates that £246 million will be spent in the public and private sectors during the 1964-65 period, including £6.5 million carried over from the 1961-64 three-year plan. Of this £246 million total, £72 million constitutes the development expenditure of the central government for its own programs and £30 million the funds that the central government will make available to quasi-governmental organizations for their own programs. Local government expenditure is expected to total £ 10 million. The East African Common Services Organization's investment programs amounting to £18 million have been included in the projected budget, making a total of £130 million to be spent in the public sector. The balance of gross capital formation of £116 million represents contributions of the private sector and includes £21 million to be obtained by quasi-governmental organizations from private sources.

Of the £102 million to be supplied by the central government, £22 million is expected to come from domestic savings and £80 million from loans and grants by external donors. The £116 million from the private sector includes £3.4 million in grants for health and education from voluntary agencies overseas.

At this writing the development plan remains largely a declaration of intentions. Ministries are still devising and implementing programs. On the basis of the EWA survey, it is not possible to judge precisely whether or not the national economy will be able to sustain the costs of educational expansion provided in the development plan or whether the projected educational capabilities represent unrealistic aspirations beyond economic capabilities. It should be noted,

however, that the UNESCO Educational Planning Mission for Tanganyika which surveyed the country from June to October 1962 (before the five-year plan was prepared), concluded "it would be most unwise to base plans for education on growth of local resources, i.e., of gross domestic product, exceeding three percent per annum in real terms."<sup>1</sup> No other testimony available to this survey suggests that development plans, including those for education, are not realistic and feasible. Certainly Tanzania should aspire to nothing less. Yet ultimately success will depend to a very considerable extent upon the amount of external assistance that becomes available. One of the most serious obstacles to accomplishment of the plan may be the shortage of creative administrators needed to formulate and implement programs and to undertake feasibility studies.

#### Manpower Planning Machinery

Responsibility for preparing and implementing the five-year plan rests with the Directorate of Development and Planning. The directorate initially was established as a separate ministry, but following the promulgation of the 1964-1969 plan it was relocated within the office of the President. Each ministry prepares its own plans within the framework of broad targets formulated by the directorate and approved by the Economic Development Commission. These are then synthesized and coordinated by the directorate. The commission, to which the directorate reports, is an economic policymaking committee of the Cabinet, chaired by the President.

While some evidence suggests that there is tension within the government with respect to the implementation of the development plan, due to divisions of responsibility among the Directorate for Development Planning, the Central Establishment Division of the office of the Second Vice President, and the Treasury, arrangements seem to work reasonably well.

The Manpower Planning Unit. In accordance with a recommendation of the Tobias report, the Manpower Planning unit was

---

<sup>1</sup> United Nations Educational, Scientific and Cultural Organization, "Report of the UNESCO Educational Planning Mission for Tanganyika, June to October 1962." Paris: January, 1963.

established within the Directorate of Development and Planning. This has been headed since July 1963 by Robert Thomas, placed with the assistance of the Ford Foundation. Thomas is assisted by two Tanzanian assistant manpower officers, one of whom is on overseas study leave and the other is a junior economist. Both men are receiving special training.

The Manpower Planning Unit is served by a Standing Manpower Advisory Committee composed of senior officials from ministries that have major responsibilities for manpower activities. The permanent members include representatives of the Ministries of Education, Labor, Cooperative and Community Development, National Culture and Youth, and the Establishment Division of the President's office. In addition, organizations representing workers and employers have designated representatives.

The Manpower Planning Unit is responsible for determining the manpower implications of the five-year plan and for assuring that they are clearly understood and feasible. The unit is also responsible for seeing that all necessary actions are taken so that the manpower requirements of the plan, once established, are met. It works with educational and training authorities to assure that output meets the needs of economic development and coordinates foreign offers of technical assistance in order to assure that they are related to the country's needs.

Manpower planning is more effectively administered in Tanzania than in most, if not all, African countries. In part this stems from the fact that President Nyerere takes a personal interest in this matter, and the authority of his office supports the Manpower Planning Unit. This unit works closely with other ministries to identify their manpower requirements, and it is empowered to use various means ranging from informal discussion and persuasion to the threat of ministerial directive to secure the participation of other government agencies in the implementation of manpower programs. The unit also consults with and advises representatives of education, business, and community interests and has undertaken further manpower assessments. In addition to the recently completed manpower survey, several other studies are underway, including:

1. A comprehensive labor force survey, showing the size of the labor force, the nature and numbers of its major components, and extent of unemployment. This survey was initiated in September 1964 with the financial assistance of the Ford Foundation.

2. An employment trend series, just initiated, that will show both agricultural and nonagricultural wage and salary employment by industry and possibly by region, once each quarter.
3. A quarterly unemployment survey prepared by the National Union of Tanzania Workers.

The Manpower Planning Unit, moreover, has been directed to report to the President semi-annually on manpower problems and programs. The first report, for July - December 1963, was issued early in 1964. The manpower planning adviser suggested that henceforth this report be prepared on an annual basis.

The Africanization Commission. Another element in the organization of the government for manpower planning is the Africanization Commission. This was established in February 1962 by the then Prime Minister (now President) to ensure that a satisfactory plan for complete Africanization of every level of the Civil Service exists, to investigate the adequacy of in-service training schemes, and to report to the Cabinet from time to time. The Africanization Commission has issued two reports, for 1962 and 1963.

The work of this commission is supported by the Central Establishment Division in the office of the Second Vice President. Until recently David Anderson, formerly of the British Colonial Service but placed in Tanganyika by the Ford Foundation, served as staff development adviser in this division, assisting in the implementation of orderly Africanization policies and procedures. Anderson now has taken a similar post in the Kenya government; his position in Tanzania has been filled by Edward Rubin, also placed by the Ford Foundation.

#### Implementation of Planning Goals

The analysis of manpower requirements and the establishment of manpower planning goals have been accomplished in Tanganyika within the context and administration of development planning as a whole. The 1961-64 three-year plan included provisions for the development of secondary and technical education. The 1964-69 five-year plan places even greater emphasis upon educational and training programs designed to meet the needs of the economy and the government for high-level manpower and

auxiliary personnel. These programs are based on the goal that in 1980 "Tanganyika will, except for some rare and highly specialized occupations, become self-sufficient in manpower in all economic fields and at all professional levels."<sup>1</sup>

#### Surveys of Manpower Supply and Demand

A number of manpower analyses for Tanganyika have been prepared in recent years. In 1960 a survey was made by John L. Thurston for the Ford Foundation. The following year J. Donald Kingsley and Thurston made further recommendations on manpower and education, and in 1962 Arthur D. Little, Inc., prepared a report on investment opportunities that included comments on manpower deficiencies that hampered industrialization. In 1962 Guy Hunter prepared an assessment of high-level manpower in East Africa for the University of East Africa. Subsequently George Tobias prepared a comprehensive study, "High-Level Manpower Requirements and Resources, 1962-1967," at the request of the Tanganyikan government and with the support of the Ford Foundation. The Tobias report was completed in August 1962 and published, together with the government's statement, in March 1963.

The Tobias calculations were made more than a year before the government's five-year development plan was published. The five-year plan incorporated estimates of new manpower requirements with the data from the Tobias survey. A more complete revision of the Tobias calculations, based upon the five-year plan and other new data, was completed in December 1964 under the direction of Robert Thomas, manpower planning adviser, in the directorate of Development and Planning.<sup>2</sup> Whereas the Tobias report was a comprehensive undertaking, providing not only statistical information but also developing a thesis for broad manpower planning and implementation, the Thomas study is chiefly an updated report on manpower requirements.

Coverage of the 1964 Survey. The 1964 manpower survey followed the basic methods and frame of reference used by Tobias in 1962. It was prepared through direct interviews with

---

<sup>1</sup>Tanzania, Tanganyika: Five Year Plan for Economic and Social Development, July 1, 1964, through June 30, 1969. Two volumes, Dar es Salaam, 1964.

<sup>2</sup>Directorate of Development and Planning, Office of the President, Survey of High Level Manpower Requirements and Resources For the Five Year Development Plan 1964-65 to 1968-69, Dar es Salaam, 1964.

government agencies and private employers, thus eliminating the inaccuracies inherent in the use of questionnaires and permitting careful standardization of occupational terminology describing job content and titles as well as the training levels required for adequate performance.

The occupational coverage was 72.3 per cent of nonagricultural employment. As in the recent survey in Kenya, agricultural employment outside of government was excluded. The Manpower Planning Unit justified this decision, declaring that sample studies indicate that practically all high-level personnel (agronomists, veterinarians, and others) are employed by the government and are thus included in the survey. The proportion of Tanzania's high-level manpower surveyed, moreover, was actually far higher than 72.3 per cent due to the heavy concentration of these individuals in government and in the larger firms.

The overall dimensions of employment in Tanzania, as reported by the 1964 survey, are as follows:

TABLE I  
EMPLOYMENT AND OCCUPATIONAL COVERAGE

Field of Employment	Total Employment	Employment in Surveyed Establishments (August 31, 1964)	Per Cent Surveyed
Mining	6,774	3,188	47 %
Manufacturing & Processing	23,073	18,280	80 %
Construction (Private)	12,771	5,197	40 %
Commerce/Distribution	16,676	4,200	25 %
Transport/Communication <sup>a</sup>	25,300	21,660	85 %
Service	22,635	2,200	10 %
All Government-Central & Local (Excluding Quasi-Governmental)	1,720	1,720	100 %
	<u>82,380</u>	<u>82,380</u>	<u>100 %</u>
TOTAL	191,300	138,825	72.3%

<sup>a</sup>Including East African Common Services Organization enterprises.

**Estimates of Future Manpower Requirements**

The survey derives estimates of future manpower requirements from three sources: (1) statistics on present employment; (2) estimates of wastage due to withdrawal of expatriates as well as death and retirement; and (3) additional needs created through achievement of the five-year plan's goals. When the two kinds of wastage described above are combined with the current unfilled vacancies, they represent from 50 to 60 per cent of the total manpower needs in all categories over the next five to fifteen years. In the high-level categories alone, the survey estimates wastage for the next five years in the public and private sectors respectively at 20 and 20 per cent for Africans, 35 and 25 per cent for Asians, and 25 and 20 per cent for Europeans.

The survey estimates for Class A manpower are shown in the following table:

TABLE 2

CLASS A MANPOWER:  
PRESENT EMPLOYMENT AND FUTURE REQUIREMENTS

Occupation	Total Employment 1964-1965	Employed Africans 1964-1965	Employed Asians 1964-1965	Employed Europeans 1964-1965	Current Vacancies	Required Replacements In 5 Years	Total Requirements 1968-1969
Architects (buildings)	18	3	8	7	13	3	19
Town Planners	5	1	0	4	3	1	16
Quantity Surveyors	14	0	0	14	2	3	10
Civil Engineers (general)	156	8	17	131	44	38	128
Electrical Engineers (general)	80	17	22	41	27	18	83
Mechanical Engineers (general)	122	8	29	85	23	28	122
Telecommunication Engineers	12	1	0	11	1	2	10
Chemical Engineers (general)	4	0	0	4	0	1	5
Metallurgists (extractive)	3	0	0	3	0	0	1
Mining Engineers (general)	6	0	0	6	0	1	2
Industrial Efficiency Engineers	1	0	0	1	1	0	1
Surveyors (general)	50	12	8	30	19	9	47
Chemists (general)	27	2	4	21	4	6	28
Geologists	31	3	0	28	4	10	17
Veterinarians (general)	31	2	2	27	33	8	44
Biologists (general)	3	0	0	3	2	1	4
Zoologists	15	1	0	14	3	4	12
Biologists & Animal Scientists	2	0	0	2	2	1	3
Agronomists (field & Research)	75	22	2	51	53	18	148
Horticulturists	0	0	0	0	1	0	2
Silviculturists	55	5	0	50	9	14	38
Physicians (general practice)	434	42	131	261	40	148	325
Pathologists (medical)	0	0	0	0	3	0	4

TABLE 2 - Continued

CLASS A MANPOWER:  
PRESENT EMPLOYMENT AND FUTURE REQUIREMENTS

Occupation	Total Employment 1964-65	Employed Africans 1964-65	Employed Asians 1964-65	Employed Europeans 1964-65	Current Vacancies	Required Replacements in 5 Years	Total Requirements 1968-69
Dentists	16	0	7	9	3	3	25
Pharmacists	49	7	21	21	8	8	41
Dieticians	2	0	0	2	0	1	1
University Teachers (arts)	27	5	2	20	5	13	52
University Teachers (sciences)	4	0	0	4	11	4	27
University Teachers (other)	7	1	1	5	3	3	9
Teachers (secondary school graduates)	563	38	112	413	0	460	700
Teachers (secondary school diplomas)	44	22	3	19	0	25	115
Teachers (Dar es Salaam Technical College)	34	4	3	27	9	28	48
Lawyers (general)	181	41	95	45	22	40	82
Authors, Journalists, & Related Writers	46	26	2	18	3	9	47
Accountants (professional)	146	11	56	79	9	33	117
Social Workers (general)	12	12	0	0	2	3	12
Librarians	9	2	0	7	0	2	10
Economists	6	0	0	6	4	1	11
Statisticians	4	0	1	3	4	1	14
Personnel Specialists (industrial)	69	53	8	8	2	16	41
Interpreters	8	0	2	6	4	2	6
Professional, Technical & Related Workers	1	0	0	1	0	0	0
Administrators (government)	248	112	13	123	52	144	322
Directors, Managers, & Working Proprietors	181	42	49	90	7	37	156
<b>TOTAL</b>	<b>2,801</b>	<b>503</b>	<b>598</b>	<b>1,700</b>	<b>435</b>	<b>1,147</b>	<b>2,905</b>

These figures reveal the paucity of qualified Africans at the highest manpower level. Of the 2,801 Class A personnel currently employed, only 500 or 17.5 per cent were Africans, and Europeans constituted more than half of those employed. This situation means that Tanzania must continue to recruit expatriate personnel in substantial numbers during the next 15 years until the goal of manpower self-sufficiency is achieved in 1980. Even to achieve the modest goals of the next five years, an increase of total employment at this level from 2,800 to 2,900 -- a net increase totaling over 1,300, or 47 per cent -- will be required.

The requirements for Class B manpower are shown in the following table:

TABLE 3

**CLASS B**  
**PRESENT EMPLOYMENT AND FUTURE REQUIREMENTS**

Occupation	Total Employment 1964-1965	Employed Africans 1964-1965	Employed Asians 1964-1965	Employed Europeans 1964-1965	Current Vacancies	Required Replacements in 5 Years	Total Requirements 1968-1969
Nurses Professional (senior & supervisory)	187	91	9	87	70	106	245
Nurses (staff & general duty)	670	668	2	0	70	500	870
Physiotherapists	3	0	0	3	1	2	3
X-Ray Operators (medical)	9	7	1	1	4	2	22
Medical Technicians (other)	113	69	33	11	72	29	194
Teachers (primary school)	1,719	1,651	63	5	0	1,255	2,710
Radio Announcers	44	41	0	3	0	9	24
Draftsmen (general)	59	32	22	5	11	15	63
Technicians (engineering)	859	376	146	337	133	200	735
Technicians (research lab)	19	17	1	1	3	4	52
Technicians (industrial lab)	37	30	5	2	2	7	42
Science & Engineering Technical & Lab Assistants	32	17	0	15	0	7	24
Agricultural Technicians (field officer)	206	69	3	134	84	52	340
Agricultural Technicians (assistant field officers)	1,300	1,286	14	0	200	250	900
Accountants (non certificated)	395	52	165	178	34	108	269
Engineer Officers (ship)	24	16	2	6	0	4	13
Aircraft Pilots, Navigators, & Flight Engineers	16	0	0	16	0	3	4
Radio Communication Operators	86	45	2	39	18	15	43
<b>T O T A L</b>	<b>5,778</b>	<b>4,467</b>	<b>468</b>	<b>843</b>	<b>709</b>	<b>2,568</b>	<b>6,562</b>

In the Class B category the situation with respect to African manpower represents a majority, 76.6 per cent. Heaviest dependency upon expatriate personnel is in the technical occupations -- nursing, engineering, agriculture -- and accountancy. But to achieve an increase in total employment from 5,800 at the present time to 6,500 in five years will require, due to wastage and replacement, an input of 3,300, or 57 per cent, which is a larger increase than the 47 per cent required in Class A personnel.

These numbers of new personnel required, 1,300 for Class A and 3,300 for Class B, may not appear large in absolute terms. But in considering Tanzania's resources and the acute shortage of qualified manpower, these additional requirements assume critical importance. The data in the employed Africans columns presented in Tables 2 and 3 reveal how few Africans are in high-level positions. Many occupations are scarcely represented, if at all. Only 34 African engineers are listed, 2 veterinarians, and 42 physicians and no dentists or university science teachers.

Requirements for Agricultural Manpower. Precise information is not available on the requirements for agricultural specialists in Tanganyika. In his 1962 survey, Guy Hunter estimated a need in East Africa for 30 agricultural graduates a year, which suggests a need of 10 per year in Tanganyika. But this estimate was not based upon quantitative analysis. The Tobias survey and the recent government manpower study did not include the private agricultural sector in their manpower calculations. In 1963, however, D.G.R. Belshaw, lecturer in agricultural economics at Makerere College, undertook an East African agricultural manpower survey, which revealed a need in East Africa of at least 800 and probably over 900 agricultural personnel with a first degree or postgraduate training; half of these personnel were needed for government service.<sup>1</sup> Belshaw found immediate need in the period 1963-66 for between 490 and 560 such trainees. He estimated a demand for 165 to 225 postgraduate specialists in the agricultural sciences, who would have two or three years training beyond the first degree. The requirements for Tanganyika alone would be less than one-third in each of these categories. Robert Thomas, however, discounts this degree of need, pointing out that 90 to 95 per cent of all professional agriculturalists are employed by governmental and quasi-governmental enterprises.

---

<sup>1</sup>The Short-run Demand for Agricultural Science Graduates in East Africa: The Final Report of the East African Agricultural Manpower Survey, 1963. Uganda, Makerere University College, 1963.

Requirements for Medical Manpower. A survey of medical manpower requirements in East Africa was undertaken in early 1964 by F.J. Bennett, J.S.W. Lutwama, and S.A. Hall, of the faculty of medicine at Makerere.<sup>1</sup> For Tanganyika they recorded a total of 486 medical practitioners, of whom 153 were in government service in the year 1962. To maintain this ratio of doctors to population, taking care of wastage and replacement, they calculated a need of 27 per year. If this 1:20,000 ratio were to be doubled, however, so that there would be one medical practitioner for every 10,000 persons, their calculations showed a requirement for 1970 to 1979 of 99 medical practitioners per year. The recent manpower survey gives a lower requirement.

Requirements in the Civil Service. The manpower supply picture within the government service is reflected in the reports of the Africanization Commission. In its report for 1963 the commission published the following figures, as of December 31, 1963:

TABLE 4  
CIVIL SERVICE EMPLOYMENT

Category	Gross Figures	Senior and Middle Posts
Established Posts	11,341	6,898
Tanganyikans	6,528	2,782
Non-Tanganyikans	2,720	2,642
Vacancies	2,093	1,474
Non-Tanganyikans Leaving in 1964	421	394
Estimated Number of Tanganyikans in December 1964	7,894	3,717
Per Cent of Tanganyikans in Total Occupied Posts	72.3%	53.1%

<sup>1</sup>Medical Manpower in East Africa: Factors in Planning.  
Kampala, Department of Preventive Medicine, Makerere University  
College, University of East Africa, January 6, 1964.

The figure of 2,782 Tanganyikan citizens in senior and middle posts in December 1963 (most of whom are Africans) shows a marked gain over earlier figures. In 1961 there were 1,170 Africans in this category, and in 1962 there were 1,821. It was expected that the number of citizens would rise to 3,717 by December 1964.

But once again it must be pointed out that in certain fields and notably among the professions, the country is still largely, and in some cases entirely, dependent upon expertise hired from other countries.

### EDUCATIONAL CAPABILITIES

With its relatively small stock of skilled manpower, Tanzania must turn to her educational institutions to fill the gap between needs and present supply. To make matters more difficult, the significant manpower requirements are found precisely in those occupations already short and in those demanding the greatest investment of education and training. The needs are concentrated in practically all of the professions, especially secondary school teachers, engineers and engineering technicians, agricultural scientists and technicians, managerial personnel, and medical personnel. This situation places an exceedingly heavy burden upon the country's educational institutions.

#### The High Attrition Rate in Primary and Secondary Schools

In the past the educational pattern in Tanzania, as elsewhere in Africa, has been characterized by a substantial input into the primary grades but a high level of attrition during these first eight years. Only a small proportion of those completing primary grades, particularly among African students, have continued into secondary schools where the attrition rate has also been high. Relatively few students have attained the School Certificate-level (O-level, completion of secondary Form 4), and even fewer have had the opportunity to continue in Forms 5 and 6 to prepare for Higher School Certificate A-level and possible entry into the university.

This situation is revealed in the following school enrollment figures for November 1961, shortly before independence was achieved.

	<u>Primary</u>	<u>Secondary</u>
Africans: Standards 1 - 4 .....	450,644	
Standards 5 - 8 .....	<u>55,616</u>	
Total.....	506,260	6,031
Asians.....	17,294	9,991
Europeans.....	1,883	679

More significant are the following figures showing the progressive decline in primary and secondary classes.

	<u>Africans</u>	<u>Asians</u>	<u>Europeans</u>
<b>Primary:</b>			
Standard 1.....	138,570	3,000	400
4.....	93,978	2,900	350
5.....	18,465	2,800	200
8.....	9,715	2,045	150
<b>Secondary:</b>			
Form 1 entry.....	2,163	1,914	119
4 entry.....	687	700	60

These figures show a heavy fall-off among African students, although it should be noted that the attrition indicated is somewhat misleading. The drop in secondary African enrollments between Form 1 and Form 4 from 2,163 to 687, for example, was caused primarily by the fact that the number of students entering Form 1 in 1958 (and reaching Form 4 by 1961) was much lower than the number entering Form 1 in 1961. The drop in African students from 93,978 in Standard 4 to 18,465 in Standard 5, however, was related to a test at the end of Standard 4. Only 25 per cent of African students reaching Standard 8 were entering secondary school (Form 1). In 1961 an estimated 407 African boys and 32 girls, and 400 Asian boys and 160 girls received School Certificate passes. At this time there were only four schools in Tanganyika offering fifth and sixth form courses, and one school for Europeans admitted a few Africans. Makerere College in Uganda also offered a two-year pre-entry course for East Africans. Entry to the Higher School Certificate examinations in 1962 among Tanganyikans was 205, with 106 passes.<sup>1</sup>

---

<sup>1</sup>The figures cited for 1961 and 1962 are from Guy Hunter's Education for a Developing Region: A Study in East Africa (London: George Allen and Unwin, 1963), pp. 25-26.

## Educational Plans

Top Priority to Secondary and Higher Education. In formulating its educational plans to rectify this high attrition rate, the government of Tanzania has made some difficult choices in order to utilize limited resources as effectively as possible. About 24 per cent of all recurrent costs and about 15 per cent of the total capital investment under the five-year plan will go to education. The government has accorded top priority to the expansion of secondary and higher education. This priority had been acted upon during the 1961-64 plan, and considerable progress was made in those years. Under the three-year plan the central government made available £2.6 million for capital development and £4.8 million for recurrent expenses. Under the five-year plan it has projected expenditures of £14.3 million for capital expenses and £22.4 million for recurrent expenses. The five-year plan thus provides almost three times the resources that were available under the earlier plan. As a result, the number of graduates from secondary Form 4 is expected to increase by 85 to 100 per cent, with a cumulative total of about 25,000 graduates for the five years of the plan.

Limiting Primary School Enrollment. The decision to accord top priority to secondary expansion makes it necessary to hold primary enrollment (the first eight grades) to about its present level in relation to this age group. About half of this age group is now enrolled, and an annual expansion of from 2,000 to 3,000 entrants to Standard 1 is planned to keep pace with population growth. No great progress toward the Addis Ababa goal of 100 per cent primary enrollment by 1980 will be made under the five-year plan, and it is highly unlikely that this goal will even be approached by 1980. But by reducing primary schooling from eight to seven years and by greatly decreasing the dropout rate during the primary years, the government expects to more than double the number of individuals completing primary school, from 20,000 in 1964 to 45,000 in 1969.

The government is concerned about the quality of primary schooling, recognizing that quality at the secondary level is adversely affected by unsatisfactory conditions in primary education. These conditions include serious overcrowding -- all Standard 1 and 2 and half of all Standard 3 and 4 students are on a double shift basis -- and poorly prepared primary teachers. Unfortunately, a large number of these teachers have had only a primary education themselves, supplemented by varying amounts of teacher training of questionable quality.

Current evidence indicates that the government is determined to adhere to the decision to hold the line on primary education, in spite of the obvious political pressures to expand. This decision was based upon estimated requirements of the planned economic expansion and recognition of more urgent claims on the country's limited supply of teachers. This decision was made in order to lay the foundation for achieving the 1980 target of self-sufficiency in manpower. Consequently, however, the many local communities that have constructed school buildings solely on their own initiative since 1961 have been warned that neither funds nor teachers will be made available to operate these schools.

### Secondary Education

Tanzania is projecting substantial increases in secondary education, even though the percentage of secondary school-age population will remain relatively low. Indeed, secondary enrollment will fall short of the Addis Ababa goal of 30 per cent. Although secondary enrollment will almost double by 1970, the percentage of the school-age group enrolled will rise only from 1.7 per cent to 3.2 per cent, owing to the already large size of the age group and to expected population growth. Even so, it is anticipated that by 1969 the present gap between the supply of secondary school graduates and demand will be substantially narrowed. Output is then expected to continue at levels sufficient to meet the anticipated demands in the following years through 1980.

Expansion Plans. The five-year plan provides for both the establishment of new secondary schools and expansion of existing schools. The government hopes to increase the number of schools offering sixth form instruction from 13 to 27 in five years and to increase enrollment in Higher School Certificate courses from 680 to 1,280.

Since 1962, secondary education in Tanzania has been free, a situation not common in other African countries. The capital development program for secondary schools will cost the government an estimated £2.6 million for the five-year plan period. A loan of £1.65 million from the International Development Association was allocated to cover projects started earlier under the three-year plan, so additional contributions are expected from voluntary agencies and external donors for the years ahead.

A Need for Better Preparation in Science and Mathematics.

Like other underdeveloped countries, Tanzania is faced with qualitative as well as quantitative deficiencies in secondary output. Although overall output has been increasing, there has been no corresponding increase in students prepared in mathematics and science who thus qualify university study in many of the urgently needed professions. In 1964, for example, the Higher School Certificate output in science was only 70 out of a total of 290. Arts graduates, on the other hand, have increased substantially. The government has recently endeavored to increase the number of science classes in secondary schools. As a result, by 1965 the ratio of science to arts students in the sixth form should be four to three, a major achievement, if realized.

Enrollment Statistics. Secondary school enrollments and outputs are shown in the following table:

TABLE 5  
OUTPUT OF SECONDARY SCHOOLS, 1955 - 1963;  
PROJECTED TO 1969<sup>a</sup>

Level and Examination Results	Actual Enrollment				Projected Enrollment				
	1955	1959	1963	1964	1965	1966	1967	1968	1969
Enrollment in Form 4	398	964	2,840	3,750	4,800	5,100	5,300	5,700	6,000
Candidates for School Certificate	385	957	2,938	3,800	4,800	5,100	5,300	5,700	6,000
Candidates Obtaining School Certificate Passes, Divisions I and II	212	400	880	1,260	1,580	1,680	1,750	1,880	2,000
Candidates Obtaining School Certificate Passes, Division I Only	70	99	251	380	480	510	530	570	600
Enrollment in Form 5	20	122	466	630	800	840	920	1,080	1,280
Enrollment in Form 6	8	74	258	466	630	800	840	920	1,080
Candidates for Higher School Certificates			258	466	630	800	840	920	1,080
Candidates for Higher School Certificates Obtaining Two or More Passes at Principal Level			176	290	400	500	530	580	680

<sup>a</sup>University of East Africa, "Entrance Levels and Degree Structure, Report, 1964", Annex C, Table 4.

### Post-Secondary Education

Tanzania offers opportunities for post-secondary education in several teacher training, technical, and vocational programs and at the University of East Africa.

As elsewhere in Africa, nondegree-granting post-secondary institutions have not yet acquired much prestige. All secondary school students aspire to enroll in sixth form courses and to go on to a university education. Teaching; technical and vocational occupations, moreover, are not highly regarded, and compensation patterns also favor university graduates over graduates of nondegree-granting institutions. Therefore, the latter enroll students who have not attained university admission, and many of these students hope to use this training to gain admission to the university later on.

Primary Teacher Training. Primary teacher training does not fall within the "post-secondary classification." It should be noted, however, that the government has a long-range program for upgrading and improving the quality of primary school teachers, including consolidation and improvement of the teacher training colleges, reducing the number of these colleges by about half to 10 or 12, training many more "Grade A" teachers (who receive two years of preparation following Form 4), revising the administration of subventions and grants-in-aid to local education authorities to promote improvement, and preparation of better teaching materials and other professional services for teachers. The new Teacher Education for East Africa project under an AID contract with Columbia University will assist in this area. AID also has proposed assistance for a correspondence and radio course in English as a second language for selected primary school teachers.

Secondary Teacher Training. The expansion of secondary school enrollment will require a substantial increase in secondary school teachers. As indicated in Table 1, of a total of 607 secondary school teachers at the graduate and diploma levels, 432 were expatriates and only 60 were Africans. A secondary school teaching force of at least 1,350 will be required by 1969 -- a total increase of 500, at least half of whom should be graduate teachers.

Whereas in the past secondary teachers were not trained within the country, the Ministry of Education now places

considerable emphasis upon increasing the number of graduate teachers but does not expect to terminate employment of expatriates for ten years. In the meantime, reliance must be placed upon such sources as Teachers for East Africa (American support for which will be discontinued after 1967), the Peace Corps, and British, Scandinavian, and other foreign assistance programs.

Changombe Teachers College. Two principal domestic sources to fill teaching needs have been planned. The first of these is the Changombe Teachers College in Dar es Salaam; construction of new facilities here were completed in 1965 with an AID development loan. Unfortunately this was planned without proper consideration of the relationship to the potentialities of teacher training at the new university college. AID also assisted in development of instruction in library science, health education, and audio-visual techniques through a contract with Kent State University, now terminated. The five-year plan calls for preparation at Changombe of Grade 3 teachers, qualified to teach Forms 1 to 4. These students will enter the college after Form 6 for a two-year program. The college's enrollment will increase from 40 in 1965 to about 70 in 1969.

The University College's Faculty of Education. A second and very promising source of graduate secondary teachers is the new Faculty of Education of University College, Dar es Salaam,<sup>1</sup> chaired by Professor Reginald Honeybone, an imaginative and creative teacher. In 1964 this faculty enrolled its first students in the arts, over 50 in number, in a new three-year program. Science will be added in 1965. This program, worked out in close cooperation with the Ministry of Education, places more emphasis upon general subject preparation than common in other African universities.

The Ministry of Education in cooperation with the Faculty of Education of University College, Dar es Salaam, at this writing is going forward with plans to establish an Institute of Education. This will provide close links between the ministry, the teacher training colleges, and University College, Dar es Salaam, to help coordinate and improve all teacher education at both the primary and secondary levels in Tanzania. Syllabus and curriculum reform will receive particular attention.

---

<sup>1</sup>Only a handful of Tanzanians are enrolled in education courses at Makerere College.

The Institute of Education will be under the leadership of Professor Honeybone, and will have the support of the Carnegie Corporation and British sources. AID will provide assistance to these efforts through the Teacher Education in East Africa program under the auspices of Teachers College, Columbia University.

#### Technical and Vocational Education

Dar es Salaam Technical College. This institution which enrolls students who have completed Form 4, opened in 1958. It offers a variety of full-time and part-time programs in commercial, engineering, and vocational fields, some of which lead to a diploma. Assistance has been provided by British and Canadian sources. Enrollments in 1964 amounted to 500 full-time students, of whom 170 were in three-year courses in civil, electrical, and mechanical engineering, and 1,600 in evening courses in commercial and practical arts. The college hopes to increase enrollments by 1966 to over 1,000 in commercial courses, 392 in engineering courses, and 528 in full-time vocational courses. Dormitory accommodations are limited to 130, but new construction is underway to provide housing for an additional 130.

AID has entered into a contract with California Polytechnic Institute to provide substantial assistance to the Dar es Salaam Technical College. The goal of this contract is to help the college train 500 diploma-level engineers by 1969 and graduate 180 students a year by 1971. The contract provides for support through teacher-advisers, participant training, and assistance in curriculum reform, which aims to relate the college more directly to the employment requirements of the private sector. All of this help is sorely needed, for the college has had difficulties becoming firmly established.

The termination of West German aid to Tanzania early in 1965 brought to an abrupt end plans for a business administration school that would have taken over some of the commercial courses offered by the Technical College.

Proposal for Another Technical Institution. The Five-Year Development Plan proposed the establishment of a second technical institution, without further explanation. A Reuters dispatch from Dar es Salaam dated August 30, 1964 reported that the Soviet Union, among other things, has agreed in principle to provide the United Republic of Tanganyika and Zanzibar with a technical school that could accommodate 1,000 students. No details of this offer were given, and it may be intended for Zanzibar. The experience of Tanzania with trade schools and with the Dar es Salaam Technical College suggests that it will be some time before an additional technical school becomes a viable operation.

The manpower adviser, Robert Thomas, reports that technical training has improved. Contrary to past experience, a large number of School Certificate graduates have begun to show interest in the three-year full-time courses at the Dar es Salaam Technical College: in December 1963 106 graduates enrolled in these courses although only 55 enrolled the previous year. Thomas expected that between 120 and 150 would enter in December 1964 and concluded that if enrollments continue at this level, Tanzania will be assured an adequate supply of technically trained personnel by the end of the plan period.

Morogoro Agricultural College. This is a diploma-level institution, developed with the help of the Rockefeller Foundation, AID (through a University of West Virginia contract), and other agencies. The college's curriculum is being upgraded and expanded to three years, and an annual enrollment of 60 students a year in the new program is planned, with a goal of 50 graduates a year by 1967.

### In-Service Training

The government of Tanzania also has planned measures to upgrade employed manpower. The following undertakings are worthy of note.

The Civil Service Training Center. This government facility for in-service training was established in attractive new quarters in Dar es Salaam with the help of the Ford Foundation. During 1963 it offered a total of 47 different courses, enrolling a total of 751 trainees. The principal programs of the center cover office management and procedures, accounting and clerical work, and special training for officers who are posted as instructors in ministerial training centers or as training officers elsewhere.

The Institute of Public Administration. This institute is affiliated with the University College, Dar es Salaam, and since its establishment in 1962 has held courses for 25 district magistrates, 30 area secretaries, and 10 senior officers. It is developing new teaching materials, and it arranges seminars and other opportunities for collaboration between the government and the academic community. AID has provided assistance in the form of teacher-advisers.

Other in-service programs. The Ministries of Agriculture, Health, Cooperative and Community Development, and Communications, Power and Works also operate in-service training programs. The Medical Training Center, for example, has offered a special course to upgrade medical assistants. A substantial number of employed individuals have undertaken a wide variety of courses on their own initiative. During its first nine months as a part of University College, the Extramural Department offered 28 courses the first semester to 600 students and 41 courses the second semester to more than 700 students; enrollment is now over 1,000. An additional 1,600 employed individuals attended evening classes at the Dar es Salaam Technical College. About half of these courses were in commercial subjects; the remainder were in a variety of fields, including city and guild courses and academic courses for the General Certificate of Education.

The amount of informal training conducted by industry is not recorded, although Robert Thomas concludes that it is extensive. During 1963 the Ministry of Labor trained 36 teachers who, in turn, conducted 70 different group courses in which 697 foremen or other supervisory personnel from both private firms and the government were instructed in improved training methods.

Tanzanians also participate in the various in-service training programs operated by the East Africa Common Service Organization and its subsidiary organizations. Overseas training programs sponsored by the British and other European governments and the AID participant training program constitute another form of in-service training.

### University Education

University-level education is offered at the new University College, Dar es Salaam and at the other constituent colleges of the University of East Africa.

University College, Dar es Salaam, was founded in 1961, and its first 14 students were admitted in October of that year; all were enrolled in the Faculty of Law. The college has now moved from temporary quarters in Dar es Salaam to handsome new buildings on an attractive site on Observation Hill eight miles to the north. AID assisted the new construction with a development loan. Courses of study are offered by the Faculties of Law, Arts, and Social Science.

Tanzanian students pursuing degrees in agriculture, architecture, engineering, medicine, and veterinary science may enroll in programs at Makerere University College in Kampala or at University College, Nairobi. At this writing, a Faculty of Science is being established at Dar es Salaam. The college, as indicated above, also includes a Department of Extramural Studies and Institutes of Public Administration and of Education.

Enrollments at the University of East Africa. The five-year plan, prepared after the University Development Plan, projected the following numbers of Tanzanians entering the University of East Africa:

<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
178	312	408	480	504	528

In a report prepared in 1964 by Professor E.F. Sheffield, who served as statistical consultant to the University of East Africa, it was reported that 111 Tanzanians were enrolled at the University of East Africa in 1963 and 209 in 1964. This suggests that future enrollments will exceed the projections made by the University Development Committee. It should be recalled that a substantial portion of the students recorded above are Asians rather than Africans.

Medical Training Center. The University of East Africa medical school at Makerere has been open to Tanzanians, but in the past Tanzania has not had enough qualified students to fill its quota of about 15 students a year. Medical training within the country has operated for some time at the sub-professional level, at the Medical Training Center in Dar es Salaam under the aegis of the Ministry of Health. The center was established during the colonial period to train medical assistants, and it was strengthened several years ago with the help of the Rockefeller Foundation and British grants. Aside from nationalistic motivations, there seem to be some very logical reasons why Dar should offer medical training.

In 1964 the Tanzanian government decided to enrich the course of study and to lengthen it to five years, the same as at Makerere. Admission requirements will be somewhat lower than at Makerere, but the government of Tanzania is expected to license the graduates as medical doctors for practice in the country. The first ten students in this program were enrolled in 1964, and ten new students are expected in 1965. The center hopes to increase its enrollment to as many as 30 or 40 a year. This capability, in part, will depend upon appointment of additional staff. On June 23, 1965 the Tanzanian Minister of Health told the National Assembly that his ministry hoped to bring the medical center into association with Dar es Salaam University College so that eventually the center could become the college's Faculty of Medicine.

#### Government Scholarships for Study in East Africa

Directing Secondary School Graduates into Priority Fields. Because manpower needs are great and the supply of Higher School Certificate students limited, the government has determined to utilize the supply fully in those occupations in which Tanzania is particularly short and for which the University of East Africa offers training. These occupations have been identified as follows: civil, mechanical, and electrical engineers; agricultural scientists and veterinarians; physicians; and graduate secondary school teachers -- 60 per cent in science and 40 per cent in arts.

The Directorate of Development and Planning and the Ministry of Education are in agreement that action should be taken to assure that the supply of Higher School Certificate (science) graduates is fully utilized. On the basis of data supplied by the Manpower Unit, the government is now apportioning students among the four broad occupational categories for which the University of East Africa has faculties and is supporting only those bursaries that follow this apportionment scheme: engineers, 24 per cent; physicians, 24 per cent; agricultural scientists, 28 per cent; and graduate secondary school teachers of science, 24 per cent. The Ministry of Education issued a directive based on this apportionment plan to guide actions of the university's board of admission.

Following the same procedure, the government also directed 50 per cent of the students entering the arts faculty of University College, Dar es Salaam in 1964 to enroll in the teacher preparation program. The practice of providing government bursaries to all Tanzanians entering the University of East Africa makes this procedure possible.

Bonding Scholarship Holders. All scholarship holders are now required to be bonded for five years in the public service upon completion of their studies, unless released by the government for other employment. It should be noted that the private sector is represented on the Standing Manpower Advisory Committee. Through this device, however, the government hopes to achieve better coordination of manpower planning and utilization. Since the private sector is represented on the Standing Manpower Advisory Committee, this procedure can direct students into both the private and the public sectors.

Other Means of Directing Students. The government also has instituted a system of informal "rationing" of secondary school-leavers, first among the various government agencies. This allocation enables every student who appears to be university material to continue in Form 5. The second priority is for technicians and teacher training. The remainder are allocated among various public bodies or given further vocational training. The wishes of the students are taken into account in making these assignments. The Manpower Planning Unit has published a guidebook explaining career opportunities for secondary school students. As yet no compulsory direction has been employed, and the system appears to be working by voluntary agreement among the various government bodies. The government has welcomed participation in this scheme by private employers, and steps have been taken to bring the private sector into the allocation process.

## **OVERSEAS STUDY**

Overseas study plays a significant role in the manpower situation in Tanzania, and the government places considerable emphasis upon the rational utilization of the opportunities that are provided overseas as well as in East Africa.

### A Registry of All Post-Secondary Students

Perhaps more than any other African country, Tanzania has established effective procedures for the administration of overseas study. The methods used by the Manpower Planning Unit and the Ministry of Education to allocate secondary school-leavers among East African post-secondary institutions are also used in administering scholarships for study abroad. The administering agency for both East Africa and overseas is the office of the registrar of students in the Ministry of Education. This office

handles bursary and scholarship awards and has records on all Tanzanians enrolled in post-secondary institutions. Each year it publishes a report listing post-secondary students studying outside of the country and at the University College, Dar es Salaam.

This list identifies each individual by name, race, sponsor, course of study, name and location of institution, year in which his course started, and year of expected return. This information is being recorded on data processing equipment, which will enable the government to analyse its records and to utilize graduates more effectively. In March 1964 the registrar of students, with the assistance of the USAID mission's training officer in Dar es Salaam, tabulated the number of students abroad during the current year by country, field of study, and expected date of return.

#### Administration of Overseas Scholarships

Tanzania has established regular procedures for handling the many offers of overseas scholarships. According to official explanations, all offers must be approved at the political level by a Cabinet Committee on Higher Education and Training, upon recommendation of a Civil Service Committee. Once cleared, they are administered by the registrar of students, who advertises for applicants. Qualified candidates are screened by a Scholarship Selection Board, on which have sat representatives of four ministries, the Central Establishment Division, and the University College, and four representatives of the public. The registrar of students serves as the board's secretary. Recently a subcommittee of this board, composed of three outside people, was established, and apparently this move has been welcomed by the ministerial members of the board as a device to remove them from political pressures in the assignment of awards. Final selections of students for the ASPAU and IIE programs are made from lists approved initially by the Scholarship Selection Board. Students who fail selection for the sixth form may apply for admission to the ASPAU program.

The government itself provides scholarships for overseas study, as well as bursaries for study at the University of East Africa. Scholarships also are provided by various Tanzanian voluntary agencies and corporations.

Matching Students with Manpower Needs. There is some evidence that the government of Tanzania intends to give closer attention to the selection and assignment of students overseas in relation to manpower needs. It also hopes to tighten up the machinery for matching returning students with employment opportunities. Missions were sent to the United States in 1963 and 1964 for this purpose. Apparently, these undertakings were planned hastily and the team members, as well as the students in the States, were inadequately prepared for the operation. Even so, the individuals who served on the missions concluded that the procedure was worthwhile and they recommended improvements to make subsequent ventures more effective.

At the present time, it is the declared policy of the government that overseas scholarships should be awarded only in those fields in which there is no opportunity for study in East Africa, at both the graduate and undergraduate levels.

#### Statistics on Tanzanians Studying Abroad

The tabulation of students abroad and at the University of East Africa prepared by the registrar of students early in 1964 listed a total of 2,054. Of these, 1,388 were African citizens of the country, 43 were non-African citizens (presumably Asians who have acquired citizenship), and 523 were non-citizens (again, presumably Asians). Excluding the 35 students in Tanzania, 105 in Kenya, and 202 in Uganda, there were a total of 1,712 abroad.

The level of study and the expected year of return of all students, including those in East Africa, are shown in the following table:

TABLE 6

STUDENTS IN UEA AND OVERSEAS BY LEVEL OF STUDY  
AND EXPECTED YEAR OF RETURN

Year of Return	Postgraduate	First Degree	Nondegree
1964	33	288	303
1965	15	295	204
1966	4	280	97
1967	4	139	120
1968	..	100	69
1969	..	21	25
1970	..	14	2
1971	..	2	..
Unknown	<u>        </u>	<u>        </u>	<u>        </u>
TOTAL	56	1,141	856

The registrar's tabulation also shows fields of study. It does not show the country, but this information could be compiled from the annual list of students mentioned above and presumably will be incorporated in the data processing system.

The number of students in each field of study in 1964, including those in Kenya and Uganda, is shown below:

TABLE 7

STUDENTS IN UEA AND OVERSEAS  
BY FIELD OF STUDY, 1963-64

Field	No. of Students
Accountancy	49
Administration (public & general)	17
Architecture	20
Agriculture	121

TABLE 7 - Continued

STUDENTS IN UEA AND OVERSEAS  
BY FIELD OF STUDY, 1963-64

Field	No. of Students
Arts (liberal)	190
Art (commercial & fine)	8
Chemistry	19
Commercial & Business Administration	56
Cooperatives	26
Dentistry	10
Domestic Science	29
Economics	156
Education	135
Engineering	356
Forestry	17
Geology	15
Journalism	6
Law	74
Medicine	189
Medical Sciences	27
Mining	14
Nursing	185
Pharmacy	33
Religious Studies	34
Science (degree programs)	93
Social Studies	38
Surveying	16
Trade Unionism	20
Trades	17
Veterinary Science	30
Miscellaneous	29
<b>TOTAL</b>	<b>2,054</b>

Of this total, 1,100 were university degree candidates.

The number of students in each country is shown in the following table:

TABLE 8  
STUDENTS IN UEA AND OVERSEAS  
BY COUNTRY, 1963-64

Country	No. of Students
Algeria	9
Australia	38
Austria	9
Belgium	1
Bulgaria	3
Canada	3
China	..
Congo	5
Cuba	..
Czechoslovakia	15
Denmark	9
Eire	33
Ethiopia	8
France	3
Finland	1
East Germany	18
West Germany	91
Ghana	3
Guinea	1
Hong Kong	..
Hungary	1
India	41
Israel	6
Italy	17
Japan	..
Jordan	1
Liberia	..
Netherlands	44
New Zealand	24
Nigeria	11
Norway	3
Pakistan	15

TABLE 8 - Continued  
STUDENTS IN UEA AND OVERSEAS  
BY COUNTRY, 1963-64

Country	No. of Students
Phillipines	1
Poland	12
Romania	1
Sierra Leone	1
Sudan	..
Switzerland	8
Sweden	9
United Kingdom	771
United States	281
U.S.S.R.	150
United Arab Republic	14
Yugoslavia	36
SUBTOTAL	1,712
East Africa:	
Tanzania	35
Kenya	105
Uganda	202
SUBTOTAL	342
TOTAL	2,054

These figures do not show which individuals are studying overseas under arrangements such as the USAID participant training program which serve to upgrade employed manpower. When these individuals are enrolled in degree or diploma courses, they are included in the figures for students overseas.

Students in the United States. According to the IIE Open Doors Reports, the total number of Tanganyikan and Zanzibari students at colleges and universities in the United States during 1963-64 was 282; during 1964-65 the number rose to 305. During 1964-65, most students were enrolled in the social sciences (79), and then in physical and natural sciences (69), the humanities (43), agriculture (36),

engineering (24), education (20), business administration (19) and the medical sciences (14).

The ASPAU program has sponsored a total of 81 Tanganyikans and 14 Zanzibaris since its inception. During 1963-64, the AFGRAD program sponsored one Tanganyikan. Four Tanzanians studied in the United States under AFGRAD during 1964-65.

Through FY 1964, 294 Tanganyikans had been sponsored by the AID participant training program.

Students in the United Kingdom. The total number of students from Tanganyika and Zanzibar enrolled in post-secondary and university courses in the United Kingdom during the 1963-64 academic year was 1,113 -- according to British sources. Of these, 885 were listed as Tanganyikans -- 114 more than were recorded by the Tanganyikan Ministry of Education for the same period. Approximately 18 per cent (207) of the students from Tanganyika and Zanzibar in the United Kingdom in 1963-64 were at the university level and 82 per cent (902) were at the post-secondary, non-university level.

Students in the Soviet Union and Eastern Europe. Since 1963-1964, the number of Tanzanians going to the Soviet Union and Eastern European countries probably has increased, but it has been impossible to secure accurate additional information on this aspect of overseas study.

## MANPOWER BALANCE SHEET

### Estimates of the Number of Tanzanian Graduates During the Plan Period

The recent manpower survey of the Directorate of Development and Planning includes manpower supply and demand calculations. The estimates of supply are based on the assumption that the goals of the five-year plan will be carried out. Specifically, the survey assumes that the planned secondary school Form 4 and Form 6 outputs will be achieved, that the 4:3 ratio of science to arts Higher School Certificate graduates will likewise be achieved in 1966-67, and that the University of East Africa will be able to provide places for the Tanzanians

preparing for those professions required by Tanzania. It also assumes that for the next five years the government will continue to provide bursaries to the university and foreign institutions only in accordance with the country's needs for specific skills and will continue to bond scholarship holders.

The results of the manpower unit's calculations are shown in the following tables:

TABLE 9

SUPPLY ESTIMATES, UNIVERSITY OF EAST AFRICA

A. Estimated Enrollments<sup>a</sup>

Course of Study	1964-65	1965-66 <sup>b</sup>	1966-67
Civil Engineering	13	20	55
Mechanical Engineering	2	20	7
Electrical Engineering	1	15	5
Medicine	18	25	65
Agriculture	8	20	54
Veterinary Science	4	10	21
Education:			
Science Teachers	8	23	65
Arts Teachers	56	89	103
Other Liberal Arts	50	89	103

<sup>a</sup>1963-64 enrollments are omitted because the controlled bursaries scheme started one year later.

<sup>b</sup>Request for places made in November 1964.

TABLE 9 -- Continued  
 SUPPLY ESTIMATES, UNIVERSITY OF EAST AFRICA  
 B. Estimated Number of Graduates

Course of Study	1963-1964	1964-1965	1965-1966	1966-1967 <sup>a</sup>	1967-1968	1968-1969	Gross Five-Year Total	Net Total Less 1% Per Annum Wastage
Civil Engineering	3	2	7	13	20	55	97	94
Mechanical Engineering	..	1	4	2	20	7	34	33
Electrical Engineering	1	1	2	1	15	5	24	23
Medicine	8	7	6	18	25	18	74	72
Agriculture	3	3	4	8	20	54	89	86
Veterinary Science	3	3	2	4	10	10	29	39
Education:								
Science Teachers	1	0	1	8	23	65	97	94
Arts Teachers	5	6	6	56	89	103	260	252
Other Liberal Arts	..	..	..	50	89	103	..	..

<sup>a</sup>First graduates under the controlled bursary scheme.

In these calculations, plan years and school years coincide. The achievement of these outputs depends upon the success of plans for secondary school expansion and development of instruction in science and mathematics. It depends, moreover, upon rigid assignment of all Higher School Certificate-holders in science to the professional faculties that require this preparation and in proportions dictated by Tanzania's development needs. At least 50 per cent of the bursaries in the arts will be used only for the graduate secondary teacher degree. The manpower survey also assumes that if the University of East Africa is unable to provide all the places Tanzania requires for its Higher School Certificate-holders in any of the faculties, then overseas scholarships will be provided by the government or secured from donors for the same courses.

The figures in Table 10, showing Tanzanians presently enrolled in university programs, reveal the importance of study overseas in the production of the country's high-level manpower.

TABLE 10  
DEGREE COURSE ENROLLMENTS:  
UNIVERSITY OF EAST AFRICA AND OVERSEAS

Course	University of East Africa	Students Overseas	Average No. of Graduates, Both Sources, Per Year	Estimated Output in 5 Years, (5% Wastage & Nonreturnees)
Accountancy	..	41	13	55
Administration (Public)	..	6	2	8
Architecture	7	10	3	13
Agriculture	25	9	3	35
Liberal Arts (B.A.)	103	87	29	123
Chemistry	..	10	3	13
Commerce & Business Administration	..	21	7	30
Dentistry (5 years)	..	4	1	4
Economics	..	69	23	98
Education (divide by 4 years degree diploma)	18	2	7	3
Chemical Engineering	..	8	2	8
Civil Engineering	22	45	15	64
Electrical Engineering	10	27	9	38
Mechanical Engineering	6	15	5	21
Forestry	..	12	4	17

TABLE 10 -- Continued

DEGREE COURSE, ENROLLMENTS:  
UNIVERSITY OF EAST AFRICAN AND OVERSEAS

Course	University of East Africa	Students Overseas	Average No. of Graduates, Both Sources, Per Year	Estimated Output in 5 Years (5% Wastage & Nonreturnees)
Geology	..	12	4	17
Law	35	32	8	32
Librarianship	..	1	3	1
Medicine (5 years)	39	67	13	49
Mining Engineering	..	10	3	13
Pharmacy	..	28	7	30
Science (General, B.Sc.)	33	47	15	64
Social Studies	4	1	3	1
Veterinary Science	9	20	6	15
Zoology/Anthropology	..	6	2	8
TOTAL	311	590	..	760

Note that enrollment overseas is almost double the enrollment at the University of East Africa and that in a number of fields no Tanzanians are enrolled in the University of East Africa -- accountancy, public administration, business administration, chemistry, chemical engineering, dentistry, economics, forestry, geology, mining engineering, and pharmacy. However, the number of Tanzanians enrolled in at least one field presents a problem: the manpower survey states that the University of East Africa probably will not be able to accommodate all the agriculture students listed in Table 10 and that therefore the Tanzanian government will provide overseas scholarships in this field to meet the needs.

Table 11 shows the estimated number of graduates of local and foreign institutions for the plan period.

TABLE 11

ESTIMATED TOTAL TANZANIAN GRADUATES:  
UNIVERSITY OF EAST AFRICA AND OVERSEAS,  
1964-1969

Occupation	University of East Africa Estimated Outputs	Overseas Outputs	Total Estimated Supply for 5 Plan Years
Civil Engineering	94	64	158)
Mechanical Engineering	33	21	54)
Electrical Engineering	23	38	61)
Medicine	72	49	121)
Agriculture (B.Sc.)	86	13	121)
Veterinary Science	39	15	44)
Graduate Teachers (Science)	94	..	94)
Graduate Teachers (Arts)	252	3	255
B.A. (excluding all those under "Graduate Teachers, Arts" above)	312	123	435(An outside figure)

Science-based total = 653

Secondary School Supply in Relation to Demand

Achievement of these university outputs, both in East Africa and overseas, will depend chiefly upon realization of the five-year plan goal of 25,000 Form 4 graduates by 1968-69. As already indicated, the government has instituted a program to direct these graduates to appropriate programs of continued training. First claim on the supply will be given to formal educational and training institutions which prepare for Class A and B occupations, as shown in the following table:

TABLE 12

SECONDARY SCHOOL OUTPUTS  
REQUIRED DURING FIVE-YEAR PLAN PERIOD  
FOR PRINCIPAL AREAS OF FURTHER EDUCATION AND TRAINING

Training Program	Number
1. Grade A Teachers Training	4,860
2. To the University (Form 5)	4,820
3. Engineering Technician Diploma Courses	700
4. Agriculture (field officer level)	285
5. Agriculture (assistant field officer level)	830
6. Nurses Training (Ex Form 4 beginning in 1967 with 60 per year)	180
7. Ministry of Health Medical School and Health Inspector Pre-Service Training	<u>120</u>
<b>TOTAL</b>	<b>: <u>12,000</u> (rounded)</b>

When the total requirement of 12,000 is deducted from the estimated Form 4 output of 25,000, an estimated 13,000 are left available for the direct requirements of the labor market (Class C occupations). While this figure is short of the estimated 16,900 called for in this category, the manpower survey concludes that the deficiency will be covered by "make-do" schemes worked out by employers.

Demand-Supply in Class A

When projected against estimated requirements, the outputs indicated above show that Tanzania is making substantial progress toward achievement of its manpower goals. Actually, the manpower survey finds the situation more favorable than had been estimated when the five-year plan was prepared. However, this is in part due to a lower estimate of requirements in the Class A category -- a reduction from 3,200 to 2,905. Whereas the plan foresaw a shortfall of about 1,500, the new survey estimates the shortfall at 941, or about 38 per cent less. The survey's demand and supply calculations, subdivided into three principal groups, are as follows:

TABLE 13

CLASS A DEMAND-SUPPLY

Group	Five-Year Demand	Estimated Supply	Shortfall
Science/Math Based Occupations (engineers, scientists, doctors, etc.)	1,437	843	-594
Other Occupations Requiring Special Training (graduate teachers, social workers, lawyers, etc.)	943	599	-344
Occupations open to Entrants with Nonspecialized Degrees (administration, government, business executives, etc.)	<u>525</u>	<u>522</u>	approxi- mately in balance
TOTAL	<u>2,905</u>	<u>1,964</u>	<u>-941</u>

The occupations requiring preparation in science and mathematics show the largest shortfall, while the occupations open to general arts graduates will be filled. The graduate teacher supply is particularly encouraging. Although in recent years there were only four to six new graduate teachers a year, it is now expected that a total of about 350 will be produced by the end of the five-year plan period, an average of 70 per year. Similarly, although very few Tanzanians were trained as engineers in the past, a total of 273 will be produced, reducing the gap to only 70.

The following table, which can be compared with the estimates of manpower demand projected in Table 2, page 68 indicates the shortfalls and surpluses by occupations.

TABLE 14

CLASS A MANPOWER: TOTAL  
REQUIREMENTS AND ESTIMATED SUPPLY

Occupation	Total Requirements 1968-1969	Estimated Supply to 1968-1969	Shortfalls or Surplus
Architects (buildings)	19	20	+ 1
Town Planners	16	0	- 16
Quantity Surveyors	10	5	- 5
Civil Engineers (general)	128	273	- 60 <sup>a</sup>
Electrical Engineers (general)	83		
Mechanical Engineers (general)	122		
Telecommunication Engineers	10		
Chemical Engineers (general)	5		
Metallurgists (extractive)	1	0	- 1
Mining Engineers (general)	2	6	+ 4
Industrial Efficiency Engineers	1	0	- 1
Surveyors (general)	47	15	- 32
Chemists (general)	28	13	- 15
Geologists	17	17	0

TABLE 14 -- Continued

CLASS A MANPOWER: TOTAL  
REQUIREMENTS AND ESTIMATED SUPPLY

Occupation	Total Requirements 1968-1969	Estimated Supply to 1968-1969	Shortfalls or Surplus
Veterinarians (general)	44	44	0
Biologists (general)	4	0	- 4
Zoologists	12	8	- 4
Biologists & Animal Scientists	3	0	- 3
Agronomists (field & research)	148	121	- 27
Horticulturists	2	0	- 2
Silviculturists	38	17	- 21
Physicians (general practice)	325	121 (Univ.) 45 (Min. of Health)	-159
Pathologists (medical)	4	0	- 4
Dentists	25	4	- 21
Pharmacists	41	30	- 11
Dieticians	1	0	- 1
University Teachers (arts)	52	I.N.A. <sup>b</sup>	- 52
University Teachers (sciences)	27	I.N.A.	- 27
University Teachers (other)	9	I.N.A.	- 9
Teachers (secondary school graduates)	700	255 (arts) 94 (science)	-351
Teachers (secondary school diplomas)	115	200	+ 85 <sup>d</sup>
Teachers (Dar es Salaam Technical College)	48	I.N.A.	I.N.A.
Lawyers (general)	82	82	0
Authors, Journalists & Related Writers	47	44	- 3 <sup>e</sup>
Accountants (profes- sional)	117	45	- 72
Social Workers (general)	12		
Librarians	10		

c

TABLE 14 -- Continued

CLASS A MANPOWER: TOTAL  
REQUIREMENTS AND ESTIMATED SUPPLY

Occupation	Total Requirements 1968-1969	Estimated Supply to 1968-1969	Shortfalls or Surplus
Economists	11	11 <sup>f</sup>	
Statisticians	14	2	- 12
Personnel Specialists (industrial)	41	3	- 38
Interpreters	6		
Professional, Technical & Related Workers	0	1	+ 1
Administrators (govern- ment)	322	322	0 <sup>g</sup>
Directors, Managers, & Working Proprietors	156	156	0 <sup>h</sup>
<b>TOTAL</b>	<b>2,905</b>	<b>1,964</b>	<b>-941</b>

<sup>a</sup>All three branches of engineering call for Higher School Certificates in science; the first university year is common to all. A total of 273 is the maximum output foreseen, and it will be allocated among the three specializations as equitably as possible.

<sup>b</sup>Information not available.

<sup>c</sup>University College, Dar es Salaam only.

<sup>d</sup>This surplus will be used to fill graduate posts, thus reducing the shortfall of 351 to 266.

<sup>e</sup>Allocated from B.A. output.

<sup>f</sup>There are an estimated 98 future graduates with economics degrees. Relatively few individuals work in posts specifically labelled "economist." Most individuals with this training work for the government, and for this reason the 87 other economics graduates have been included under "Administrators (government)."

<sup>g</sup>Includes all B.A. output not included in any occupations above as well as 87 economics graduates.

The total requirements for directors, managers, and working proprietors is estimated at 625. Of this total, an estimated 25 per cent will call for a university degree and therefore have been included in Class A. The remaining 469 are in Class C.

Demand-Supply in Class B

The manpower survey is optimistic about the supply of Class B personnel. It concludes that if assured the necessary supply of secondary school output, the technical, vocational and in-service training programs described earlier can be expanded to meet most or all requirements. For this reason, the survey declares that the demand-supply relationships in Class B are more "manageable" than those in Classes A and C. It calculates that the overall shortfall is only 13 per cent of the total requirements, except in a few technical occupations, such as medical, x-ray, and physiotherapy technicians.

TABLE 15

CLASS B MANPOWER: TOTAL  
REQUIREMENTS AND ESTIMATED SUPPLY

Occupation	Total Requirements 1968-1969	Estimated Supply to 1968-1969	Shortfalls or Surplus
Nurses (professional: senior & supervisory)	245	245	0
Nurses (staff & general duty)	870	870	0
Physiotherapists	3	0	- 3
X-Ray Operators (medical)	22	0	- 22
Medical Technicians (other)	194	80	-114
Teachers (primary school)	2,710	2,650	- 60
Radio Announcers	24	I.N.A. <sup>a</sup>	I.N.A.
Draftsmen (general)	63	45	- 18
Technicians (engineering)	735	440	-295
Technicians (research lab.)	52	13	- 39
Technicians (industrial lab.)	42	14	- 28
Science & Engineering & Technical Lab. Assistants	24	0	- 24

TABLE 15 -- Continued

CLASS B MANPOWER: TOTAL  
REQUIREMENTS AND ESTIMATED SUPPLY

Occupation	Total Requirements 1968-1969	Estimated Supply to 1968-1969	Shortfalls or Surplus
Agricultural Technicians (field officer)	340	244	- 96 <sup>b</sup>
Agricultural Technicians (assistant field officer)	900	755	-145
Accountants (noncer- tified)	269	I.N.A.	I.N.A. <sup>c</sup>
Engineer Officers (ship)	13	2	- 11
Aircraft Pilots, Naviga- tors, & Flight Engineers	4	0	- 4
Radio Communication Operators	43	43	0
<b>TOTAL</b>	<b>6,562</b>	<b>5,401</b>	<b>-866</b>

<sup>a</sup>Information not available.

<sup>b</sup>Only Grade A teachers are included (secondary schooling plus 2 years of teacher training).

<sup>c</sup>Supply mainly generated by on-the-job training, a combination of promotion and short courses or self-study.

These calculations suggest that Tanzania is in a more favorable position with respect to Class B manpower than most other African countries. However, the situation is deceptive; because of its very low level of development, Tanzania's Class B needs are considerably less than those of more developed countries, such as Nigeria and Tunisia.

### Conclusions of Manpower Survey

The manpower survey reaches a favorable conclusion with respect to Tanzania's manpower situation. It estimates that if the various educational programs projected in the Five-Year Development Plan are carried out, the country will in fact achieve the goal of self-sufficiency in Classes A and B by 1980. It also concludes that while problems exist with respect to Class C, these can be resolved through on-the-job training for skilled manual workers, provided by industry.

These conclusions clearly rest upon achievement of the ambitious goals for educational development that have been projected by the government of Tanzania. These goals appear to be reasonable and realistic. Whether or not they will be achieved will depend not so much upon success in the educational sector itself as upon results in the so-called productive sectors of national development, which can generate progress in education.

107

**UGANDA**

**Report Number 3C**

## INTRODUCTION

### The Land, the People, and the Economy

Uganda, which is roughly the size of Great Britain, lies entirely inland. Its capital, Kampala, is approximately 900 miles from the African coast. Although the country is landlocked, its membership in the East African economic union has provided access to the seaports of Kenya and Tanzania. Uganda has also been a member of the British Commonwealth since it became independent in 1962.

The population of Uganda is now thought to be approaching eight million, over 98 per cent of whom are Africans. In 1962 there were 80,000 persons of Asian descent, 11,000 Europeans, and 2,600 Arabs. As is true of other African countries, the majority of Uganda's population is engaged in subsistence agriculture. Approximately 16,400 of its 94,000 square miles are under water, and therefore almost one-fifth of its land is unproductive. However, agricultural production is extensive on the country's arable soil which is favored by a comfortable climate, an average altitude of 4,000 feet, and an average rainfall of 40 to 50 inches a year.

Uganda is the largest coffee producer in the Commonwealth, and 80 per cent of its export earnings come from its coffee and cotton crops. However, these earnings fluctuate with world prices and, consequently, directly affect the national economy. During the period 1957-62, when coffee and cotton prices fell, the country experienced a slowdown in growth, and the proportion of the total population employed in salaried jobs declined. In 1963 a rise in coffee prices and in the volume of coffee and cotton exported was responsible for a growth in gross domestic product of nine per cent. Nonetheless, the rate of employment growth continued to lag behind the rate of population growth, and total employment fell by four per cent in 1963. In 1964 Uganda had a favorable trade balance of \$89.6 million and an estimated per capita income of \$74.00

## NATIONAL AND HUMAN RESOURCE DEVELOPMENT

### The Five-Year Development Plan

Uganda issued its first Five-Year Development Plan, covering the period 1962-1966, following the recommendations of the 1960 World Bank survey. The five-year plan called for a total investment of \$200 million in the public sector and \$60 million in the private sector. Yet an analysis of the government's budgets from 1961 to 1964 reveals that expenditures ran far short of the planned targets for those years. In FY 1963, for example, expenditures were \$5.1 million less than planned, and in FY 1964 they were \$11.1 million less. The money for these initial investments was allocated, but there was a lag between planned and actual investment, chiefly due to a severe shortage of the qualified personnel needed to plan and implement development activities.

Of the total \$260 million investment called for by the plan, local sources were expected to contribute \$82 million; the United Kingdom, \$26 million; the IBRD, \$6 million; and the United States, \$3 million. Although the remaining funds are still to be obtained, they alone are not crucial to the plan, since Uganda's development rate has proved to be more dependent on the availability of qualified personnel than on the availability of funds.

Despite this critical lack of manpower, a World Bank mission evaluated the plan's progress in 1964 and recommended substantial increases in the planned investment, particularly in agriculture and other productive sectors. In the light of recent experience, it is unlikely that Uganda will be able to implement the so-called expanded plan over the next two years. In the meantime the Central Planning Bureau of the Ministry of Planning and Community Development is coordinating efforts by various government departments and economists at Makerere University College to prepare the country's next five-year plan.

### Manpower Assessments and Plans

As indicated above, Uganda's development has been seriously impeded by a shortage of trained manpower. Despite frequent declarations by government officials that proper planning requires a comprehensive manpower survey, only limited surveys have been completed.

Early Manpower Surveys. Robert L. Thomas prepared a manpower survey of Uganda for the Ford Foundation in 1959,<sup>1</sup> but this study received little attention, apparently because it reflected unfavorably on British colonial policy, which failed to prepare an adequate number of Ugandans for high-level responsibilities. In 1962 Guy Hunter and Frederick Harbison made an assessment of manpower in East Africa for the University of East Africa, which subsequently was incorporated in Hunter's book, Education for a Developing Region: A Study in East Africa.<sup>2</sup> These two manpower surveys were useful, but they now are out of date since they do not cover later development plans.

Present Efforts by the Ugandan Government. At the present time further efforts are being made by several Ugandan agencies to compile a comprehensive manpower survey. The Establishments Branch of the Prime Minister's office has already assembled and tabulated data on the Civil Service -- by far the country's largest single employer -- and issues the Quarterly Establishment Return, a quarterly report on present employment, broken down by classifications. For more than a year the Central Planning Bureau of the Ministry of Planning and Community Development has been preparing a manpower survey that covers the private sector as well as the government and quasi-governmental agencies. This survey was slowed down by a shortage of competent staff and subsequent personnel changes, but as of February 1965 it seemed to be just a few months away from completion.

Studies from the East African Institute of Social Research. A number of analytical studies of the manpower situation in East Africa have been made by faculty members at Makerere University College, who work within the East African Institute of Social Research. With support from the Ford and Rockefeller Foundations, the institute has produced studies of specific sectors of the economy and is engaged in an Economic Development Research Project in which faculty members prepare background papers on aspects of national development. These

---

<sup>1</sup>"Report on the Survey of Manpower and Training; Uganda Protectorate, British East Africa, July-October, 1959," prepared by the Ford Foundation, Robert L. Thomas, consultant, in cooperation with the Ugandan Ministry of Education and Labor.

<sup>2</sup>London: George Allen and Unwin, 1963.

studies suggest policy guidelines and alternative courses of action for government officials, and the college's exonomists consult frequently with government officials. It is expected that the efforts underway in both the government and Makerere will be utilized in the formulation of Uganda's next development plan.

#### Manpower Supply and Demand

Since no manpower survey in any way comparable to those for Kenya and Tanzania is available for Uganda, it is not possible to present detailed calculations of employment and requirements. The general picture that emerges from such evidence as is available is that Uganda can absorb all levels of manpower in all fields for the next ten or fifteen years. This fact has led some observers to conclude that manpower planning is useless, since Uganda is short in all categories. The very scope of Uganda's needs, however, underlines the importance of determining relative orders of magnitude and of priorities.

Such priorities can be established on the basis of the manpower picture drawn from available studies. Taken together, these studies indicate that: (1) the greatest quantitative need is for intermediate-level rather than high-level manpower, and (2) the greatest qualitative need is for personnel with mathematical, scientific, and technical training. If these two needs are combined, then the most urgent manpower requirements are for secondary teachers, government administrators, and persons with technical or agricultural training. The problem of meeting these priorities is compounded by the fact that most of the nation's high-level manpower is of European or Asian origin and if Africanization is to proceed fairly rapidly, as the government wishes, the educational system must produce Ugandans to replace existing manpower as well as to expand the labor force.

Employment Statistics. As of September 30, 1964, the Quarterly Establishment Return listed a total of 22,000 established positions in the public service, including 4,563 vacancies. Ugandan citizens held 68 per cent of the 22,000 established positions, non-Ugandan citizens (Europeans, Asians, and other Africans) held 11 per cent, and 21 per cent of these positions were not filled.

Of the established positions, 1,134 were at the administrative and professional level, and 858 positions at this level

were actually filled: 466 by Ugandan citizens and the remainder by citizens of other countries -- 326 by Europeans, 63 by Asians, and 3 by other Africans. Of the 4,572 technical and executive posts, 3,180 were filled as follows: 1,786 by Ugandan citizens and 1,394 by other citizens -- 854 by Europeans, 507 by Asians, and 33 by Africans.

At the lower level a total of 13,345 out of 16,238 clerical, sub-technical, nursing, and police posts were filled: 12,743 by Ugandan citizens, 352 by other Africans, 237 by Asians, and 13 by Europeans. Thus, although Ugandan citizens held 68 per cent of the established positions, the majority of these positions were at the lowest level. Although it is an extremely useful document, the quarterly survey does not estimate future requirements and seems to appear irregularly; consequently, Ugandanization policies and in-service training programs proceed on an ad hoc basis rather than being planned on the basis of manpower data.

Other estimates indicate that Uganda has roughly 3,000 high-level persons, of whom 800 are in the private sector, and 7,300 intermediate-level persons, of whom 2,300 are in the private sector.

Estimated Demands for High- and Middle-Level Manpower. Several manpower studies of a limited nature have been conducted by faculty members at Makerere. D.G.R. Belshaw estimated that the demand for graduate and postgraduate agriculturalists in East Africa would be well over 500 between 1963 and 1966 and that only 25 per cent of these positions could be filled by local personnel. Similarly, a study on the needs for medical manpower indicated that even with greatly expanded training at home and overseas, East Africa would probably not achieve a doctor to population ratio of 1:10,000 by 1980.

Although their calculations were admittedly very rough, Hunter and Harbison made the following estimates of Uganda's needs for high-level manpower (shown below as Category I) and intermediate-level manpower (Category II) for the period 1961-66.

TABLE 1

	Stock	Wastage 1961-66	Growth		Requirement	
			(a) 2% Per Annum	(b) 3% Per Annum	(a)	(b)
Category I	4,150	1,660	830	1,250	2,430	2,850
Category II	10,600	3,000	3,180	4,800	6,180	7,800
				TOTAL	8,610	10,650

Their projections of further requirements for 1966-71 were:

(a) 2% Per Annum Growth      (b) 4.5% Per Annum Growth

Category I	2,000	3,500
Category II	6,900	13,500

Studies Prepared under the Economic Development Research Project. Perhaps the most scholarly approach to the problem of projecting manpower requirements has been the series of studies conducted under the Economic Development Research Project. One paper, by Clark and Van Arkadie, examined the difficulties of increasing productivity and employment.<sup>1</sup>

A more significant paper for the purposes of this study was that by Rado and Jolly, "The Demand for Manpower -- An East African Case Study,"<sup>2</sup> which examined the problems inherent in manpower planning. The study, which was undertaken at the request of the Uganda Planning Secretariat, compares the relative merits of the models developed by Mr. Harbison and Mr. Tinbergen, a professor at the Netherlands Economics Institute. Questioning Harbison's (and Hunter's) rule of

<sup>1</sup>East African Institute of Social Research, "Development Goals for the Uganda Economy in 1981," prepared by P. Clark and B. Van Arkadie (Kampala, Uganda: July 29, 1964). (EDRP, Paper No. 42.)

<sup>2</sup>EDRP, Paper No. 4 (revised), December 15, 1964.

thumb that there is a direct relationship between gross domestic product and high-level manpower, Rado and Jolly applied Tinbergen's model to Uganda and came up with rather startling conclusions.

Rado and Jolly projected Uganda's aggregate needs for high-level manpower to 1981 without breaking them down by fields or estimating the needs at the intermediate level. They concluded that:

1. In order to achieve the goal adopted by the Uganda Planning Commission of an 8 per cent rate of growth of GDP, the number of university graduates must increase by about 9.5 per cent per year, rising from 4,000 in 1962 to over 22,000 in 1981.

2. If full Ugandanization is to be achieved, the number of local graduates must be increased 20 times by 1981.

3. To produce such a supply of graduates, the university would have to expand its intake at the rate of 27 per cent a year from 1965 onwards.

The financial burdens of these targets would be enormous. The recurrent costs alone of such expansion will require far greater investment in secondary and university education and, consequently, cutbacks in other needy sectors. In order even to attempt to achieve such high rates of growth, Uganda must attract or retain large numbers of non-Africans because the country will continue to suffer acute shortages of high-level manpower for some time. Thus, although the policy will be politically difficult to implement, Uganda will need to recruit expatriates in large numbers and provide for the Asian community a continued share in the nation's economic life.

The Central Planning Bureau's Survey. The manpower survey being conducted by the Central Planning Bureau is also based on the Tinbergen model but assumes a slower rate of growth than Rado and Jolly. At this writing, the returns of the bureau's survey are being tabulated, and it is estimated that the projections of the needs of the various sectors will be completed within several months. N. Bennett, an economist assigned to the project, is assuming that the needs for high-level manpower will increase at one per cent per year, the

same rate as GNP.<sup>1</sup> Although the ratio of intermediate- to senior-level personnel is two or three to one at present, Bennett expressed the hope that this would increase to a four to one ratio, on the assumption that a larger proportion of senior-level jobs can be performed by intermediate-level personnel at far less expense. Thus, it is clear that in order to move towards an intermediate-level to high-level manpower ratio of 4:1, the highest priority must be assigned to the development of secondary and post-secondary nonuniversity institutions.

## EDUCATIONAL CAPABILITIES

Due to past efforts of Christian missionaries and recent efforts of its own government, Uganda has developed an educational system which compares favorably with its neighbors, particularly at the primary level. In 1963 about 14 per cent of the national budget was allocated for education, and there are indications that this percentage will rise. Pending the completion of a comprehensive manpower survey, educational planners have had to make their own projections of increased enrollments at all levels. The Ministry of Education is presently engaged in a revision and detailed cost accounting of long-term plans as part of an application for a World Bank loan and also as part of the next five-year development plan. The enrollment targets cited below reflect the ministry's goals as of January 1965 and should be considered tentative, pending government approval.

### The Reform of Primary Education

Although there is some political pressure to push towards universal primary education by 1970, it now appears that the government has realistically assessed the financial implications of such a move and that expansion will proceed more slowly. Following the example set by Kenya, Uganda is combining the two-year junior secondary course with its six-year primary course. Educational planners believe this will insure better use of facilities and improve the quality of instruction

---

<sup>1</sup>Note that the Rado and Jolly calculations (page 114) were based on the GDP growth rate.

in the primary course, which will now be seven instead of six years. As the following table indicates, this will be accomplished by 1967.

TABLE 2  
PLANNED ENROLLMENTS OF PRIMARY SCHOOLS  
1964-1970

Year	Intake of Primary 1	Output of Primary 6	Intake of Jr. Secondary 1 & Primary 7	Output of Jr. Secondary 2 & Primary 7	Enrollment Numerical	% of Age Group
1964	91,513	61,432	23,725	19,390	526,000	42%
1965	108,500	64,924	25,880	23,725	540,000	42%
1966	111,600	...	31,880	57,760	564,000	43%
1967	114,700	...	...	75,000	617,000	50%
1968	117,800	...	...	78,000	643,000	51%
1969	120,000	...	...	81,000	664,000	51%
1970	127,000	...	...	84,000	713,000	54%

Since the actual age of primary school children ranges from 5 to 15 and older, the percentage of the "official" age group (6-12 years old) now enrolled would be nearer 30 per cent rather than the 42 per cent listed above.

The Planned Expansion of Secondary Schools

The critical bottleneck in Ugandan education occurs at the secondary level, as in other African countries. Although the shift to a seven-year primary course will cause some difficulties, the government hopes to provide places in secondary schools for at least 11 per cent of the primary school graduates throughout the planning period. The planned expansion of secondary schools (secondary grades 1-4) and sixth forms

(secondary grades 5-6) is as follows:

TABLE 3

PLANNED ENROLLMENTS OF SECONDARY SCHOOLS, 1964-1970

Year	Intake of Secondary 1	Output of Secondary 4	Intake of Secondary 5	Output of Secondary 6
1964	4,100	2,068	575	368
1965	6,060	2,494	720	575
1966	7,070	3,047	760	720
1967	7,665	4,100	1,080	760
1968	8,635	6,060	1,080	1,080
1969	8,670	7,070	1,360	1,080
1970	8,670	7,665	1,360	1,360

These targets call for a tripling of total enrollment during the planning period. However, they do not allow for wastage at either level (grades 1-4 or 5-6) and may therefore prove to be overoptimistic.

Secondary and Post-Secondary Technical Education

Technical education at both the secondary and post-secondary levels is increasing in Uganda. The five existing secondary technical schools will be expanded, and their present three-year courses will be changed to four years.

The Uganda Technical College. This institution, formerly the Kampala Technical Institute, has departments of mechanical engineering, electrical engineering, building and civil engineering, and science and mathematics. In 1964 there were 443 students enrolled at the college, of whom 340 were on the advanced craft level of technician courses. The college plans to upgrade its courses while increasing the number of its

graduates. The target enrollment for 1965 was about 540. During this past year, Post-Higher School Certificate courses were introduced, leading to a Uganda Diploma in Engineering. For the time being, courses at other levels will be continued. There were about 50 teaching staff in 1964; in addition, UNESCO is providing 11 internationally recruited "experts" under a Special Fund project running until 1968, which is designed to strengthen and develop the college's teaching.

The projected enrollments in the five technical schools and at Uganda Technical College are as follows:

TABLE 4

PLANNED ENROLLMENTS OF TECHNICAL SCHOOLS, 1964-1970

Year	Technical Secondary Schools	Uganda Technical College <sup>a</sup>			
		Diploma in Engineering	Technical Diploma	Technician	Higher School Certificate
1964	900	...	...	...	...
1965	1,040	30	132	69	40
1966	1,310	64	157	89	40
1967	1,440	94	169	89	40
1968	1,530	106	176	88	40
1969	1,530	106	176	88	40
1970	1,530	106	176	88	40

<sup>a</sup> These figures exclude craft training.

### Agricultural Education

Following the recommendations of the Uganda Education Commission's report (often referred to as the Castle report) prepared in 1963,<sup>1</sup> agricultural education is being expanded. Training in this area has been the responsibility of the Ministry of Agriculture. In 1964 there were three farm schools, with a total enrollment of 370. Present plans call for expanding these schools and adding five more, so that there will be two farm schools in each of the four regions by 1970, with a total enrollment of 2,040.

Under a contract with West Virginia University, AID is helping to staff and develop three certificate- and diploma-level institutions: the Veterinary Training Institute and Arapai and Bukalasa Agricultural Colleges. AID is attempting to maximize the use of present facilities which have been grossly under-utilized. Prior to U.S. assistance in 1963, only 30 students were enrolled at Arapai, which was built for 200; 53 students were enrolled at Bukalasa, whose capacity was about 220; and 37 were studying at the Veterinary Training Institute, which had a capacity of 88.

### Teacher Training

As in other African countries, the supply of teachers in Uganda is a critical factor in plans to expand educational facilities and improve the quality of education. Primary teacher training will be consolidated within four large colleges whose entry requirement will be raised to a School Certificate (except in Karamoja, where there are not enough candidates who have earned a certificate). As the table below indicates, Grade II colleges (whose entrance requirement is four years of schooling after either junior secondary 2 or primary 7) are being phased down, and Grade III colleges (whose entrance requirement is a School Certificate plus two years) are being expanded.<sup>2</sup>

Grade V colleges will provide three-year nondegree-granting programs for secondary teachers who have a satisfactory Cambridge School Certificate. Experience has shown that it is

---

<sup>1</sup> Education in Uganda: The Report of the Uganda Education Commission, 1963, professor E.B. Castle, chairman, (Entebbe, Uganda: Government Printer, 1963)

<sup>2</sup> For a detailed analysis of the primary teacher situation, see "Requirements Analysis for the Consolidation of Primary Teacher Training Colleges," prepared by USAID/Kampala in cooperation with the Ugandan Ministry of Education (December, 1964.)

impossible to get adequate numbers of Higher School Certificate-holders for a nondegree course, since they find a variety of other educational and employment opportunities more attractive.

TABLE 5

PLANNED ENROLLMENTS OF TEACHER TRAINING COLLEGES, 1964-1970

Year	Grade II			Grade III			Grade V		
	Intake	Output	Enrollmt.	Intake	Output	Enrollmt.	Intake	Output	Enrollmt.
1964	969	820	3,540	189	200	390	14	13	30
1965	820	880	3,560	210	190	400	125	14	140
1966	820	890	3,500	210	210	420	170	..	290
1967	820	900	3,390	210	210	420	170	125	460
1968	60	795	2,520	900	210	1,110	170	170	500
1969	60	795	1,760	1,800	900	2,700	170	170	500
1970	60	795	1,000	1,800	1,800	3,600	170	170	500

The Great Need for Secondary and Post-Secondary Teachers. The number of teachers needed to staff the teacher training colleges and the technical and farm schools were worked out as follows:

TABLE 6

NUMBER OF TEACHERS NEEDED, 1964-1970

Year	Teacher Training Colleges			Technical Schools	Farm Schools
	Grade II	Grade III	Grade V		
1964	262	27	6	72	30
1965	263	27	10	83	48
1966	259	28	20	103	75
1967	252	28	32	113	109
1968	194	78	34	120	138
1969	143	184	34	120	161
1970	93	244	34	120	161

A large number of expatriate teachers will be required in all institutions except the primary schools for some time to come. Thus, the use of expatriate staff such as the Peace Corps Volunteers will be essential to Uganda's educational development, but both donors and the government of Uganda must keep in mind the long-range goal of self-sufficiency in the supply of teachers. As the output of nongraduate Grade V teachers increases, great effort must be made to induce a larger proportion of Ugandan graduates -- both from Makerere and from universities in other countries -- to go into teaching.

AID has assisted the training of Ugandan secondary teachers through plans to expand Kyambogo Teacher Training College. It is expected that secondary school teacher preparation will be concentrated in this institution and that enrollment will be increased ultimately from the present 170 students to 500.

### Upgrading Employed Manpower

Numerous training schemes operate in Uganda at the post-secondary level to upgrade employed manpower. As in the other East African countries, government ministries operate in-service training programs to meet their own needs. Unfortunately, the government ministries compete among themselves for a limited number of students, and there is no unified policy for the various training activities. The veterinary school at Entebbe, for example, is being deprived of its students because they go on to the agricultural diploma-level courses in order to get higher salaries.

Other post-secondary training programs include: (1) the Uganda College of Commerce, which offers a two-year post-School Certificate course and hopes to expand enrollment from 120 in 1964 to a maximum of 190 per year by 1967; (2) a forestry school with a two-year course; (3) a cooperative college with a one-year course, enrolling 30 to 40 students annually; (4) a medical college that takes trained medical assistants, nurses, and dispensers for three years after the "O" level; and (5) a law school under the Judiciary Ministry, with a two-year course preparing for assignment in the ministry.

The Institute of Public Administration. After some delay, the government of Uganda appears to be setting up an institute of public administration, responding favorably to a report prepared in August 1964 by the Training Section of the Prime Minister's Office.<sup>1</sup> The proposal recommended that the institute should be involved in training, research, and coordination and should be a government-controlled body. Although the government has not favored a close association of such an institute with Makerere University College, the report suggested that it would be "highly advantageous if an arrangement is made whereby the university guarantees standards of certain 'diploma' courses and makes facilities available." The minimum entry requirement would be the General Certificate of Education, and residential courses would not be less than three months.

The public administration institute should hold its first classes in October 1966. The response of the Ugandan government to offers of AID assistance has so far been cool.

---

1

Training Section, Prime Minister's Office,  
"Recommendations on the Setting up of an Institute of Public  
Administration in Uganda," August 14, 1964.

University Education: Makerere University College

Roughly 500 Ugandans are enrolled at Makerere University College, one of the three constituent colleges of the University of East Africa. Makerere initially was planned as a regional institution to serve the needs of Kenya and Tanzania as well as Uganda. Subsequently, as explained earlier, it became a part of the University of East Africa. Makerere has faculties of arts, agriculture, science, education, medicine, and social science. Ugandans also may enroll in law at University College, Dar es Salaam and in engineering, architecture, and veterinary science at the University College, Nairobi. As already indicated, pressures have been building up in Uganda to withdraw Makerere from the federated university and to go forward with independent development along lines determined by Uganda alone.

University Enrollments and Graduates. In view of the various forces at work, it is difficult to predict the enrollment of Ugandans at the university as a whole and especially their distribution according to fields. As of November 1964, the future growth of undergraduate enrollment at Makerere College was estimated as follows:

TABLE 7

UNDERGRADUATE ENROLLMENTS AT MAKERERE

Field	1964-65	1965-66	1966-67
Arts & Social Science } Science Education	558	490	500
Agriculture	69	88	100
Medicine	219	275	305
Art	40	37	40
<b>TOTAL</b>	<b>886</b>	<b>890</b>	<b>945</b>

Of greater relevance is the annual number of Ugandan graduates from the University of East Africa. The following estimates were being used by Bennett, the manpower planner in the Central Planning Bureau, to calculate the flow of high-level manpower.

TABLE 8

ESTIMATED ANNUAL OUTPUT OF UGANDAN GRADUATES OF  
THE UNIVERSITY OF EAST AFRICA

	1966	1967	1968	1969	1970	1971
Total Number	244	300	300	451	545	667
Africans Included in Total	184	240	240	312	405	527

The Medical School. The Medical School at Makerere offers a five-year degree course. An annual student intake of 60 was planned for 1964, but Uganda has pressed for an increase to 90 per year.

The Institute of Education. Teacher preparation is offered by Makerere in the Institute of Education. During the last ten years the number of students in the education faculty has risen from 30 to 140, and the staff has increased from six to thirteen. It should be noted, however, that this response has been largely due to the Teachers for East Africa program. A working relationship between the institute and teacher training colleges has been developing. The institute has long favored an extra year to produce graduate teachers and a more education-oriented program in contrast to the new general program at Dar es Salaam. There has been difficulty in working out a mutually satisfactory relationship with the Ministry of Education and with the teacher training colleges. The present outlook has improved, although there has been some talk of relocating the institute at a teacher training institution.

Africanization of the Faculty. Although Makerere has been criticized in recent years for being something of an ivory tower unrelated to the real needs of an emerging nation, there are indications that this accusation is now less justified. Both the staff and courses are becoming Africanized. About 20 per cent

of the Makerere staff are Africans. The target is 40 per cent by 1966, but this is probably an optimistic goal. The Rockefeller Foundation is assisting effective Africanization at Makerere by supplying expatriate staff while training African supernumeraries. Through such organs as the East African Institute of Social Research and the Institute of Education, university departments are directly serving the government in critical areas of development. Although they are still a minority, several faculty members at Makerere have expressed their conviction that the college should broaden its relationships with nondegree-granting intermediate-level institutions and should extend its efforts in adult education through extension work, correspondence courses, and evening and sandwich courses; these courses should be both credit and noncredit. As manpower needs become more clearly identified, there is likely to be some pressure applied to direct students into priority fields as is currently being done in Tanzania.

## OVERSEAS STUDY

### Selection Procedures for Study Abroad

The role of study overseas is a major one in the supply of high-level manpower in Uganda. The government has been anxious to keep a tight rein on the selection of students going overseas and to match them with programs that best serve Uganda's needs. Until recently a Central Scholarship Committee administered the awards of all foreign scholarships solely on the basis of educational merit. In September 1964 the responsibility for all overseas scholarships was turned over to a new committee made up mainly of government ministers and permanent secretaries.

### Recovery of Overseas Students

Although the matching of students and offers is the responsibility of the new Foreign Scholarships Committee, the administration of foreign study programs has remained the duty of the Scholarship Section in the Ministry of Education, with the result that the logistical details of financial and travel arrangements are taken care of relatively well. The Scholarship Section keeps a registry of students by name and

year of departure. It has not had enough staff, however, to record the data by country, fields of study, and year of return so that the government and other large employers could make effective use of an important source of manpower. As described below, the small number of Ugandans who return annually from overseas indicates that a large percentage of students stay overseas for more than four or five years and that the government is unable to direct the flow back to Uganda into fields of greatest importance to the nation's development. When more information on overseas students and on manpower requirements is available, the government should be able to utilize its human resources more effectively by allocating bursaries and providing career guidance and appropriate salary schedules.

#### Statistics on Ugandans Studying Abroad

According to the statistics of the Ministry of Education, approximately 1,800 Ugandans were studying abroad as of August 1964. Figures from other sources, however, place the total somewhat lower.

The ministry figures indicated that during 1964 more than one-third (684) of the total number of students abroad were at the diploma level and about one-fourth (457) of the total were non-Africans (presumably Asians). Slightly more than one-fourth (486) of the total were women. The ministry gave the following breakdown of the totals by country of study:

-127-

East Africa  
Report Number 3

The following table gives more recent figures for Ugandans studying overseas than those included in Table 9 on Page 127 of the East Africa report.

The Number of Uganda Students Abroad by Country of Study, December 1964.

	Total	Foreign Govt. Scholars	Uganda Govt. Scholars
United Kingdom	1,411	110	491
U.S.A.	240	128	29
India	126	21	10
West Germany	68	16	
U.S.S.R.	57	18	
Australia	39		30
Yugoslavia	36	17	
Greece	30		
Sudan	29	24	
Canada	26	2	14
Czechoslovakia	20	2	
Eire	20		7
Switzerland	18		
Pakistan	16	10	
U.A.R.	16	15	
East Germany	14		
Cyprus			
Congo	12		
Israel	12	10	1
Ethiopia	7		
Bulgaria	6	1	
Holland	6		
New Zealand	5		
Hungary	5	1	
Ghana	3	3	
Sierra Leone	3		
Zambia	2		
Cuba	2		
Rumania	2		
China	2		
Italy	2	1	
Sweden	2	1	
Poland	2		
Turkey	2		
France	2	2	
South Africa	1		
Denmark	1	1	
Total	<u>2,257*</u>	<u>429**</u>	<u>582</u>

(Continued from previous table)

\* Excludes some Uganda public servants on short training attachments overseas.

\*\* Total of 429 includes an additional 13 Commonwealth scholars and 29 Commonwealth Teacher-Training Bursars, held mostly in Britain.

Source: Uganda Ministry of Education, as reported in the East Africa Journal, August 1965.

TABLE 10 -- Continued

STUDENTS LEAVING UGANDA IN 1964

Scholarship	Students
Russian Government	10
Sudanese Government	8
Yugoslavian Government	16
Czechoslovakian Government	1
Polish Government	2
Pakistani Government	1
Commonwealth Teacher Training Bursaries	<u>19</u>
TOTAL	270

The Annual Rate of Returnees. The total number of Ugandan students now in universities overseas is between 950 and 1,150 and probably has been roughly that since 1961-62. If the annual rate of return is estimated at one-tenth (the rate estimated by the Nigerian Manpower Board for its students overseas), from 1965 through 1968-69 there should be from 95 to 115 Ugandan graduates returning annually. N. Bennett of the Central Planning Bureau was working with slightly more conservative estimates of the annual return of Ugandan graduates from overseas, when he predicted these numbers of returnees:

<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>
60	60	60	139	140	140

Students in the United States

According to the Open Doors reports, the total number of Ugandans enrolled in U.S. universities at both the undergraduate and graduate levels has increased annually, from 21 in 1957 to 159 in 1963-64 (this is 23 more students than were recorded by the Ugandan Ministry of Education as of August 1964). Although there were 83 new students in 1961-62 and 101 in the following year, there were only 54 new students in 1963-64. Obviously, more students are staying for longer periods of time. Moreover, the increase in the number of graduate

students has not kept pace with the increase in the overall total. Whereas in 1957 approximately 30 per cent of the Ugandan students in the United States were graduate students and in 1960-61 40 per cent were graduates, the ratio had fallen to 27 per cent by 1961-62 and 18 per cent by 1963-64. Most students have been enrolled in the social sciences (which accounted for one-third of the total in 1963-64) and in the physical and natural sciences (almost one-fourth of the total). Others have been studying the humanities, medical sciences, engineering, business administration, education, and agriculture, in that order.

To date, 60 Ugandans have been sponsored by the ASPAU program. Twelve students are expected to graduate in 1965, six in 1966, 20 in 1967, and 14 in 1968. The AFGRAD program has sponsored a total of 6 Ugandan students. The largest program for Ugandans in the United States has been the AID participant training program. Over the period 1956-64, 112 participants have returned from study abroad; 61 per cent of these have been in the field of agriculture. As of July 1964, there were 35 participants in training -- 28 in agriculture, 5 in public administration, and 2 in police administration -- and 85 persons awaiting departure for training -- 58 in agriculture, 16 in public administration, 2 in police administration, and 9 in education. The majority of these AID participants are on short training programs of three to six months.

#### Students In the United Kingdom

According to British sources, the total number of Ugandans enrolled in post-secondary (including university) courses in the United Kingdom was 1,342 in 1961-62 and 1,133 in 1963-64, a decrease of approximately 200. All of this reduction has taken place at the nondegree post-secondary level rather than at the university level. As of February 1964, the Ugandan Ministry of Education listed 1,295 Ugandans studying in the United Kingdom at the post-secondary and university levels, 162 more students than recorded by British sources.

The total number of Ugandans at British universities was 218 in 1961-62 and 221 in 1963-64. The ratio of graduate students has increased from 12.8 per cent in 1961-62 to 21.7 per cent in 1963-64, in contrast to the decrease in the United States. Since 1961 the greatest number of students

have been enrolled in the field of medicine -- 24 per cent in 1963-64. The next highest numbers have been enrolled in the arts, social studies, technology and pure science, agriculture and forestry, veterinary science, and dentistry, respectively. Sixty per cent of Ugandan university students in the United Kingdom were known to hold awards of some type in 1961-62, 65 per cent in 1962-63, and 66.5 per cent in 1963-64.

The number of Ugandans in the United Kingdom at the post-secondary nonuniversity level has decreased from 1,124 in 1961-62 to 912 in 1963-64. Almost half of these students have been attending technical colleges where a very high proportion have been working for the G.C.E. examinations. In 1961-62 39.6 per cent (177 out of 477) Ugandans enrolled in technical colleges were working for the G.C.E., and in 1963-64 this dropped to 25.8 per cent (116 out of the total 449). As of February 1964, the Ugandan Ministry of Education listed a total of 133 students working for the G.C.E. in the United Kingdom, 17 more than recorded by British sources.

#### Students in Other Countries

A compilation of the various lists issued by the Ugandan Ministry of Education indicates that 13 Ugandans in 1963 and 29 in 1964 were studying in Eastern European countries. It should also be noted that a total of 115 fellowships were awarded to Ugandans from 1960 through 1963 under the regular and expanded programs of the United Nations Technical Assistance Committee.

### MANPOWER BALANCE SHEET

#### The Manpower Supply-Demand Equation

Although the quantitative data are very limited, certain conclusions can be made concerning the Ugandan manpower situation. It is clear that quantitatively, the need at the intermediate level exceeds the need at the high level and that qualitatively, persons prepared in mathematics, science, and technical subjects are most urgently needed. Within this framework the requirements for secondary teachers, government administrators, and persons with technical or agricultural training appear to be the greatest.

The startling implications of Ugandan high-level manpower needs were outlined by Rado and Jolly, who projected the output of university graduates through 1981 that would be required if the eight per cent growth rate for GDP set by the Ugandan Planning Commission is to be attained. Rado and Jolly showed:

1. That the number of university graduates must increase by about 9.5 per cent annually; the total pool of graduates must increase from 4,000 in 1962 to over 22,000 by 1981.
2. That if full Ugandanization is to be achieved, the number of local graduates must increase by 20 times by 1981.
3. That to achieve this 9.5 per cent average annual increase in university graduates, university intakes will have to expand at the rate of 27 per cent annually from 1965 onwards.

Estimates of the existing high-level manpower stock in Uganda vary from 3,000 (by N. Bennett in 1965) to 4,150 (by Hunter and Harbison in 1962). Calculations of the intermediate-level manpower supply range from 7,300 (Bennett) to 10,600 (Hunter and Harbison).

Hunter and Harbison estimated that additional requirements over the ten-year period 1961-71, based on two different rates of national growth, would be between 4,430 and 6,350 at the high level and between 13,080 and 21,300 at the intermediate level.

Because the different estimates are based on different assumptions, efforts to equate these calculations of supply and demand must be considered cautiously. A comprehensive study will be necessary for a clear picture of the Ugandan manpower situation. Existing projections reviewed by the EWA study committee indicate the magnitude of Ugandan manpower needs which will not be met for several years.

Bennett estimated the annual output of Ugandan graduates from the University of East Africa and from overseas as 360 in 1968, 685 in 1970, and 807 in 1971, and the total output from 1966 through 1971 as 3,106. On the basis of the Harbison and Hunter projection that Uganda would need between 2,000 and 3,500 additional high-level personnel between 1961

and 1971 and of Bennett's estimated output, it would appear that Uganda is currently on the way to meeting her high-level manpower needs. If the number of graduates from the University of East Africa and overseas increases by about 100 per year between 1971 and 1981, the total stock of Ugandan graduates will increase from 807 in 1971 to about 18,000 in 1981. Adding the several hundred graduates already absorbed into the economy by 1966, when Bennett began his calculations, it seems possible that the Rado and Jolly goal of 22,000 university graduates by 1981 may be met.

The needs at the middle level, however, will not be met by 1971.<sup>1</sup> The expansion of secondary schools planned by the Ugandan government will produce about 6,460 secondary graduates between 1966 and 1971, not quite meeting Hunter and Harbison's minimum estimate of needs. (Hunter and Harbison calculated that the intermediate level requirements between 1966-71 would be between 6,900 and 13,500.) In order to fill middle-level vacancies existing before 1966 and to meet the demands added by Africanization, the output of secondary school graduates will have to be substantially larger than planned.

---

<sup>1</sup> Because the few surveys that have been made of the Ugandan manpower situation have used different time periods in their projections of future requirements, it is impossible to indicate middle-level needs past 1971.

**CONCLUSIONS AND RECOMMENDATIONS**

## CONCLUSIONS AND RECOMMENDATIONS

### East African Regional Issues

In spite of uncertain conditions in East Africa, the present situation favors a fresh approach to educational development by the East African governments and by external donors. AID is in a position to take advantage of this situation with respect to its own assistance programs. As indicated in the introductory statement, there are a number of large issues of a regional character for which answers should be sought and a continuing review of human resource development strategy in East Africa should be undertaken.

In the pages following, the study committee reports its conclusions with respect to the regional issues. Although it is not possible to offer definitive recommendations on these issues at this time, the study committee does indicate those areas where a fairly firm position can be taken.

Following discussion of regional issues and suggestions, the study committee offers its conclusions and recommendations for each of the three countries, Kenya, Tanzania and Uganda. Because of the fluid character of the present situation in East Africa, these recommendations obviously must be reviewed in the light of recent developments and information not known to the study committee.

#### 1. Consideration of Effective Assistance To National Educational Systems

Certain elements are essential for a viable national system of education for each country. Regardless of the future of regionalism, it is clear that Kenya, Tanzania and Uganda each will go forward in the development of national educational systems. Each of these countries is faced with the tasks of improving the quality as well as the quantitative opportunities of education. It is appropriate for AID to consider effective forms of assistance at national levels, particularly with respect to improving the supply and quality of teaching personnel, curriculum content, and instructional methods. At this writing, plans for primary and secondary education are being developed in the ministries of education in each country. Until these are acted upon, no firm recommendation for specific AID action can be made. It is clear, however, that the costs of education in all three countries are mounting and that the East African governments face serious problems of financing. Choices will have to be made.

As its own continuing evaluation of human resource development strategy goes forward, AID should systematically analyze the costs of education, including estimates of projected costs. It should gear its assistance programs to the best use of East African resources and the avoidance of unrealistic expansion of educational facilities.

## 2. Reorientation and Improvement of Secondary Education

AID should consider what changes should be sought in secondary education. As indicated in the country reports, East Africa is short of Class B and Class C manpower. In part this shortage is due to inadequacies of the secondary school systems, both quantitative and qualitative. The report of the Kenya Education Commission has recognized this situation and has argued for a broadening of the concept of secondary education. It proposes "development of certain types of post-primary education which are designed to provide an outlet not, as hitherto, primarily into the university, the professions and various white-collar occupations, but into the production side of industry, including agriculture." The Commission also favors "a wider range of options in the established secondary schools and a less academic treatment of subjects." It urges the inclusion of vocational subjects in the secondary school curriculum.

The observations of the Kenya Education Commission apply to secondary education in the rest of East Africa, indeed to Africa generally. The conclusions provide the terms of reference for an action program. A fresh approach to educational development in East Africa should place heavy emphasis upon the reorientation and improvement of secondary education. This should be an area of prime concern to AID.

## 3. Improvement of Secondary School Teacher Training and Supply

The most critical bottleneck in the development of a well-balanced educational system in each of the countries is the shortage of qualified secondary teachers, particularly in science and mathematics. How can this shortage be overcome? While regional approaches to the preparation of secondary teachers should be encouraged, the committee believes that it also is appropriate for AID to support national efforts to meet this problem. Thus the committee recommends that AID go forward with assistance to the faculties of education and also the institutes of education at University College, Nairobi and University College, Dar es Salaam. At Makerere, AID should

observe closely current trends in teacher preparation and in the institute of education and be prepared to assist at this institution, particularly if Makerere develops a program more like that at Dar es Salaam.

The study committee commends AID support of TEEA. If it should not be possible to continue this program on a regional basis, AID should not give up the program, but should work out arrangements for TEEA within each of the three countries. The committee believes that it is important to maintain an input of American experience into the preparation of secondary school teachers in East Africa.

The United States government has determined to terminate the Teachers for East Africa program and to supply American teachers through the Peace Corps. The Study Committee suggests to AID that it explore ways in which it might assist the Peace Corps effort through provision to these teachers of teaching materials and equipment where these are not otherwise available.

#### 4. University Education

AID should give careful consideration to (a) the kind of university system suitable for East Africa, under either regional or separate national arrangements, (b) the university-level resources essential for each country, and (c) the alternative forms of cooperation which might be feasible.

Uncertain Future of UEA. Under the uncertain conditions now prevailing, particularly with respect to the University of East Africa, no single, all-inclusive answer to these questions can be provided. Too much depends upon the character of future political and economic relationships among the three East African countries. It is clear, however, that the approach attempted at Como has not succeeded. Even apart from factors at the government level, each country increasingly has manifested its national interests and aspirations for university development. All three countries, however, face the prospect of mounting financial difficulties if they try to build up national universities. At this time it is not known what the additional and recurrent costs would be, but it is clear that costs would be substantial.

National Resources for University Development. Under these circumstances it is important to identify those university resources each country should possess regardless of the outcome of regional developments. Definitive conclusions should be based upon more evidence than has been assembled in this study and should be an objective of a continuing review. The committee believes at this time, however, that the basic pattern established in the creation of the University of East Africa is sound; that is, that each country should have faculties of arts, sciences and education and that at this stage of East African development, duplication of the specialized degree-level faculties should be avoided.

Thus it is reasonable and appropriate for each country to go forward with moves to strengthen the common faculties. To a considerable degree capital needs have been met. It is more important now to provide adequate teaching personnel and resources and to make sound arrangements for financing the recurrent costs of university education.

AID Support for University Staffing. Makerere and the university colleges in Nairobi and Dar es Salaam all face staffing problems in varying degrees. To achieve their purposes these institutions ultimately must develop stability and a degree of permanence within their faculties. They must recruit and retain well qualified African scholars. But to reach this goal they must pass through a period of continued, even extended in some cases, reliance upon expatriate personnel. Private foundations as well as AID are playing an important role in helping to meet both the immediate and long-range requirements. The committee concludes that AID can make an increasing contribution in this area. With respect to immediate faculty staffing, AID should support efforts to recruit American teaching personnel and to provide assistance to appointments in the form of travel expenses, topping up of salaries, and provision of teaching materials, laboratory equipment and teachers' other needs. With respect to Africanization of the faculties, AID should consider as an example the present University of East Africa program supported by the Rockefeller Foundation to identify young Africans for supernumerary appointments and for further graduate study preparatory to regular assignment. It is possible that such a program could be extended with AID support in each of the three colleges. As suggested below, AID also should consider other means of recruiting teaching personnel from among East Africans studying in the United States.

Exploration of Alternatives for University Development. These things can go forward now. Larger, more comprehensive issues relating to the form and structure of university education, however, cannot be resolved until the future character of university development has been worked out by the East African governments. While highly sympathetic to the concept of a federal university as demonstrated in the plans for the University of East Africa, the study committee believes that it would be a mistake for AID or any other external donor to take a rigid or doctrinaire stance with respect to this matter. Instead AID and others should recognize the character of the separate interests of each country and should be prepared to explore with East African authorities alternate ways of accomplishing the principal objectives of a federal university. There are other arrangements, such as affiliation for maintaining common standards of admission, instruction and degree requirements, and strengthening the present loose regional councils for professional education, that might be used. Likewise, consideration might be given to cooperative arrangements common in the United States, such as inter-state educational compacts and regional colleges associations, although the limitations of such arrangements should be clearly recognized.

AID Support of Teacher Preparation. As suggested above, it also is appropriate at this time to go ahead with support for teacher preparation at the three colleges, particularly at Nairobi, where the need is greatest, and at Dar, where the prospects of a successful program are promising. Continuing support of the efforts of institutes of education to improve the quality of primary and secondary education also should be provided. Likewise, regardless of generally uncertain conditions in the East African region, AID should not hold back on appropriate assistance to the service functions of the three colleges, such as programs in adult education and public administration.

##### 5. Cautious Policy Toward Professional Education

AID should consider the lines along which professional education (medical, veterinary medicine, agriculture, engineering) should develop in East Africa, but uncertain conditions make it impossible at present to come to firm conclusions concerning assistance programs in the area of professional education. As already indicated, the development plan for the University of East Africa avoided duplication of specialized faculties, providing for medicine and agriculture at Makerere, veterinary science, architecture and engineering at Nairobi, and law at Dar,

but pressures are working against this division of labor. Each country would like ultimately to have medical, engineering and law faculties of its own. It can be expected that there will be efforts to elevate the agricultural schools at Bukalasa, Egerton and Morogoro to degree status, following the precedent of the Medical Training Center in Dar es Salaam. Such a move is less likely in veterinary science, since the University of East Africa faculty at Nairobi should be able to meet the needs of all of East Africa for some time to come.

Certainly at this stage AID should follow a cautious policy with respect to assistance in these specialized areas until the future of the University of East Africa and of regional relationships becomes much less uncertain. AID should make opportunity to emphasize to the governments that advancement into professional education beyond the present University of East Africa plan will be extremely costly and that it could not be accomplished without additional external assistance for capital development and for faculty and other forms of current support. The governments must be helped to understand the financial as well as educational implications of their ambitions. They must explore alternative ways of accomplishing their goals. These might include the use of regional scholarships coupled with quotas for non-national students in each professional faculty, along the lines of interstate "compacts" for this purpose in the United States. In any event, familiar forms will have to be dropped and AID must exercise care not to be linked to outmoded arrangements.

#### 6. Support To Sub-professional Education

AID should consider the appropriate relationship of the university system to sub-professional, non-degree granting institutions. The conclusion stated above with respect to professional education applies also to the non-degree granting sub-professional institutions. The study committee believes that it is appropriate for AID to provide support at this level, such as at Bukalasa and Egerton in agriculture and at the Kenya Polytechnic and Dar es Salaam Technical Institutes. Under present circumstances, however, AID should not contemplate assistance designed to advance these to degree-level programs, thereby duplicating degree courses offered by the University of East Africa. Instead these institutions might be brought into special relationship with the university. This is another matter to be considered as a part of the proposed continuing review of human resource development in East Africa.

## 7. Secondary-University Relationships

AID should consider what relationship of the university system to secondary education is appropriate and what university entrance levels should be maintained. The issue of entrance levels remains controversial in East Africa and indeed in English-speaking Africa generally. Officially, both the University of East Africa and the East African governments are committed to sixth form (Higher School Certificate) entry. On the other hand, there is sufficient evidence to suggest that this issue is far from closed and that the present uncertain conditions in East Africa offer an opportunity for realistic reappraisal. Consequently, the question of entrance levels should also be a part of the proposed continuing review.

It is true that the special study of entrance levels undertaken by the University of East Africa in 1964 recommended sixth form entry. It is true also that the Kenya Education Commission recommended the addition of Higher Certificate forms to schools which do not at present offer instruction at this level. But at least one of the consultants to the committee on entrance levels felt that the possibility of fourth form entry should not be closed, and others within the university hold this view. The committee recommended, and the university accepted, less rigid entrance requirements at the sixth form level as well as extension of the so-called "mature age" entry.

The Kenya Education Commission moved off in a somewhat different direction. Besides recommending that sixth forms should be extended, the commission urged that entry to this level should not dogmatically be limited to individuals with a first or second division certificate. More significantly, moreover, it recommended the establishment of "Intermediate Colleges." It did not make fully clear what these should be. They would enroll about 500 students, presumably at school certificate level, and would offer a good range of options. They would be somewhat like a university but would be more organized and directed. They would apparently offer terminal instruction in some sub-professional areas, but for some students the intermediate colleges would be preparatory to college or university entrance.

The study committee withholds judgment on the intermediate college concept until further details are provided in the Education Commission's second report. The proposal to establish such colleges should be most carefully considered in the full context of the future relationships between secondary,

sub-professional and university education, and in reference to university entrance levels. The study committee is aware of the situation in Nigeria, where in spite of official pronouncements favoring sixth form entry, the issue of university entrance levels is being thoughtfully reconsidered. A wide range of factors are involved in this matter, including comparative costs, the need to fill out the universities to the limits of their capacity, educational philosophy, and so forth. East Africa, for reasons similar to those influencing Nigerian thought, may move in the same direction. Accordingly AID should itself move cautiously with respect to assistance to intermediate colleges, or to junior colleges, as advocated by some American interests several years ago, until the course of events carries the issue a bit further and until the positions of the East African governments are reshaped.

In this same area, more information is needed on the potential outputs of secondary school leavers at both the school certificate and higher certificate levels and on the capacity of the university to absorb them.

### 8. Financing University Education

At the present time the governments of the three East African countries provide bursaries for all students attending the University of East Africa. As the financial burdens of educational and other forms of national development become larger and more difficult to bear, it is likely that the capability and the willingness of the governments to carry the full costs of university education will diminish. But at the same time, the financial capabilities of East African students also are limited.

Thus it is important, if university development is to proceed, to consider supplementary means of financing university education. It may prove necessary to shift at least part of the burden to the student. One possibility is the use of student loans. There are serious obstacles to use of a student loan program in Africa, but AID should observe closely the arrangements for such a program that are underway in Nigeria. AID should consider assisting in establishing a similar program in East Africa, either on a regional or national basis.

Likewise, AID should review the relationship of its regional scholarship program to the changing pattern of university education in East Africa. The study committee believes that the

program should be administered in a manner that will advance sound institutional development in East Africa. Regardless of the fate of the federal university, this program can be used to support the principle that duplication of expensive specialized faculties should be avoided. Regional scholarships thus should be tenable in the existing specialized faculties. Regional scholarships might also be open to students from Central Africa, where these specialized faculties are not available.

#### 9. Overseas Study

The manpower calculations in the country reports indicate that overseas study must continue to make a very substantial contribution to the solution of East African manpower needs for some time to come. This suggests that present levels of assistance for such study should be maintained. If East African University entrance levels are altered to open enrollment opportunities to school certificate holders, fewer opportunities overseas would be required. But, in any event, emphasis should be shifted to areas of study relating to critical manpower needs and gradually from the undergraduate to the graduate level.

The study committee recommends to AID that it consider assistance to East African authorities to develop devices to relate overseas study more directly to manpower requirements and employment realities. As indicated, in each of the countries machinery for selecting students and registration of information concerning their whereabouts, fields of study, dates of return and so forth needs strengthening. In Kenya, the Ford Foundation is now providing help in this area. AID should be prepared to help in Tanzania and Uganda should there be an opportunity to do so. Likewise efforts should be made to keep foreign student advisers in American universities informed of the problems of manpower needs and utilization in East Africa.

Unfortunately, it is difficult for East African governments to keep up with information on their students in the United States. Their embassy and consulate staffs are too undermanned for this purpose. While AID should not initiate action in this area, it should be responsive to proposals from these governments to assist by providing help to student advisers.

In the past AID and the Ford Foundation have sponsored several recruiting missions to the United States made up of representatives of the East African governments and EACSO. These experiences were of limited value because of insufficient prior

preparation and too hurried a schedule in the United States. This approach should not be rejected, however, particularly if it can be combined with improvement of counseling arrangements in the offices of the East African governments in the United States.

Because of the very special need in East Africa for secondary school teachers, the study committee recommends to AID that it consider support of special arrangements designed to attract East African students in the United States to teaching positions at home. These arrangements might include scholarships or loans for specialized preparation for teaching, assistance for returning travel, and the development of special programs for returning students by the faculties of education in East Africa (one such program has been proposed at University College, Nairobi).

#### 10. East African Common Services Organization

As already indicated, EACSO plays an important role in human resource development in East Africa, as a trainer of manpower as well as an employer. Its revenues contribute to support of the University of East Africa. Although the future of the organization is uncertain, the study committee suggests to AID that it go forward at this time on the assumption that EACSO will not break up. This is the position of at least one major American foundation.

The East African Staff College represents a significant effort by EACSO and the three governments to undertake a high-level training program for EACSO and government officials. The modest start in 1964-1965 produced mixed results. For one thing, as indicated, the governments were unable to assign individuals at the level appropriate to the objectives of the program. Secondly, the character and the course of study may not have been sufficiently related to East African needs. It is expected and hoped that this effort will go forward. Although present regional relationships remain uncertain, AID should observe the Staff College closely and should be prepared to consider assistance if the opportunity develops.

#### 11. Continuation of the Participant Training Program

The participant training program, under which selected individuals are brought to the United States for a variety of training experiences related to their professional or occupational positions in East Africa, has made a very important contribution to the

upgrading of employed manpower. The study committee concludes that AID should go forward with this program, since its success is not directly related to the changing character of changing regional relationships except in the case of EACSO enterprises. But even here, since these enterprises will go forward in some form or other in any event, the improvement of their personnel continues to be highly desirable and appropriate.

## Kenya

The recommendations of the Study Committee with respect to Kenya are based upon the following assumptions:

1. That the government of Kenya has not yet completed formulation of its own strategy of human resource development. The manpower survey has only recently been completed, and the second part of the report of the Education Commission which will deal with priorities and costs has not been issued. The government has not yet acted upon the commission's recommendations and the Kenya Development Plan, moreover, is under review.

2. That continuous consultation with the appropriate agencies of the Kenyan government and major external donors will be necessary to ensure that USAID's strategy is most effectively related to Kenya's changing needs.

3. That the Ford Foundation will continue to play a major role in helping the government of Kenya to set up appropriate machinery for collecting manpower data and for utilizing this data in the rational development of human resources.

4. That Kenya will continue to rely heavily on expatriate manpower and assistance for some time, and that present assistance programs (TEEA, Peace Corps, and others) will be continued.

The May 1965 manpower<sup>1</sup> survey indicates the following manpower development priorities for Kenya:

The greatest shortage is graduate secondary teachers, particularly in the fields of mathematics and science.

The second greatest shortage is university teachers (in Class A) and trained primary teachers (in Class B). The development of the entire educational system depends directly upon the quality and quantity of teachers available. On both accounts, these fields must assume top priority in Kenya.

A high priority should be assigned to the supply of doctors, nurses, engineering and laboratory technicians, accountants and draftsmen, and the upgrading of employed manpower.

---

<sup>1</sup>The major recommendations of the survey are summarized below as Appendix.

Lower priority should be given to the arts, humanities, and general sciences unless persons trained in these fields can be diverted into teaching.

### Recommendations

1. The general recommendations made above with respect to East Africa apply also to Kenya specifically.

2. Concentration on the Improvement of the Teacher Supply

#### Support for the Faculty of Education at University College Nairobi and of a University-Based Institute of Education

The committee endorses AID's plan to provide technical assistance to the Faculty of Education at the University College, Nairobi and recommends that AID encourage the Faculty of Education to relate closely to the Institute of Education, which also should receive assistance through TEEA.

3. Support for University College, Nairobi

#### Expansion of the Service Role of the University College

The committee recommends that AID encourage the University College to broaden its service role, through such programs as the Institute of Adult Studies.

4. Broadening of the Secondary School Curriculum

AID should watch carefully the response of the Kenya government to the recommendations of the Kenya Education Commission and should be prepared to offer assistance for the purpose of broadening the curriculum and otherwise improving secondary education.

5. Support for Upgrading Employed Manpower

#### Continuation of Support for KIA

The committee recommends that AID watch for the response of the Kenya government to the Adu Report. If this response is favorable AID should be prepared to offer assistance for the continuation of KIA.

6. Emphasis on Overseas Study in Priority Fields

The committee recommends that ASPAU be maintained at its present level but ASPAU scholarships should be strictly limited to fields selected by the manpower planning unit. In the longer view, as the capacity of University College, Nairobi increases, the AFGRAD program should be expanded and should replace the ASPAU program.

## Tanzania

To a degree not observed in other African countries, the government of Tanzania has identified its manpower goal -- self-sufficiency by 1980 -- and has related its educational plans and programs to this goal through effective administrative devices. The recent manpower survey suggests that Tanzania is making substantial progress toward this goal. Its calculations are based upon certain assumptions which are as follows:

1. The planned secondary school Form 4 and Form 6 outputs will be achieved.
2. The four to three ratio of science to arts students among Higher School Certificate-holders will be brought about.
3. The University of East Africa will be able to provide the places for the inputs required by Tanzania's manpower needs.
4. The government will continue its policy of offering bursaries to the University of East Africa and overseas only in accordance with Tanzania's needs for specific skills and knowledge as related to the country's program of economic and social development. In other words, the government's practice of tying bursaries will be continued.
5. While a straight line average of 120 per year will be required to complete replacement of almost all expatriates in government service by 1980, the average in the five-year period to 1968-1969 will be at a substantially lower rate.

The Education and World Affairs Study Committee finds that these assumptions, as well as the basic goal of manpower self-sufficiency by 1980, are reasonable expectations. They provide the framework for a strategy of human resource development in Tanzania. As in other countries, the committee is convinced that such a framework is essential for an effective AID program. Although AID should plan its own development strategy for Tanzania, it is fortunate that the government of Tanzania, through the work of the Manpower Planning Unit, has produced the elements for such a strategy.

Accordingly, the study committee concludes that AID should support the fulfillment of the assumptions set forth in the manpower survey as a basis for United States government assistance strategy for Tanzania.

### Priorities in Manpower Development

The following manpower development priorities are based upon the 1964 survey:

The greatest shortage is graduate secondary teachers, particularly in science and mathematics.

The second greatest shortages are physicians, certain kinds of engineers, and university teachers.

A high priority should be assigned to the preparation of agricultural specialists, general scientists, dentists, medical technicians, engineering technicians, agricultural technicians, and to the upgrading of primary school teachers.

Lower priority should be given to arts graduates. Individuals enrolled in arts programs should be encouraged to enter secondary school teaching.

### Recommendations

#### 1. Concentration on Improvement of Secondary Teacher Supply

##### a. Support for the Faculty of Education at University College, Dar es Salaam

The Committee is most favorably impressed by the strong start made under the leadership of Professor Honeybone and recommends that AID supplement its general support to the university college with specific support to the Faculty of Education as may appear appropriate to the achievements of its objectives for the preparation of Tanzanian secondary school teachers.

##### b. Changombe Teachers College

Although assistance through the Kent State University contract has terminated, the committee recommends that AID encourage a close relationship between Changombe Teachers College and the Faculty of Education at University College, Dar es Salaam.

2. Support for University College, Dar es Salaam

a. Institute of Education

As a means of improving the quality of both primary and secondary education, AID should give favorable consideration to provide assistance to the new Institute of Education, affiliated with the Faculty of Education.

b. Emphasis on the Service Role of the University College

Likewise, as a means of extending the upgrading of employed manpower, AID should encourage the service role of the University College and should consider appropriate continuing support to the Extra-Mural Department and the Institute of Administration.

3. Development of Intermediate-Level Manpower

a. Dar es Salaam Technical College

The study committee endorses the present AID program of support to the Technical College through the California Polytechnic Institute. Every effort should be made to assure the objective of relating instruction in the college to the realities and requirements of employment opportunities, particularly through the development of close ties with the private sector.

With the termination of plans for an institute of business administration with West German assistance, AID should consider the possibility of aid to strengthen the commercial course offerings of the Technical College.

The study committee recommends that AID discourage such pressures as may develop to raise the Technical College to a degree level institution.

b. Morogoro Agricultural College

The study committee endorses AID support of this institution and recommends that additional assistance be considered as appropriate to assure that the college meet its enrollment goals during the next five years. As in the case of the Technical College, AID should discourage efforts to raise Morogoro to degree level and also encourage a closer relationship between Morogoro and the Ministry of Agriculture research programs.

#### 4. Overseas Study

##### a. Undergraduate Study

The manpower survey indicates that undergraduate study overseas should be maintained at present levels during the next five years. The study committee recommends therefore that the ASPAU program be maintained at its present level but that ASPAU scholarships should be strictly limited to high priority fields. In the long run, as enrollments at University College, Dar es Salaam increase, the ASPAU program should be gradually replaced by the AFGRAD program.

#### 5. Manpower and Educational Planning and Administration

Thanks in large measure to the Ford Foundation, the government of Tanzania has developed effective machinery in the area of manpower analysis and planning. AID and other donors have likewise provided effective assistance in the Ministry of Education. While Tanzanians are being prepared to assume principal responsibilities in these areas, external staff assistance will be needed for some time. Experience in recent months in the office of the registrar of students indicates that an effective program can deteriorate rather quickly.

The study committee recommends that AID maintain a close watch on this situation and be prepared to offer appropriate assistance to maintain the relatively high-level of administrative effectiveness that has been maintained in Tanzania in the past. Efforts should be made to maintain the assignment of the AID training officer and educational adviser to desks in the Ministry of Education.

## Uganda

The recommendations of the study committee for Uganda are based upon the following assumptions:

1. That if the situation is uncertain in Kenya, it is more so in Uganda. Here the published development plan is out of date, and a new one is being formulated. There is no manpower survey as yet. While the Ministry of Education has engaged in extensive educational planning, there is at present no over-all educational development plan. Thus many issues cannot properly be resolved, particularly those relating to external assistance, until more certain knowledge of the needs and prospects for educational development is available.

2. That continuous consultation with the appropriate agencies of the Ugandan government will be necessary to insure that USAID's strategy is applied to Uganda's changing needs.

3. That the reduction of wastage and the improvement of the quality of primary and secondary education are essential for the development of intermediate- and high-level manpower in Uganda. For example, the traditionally academic secondary school curriculum should be broadened to provide more meaningful terminal education for those who enter directly into the labor market.

### Priorities in Manpower Development

The greatest shortage of trained manpower in Uganda is at the middle level. Even with maximum effort in educational development, the country will not meet minimum middle-level manpower requirements by 1981. Top priority should be assigned to meeting these needs.

The greatest shortage in any single category of Ugandan manpower is teachers, at secondary schools, particularly in scientific and technical subjects, at teacher training colleges, and at technical and farm schools.

High priority should be assigned to meeting the needs for high-level manpower. In order to meet by 1981 the high-level manpower requirements essential to national growth, the capacity of the University of East Africa and the facilities for upgrading employed manpower in Uganda must be substantially increased.

A high priority should be assigned to the training of agricultural personnel because productivity in this sector is essential for national development.

### Educational Capabilities

The least adequate aspect of the Ugandan educational system has been the secondary level. The bottleneck in secondary education is directly related to the shortage of qualified teachers. The Ugandan government has planned to expand secondary schools and sixth forms in order to accommodate by 1970 a total enrollment three times larger than that of 1964. If such expansion is to be accomplished, it is clear that great numbers of additional teachers, many of them necessarily expatriates, will be needed. A broadening of the secondary curriculum to provide more meaningful terminal education for those who do not continue their formal education should be considered.

The most highly developed educational facilities are at the primary level (between 30 and 42 percent of the age group are enrolled) and at the university level. Uganda in Makerere College has a long head start on the other East African countries, and this institution has contributed to the manpower resources of the region. As a consequence of pressure by the Uganda government, Makerere, as distinguished from the other colleges in the University of East Africa system, will inevitably be related more closely to Ugandan high-level manpower needs.

### Recommendations

#### 1. Assistance to Manpower Planning

In the unlikely event that technical assistance for manpower planning in Uganda is requested, AID should be prepared to provide it. The work now being undertaken at Makerere and by the Central Planning Bureau of the Ministry of Planning and Community Development is valuable but as yet incomplete, and the time is ripe for a comprehensive study of Uganda's manpower needs.

#### 2. Assistance to Educational Planning

USAID should respond to the request to provide a planning adviser in the Ministry of Education to fill the gap temporarily left by the departure of an experienced expatriate.

Uganda has prepared extensive plans for educational development as part of the next five-year plan and of an application for an IBRD loan, but it will be essential to assist Uganda in developing a continuous capability to evaluate present plans and develop new ones that use manpower data as these data are collected.

3. Continued Support for Agricultural Education

AID should continue to support the Veterinary Training Institute at Arapai and Bukalasa Agricultural Colleges. AID should not encourage Ugandan efforts to raise these certificate- and diploma-level institutions to the degree-granting level, but rather encourage closer cooperation with the degree-granting faculties of the University of East Africa.

4. Improvement of Adult Education and In-Service Training

USAID should explore ways of supporting a broad range of efforts for the upgrading of employed manpower. Such support might include both credit and noncredit work at Makerere, the proposed public administration institute, the coordination of present in-service training programs, and the use of such media as radio, television, and correspondence study. Since the combined efforts of local and overseas study will not produce sufficient manpower for Uganda's development needs--at least for the next 15 years--the upgrading of those presently employed is critically important. The university and government should be encouraged to provide short sandwich courses, extension work, and other types of adult education that require less cost and less time than the full university degree program. It is evident, moreover, that the various existing in-service training schemes are not integrated within an overall policy and, in fact, compete with one another for the scarce supply of secondary school leavers. In such a situation it is essential that clear priorities be identified so that entrance levels, diplomas, and salary schedules can be planned in such a way as to best utilize scarce resources.

5. Emphasis on Overseas Study in Priority Fields

There remains a significant role for undergraduate study by Ugandans in the United States, particularly in fields not

available at the University of East Africa. ASPAU, which has sponsored 60 Ugandans since 1961, has made a significant contribution. But the build-up of Makerere will eventually diminish the need for major government-supported programs of study abroad. Accordingly, the committee recommends that AID support for undergraduate study abroad ultimately should be phased down gradually. Study at the advanced level under AFGRAD and similar programs, moreover, should be related to specific job assignments.

## SELECTED BIBLIOGRAPHY

This study has been based principally upon information obtained by observations and interviews and upon documentary information not available for distribution. The following bibliography is limited to items that are particularly relevant to the terms of reference of this study. Those items marked with an asterisk (\*) are available in the library of Education and World Affairs, 522 Fifth Avenue, New York City.

### I. EAST AFRICA (REGIONAL)

#### Regional Development

Organization for Economic Co-operation and Development. "East Africa Technical Assistance Conference, EACSO Headquarters Building Conference Hall, Nairobi, July 15th - 17th, 1964 (Note by Secretariat)." Paris, France: OECD, July 10, 1964. 47 p. (E.37961 and 48.720) (Mimeographed.)\*

Consists of two documents: (1) "Areas of Needs for Technical Assistance in East Africa," and (2) "Conformance of the Standard Terms of Service for Technical Assistance Personnel with the East African Customs Tariff Ordinance," an annex to the paper "Standard Terms of Service for Technical Assistance Personnel in East Africa" (Issued June 30, 1964). The first is a hastily compiled list of estimated technical assistance needs of the three East African countries, prepared by inquiries of each ministry; an unreliable indicator. The second is a list of customs privileges and items subject to duty.

Uganda. Makerere University College. Faculty of Social Sciences. East African Institute of Social Research. "Foreign Aid, Domestic Finance, and the Development Plan," by P.G. Clark. Prepared for the University of East Africa Conference on Foreign Aid in Dar es Salaam, September, 1964. Kampala, Uganda: East

African Institute of Social Research, August 30, 1964. 11 p. + tables. (Economic Development Research Project, No. 45.) (Mimeographed.)\*

An analysis of economic trends in the three East African countries during recent years prepared by a staff member of the Faculty of Social Sciences. Examines the contribution of various sectors to GNP and sources of income; indicates the need for foreign aid.

---

. Makerere University College. Faculty of Social Sciences. East African Institute of Social Research. "Future Trade, Balance of Payments and Aid Requirements of East Africa," by B. Van Arkadie and P. Ndegwa. Kampala, Uganda: East African Institute of Social Research, May 27, 1964. 29 p. + tables. (Economic Development Research Project, No. 31.) (Mimeographed.)\*

Examines the trade balances of the East African countries and draws conclusions with reference to the need for external aid.

### Manpower Studies

Tanganyika. Directorate of Development and Planning. Manpower Planning Unit. "Manpower and Aid: Proposed Policy for Use of Non-National Personnel by Developing Nations," by E. Rubin, manpower adviser to the government of Tanganyika. Prepared for the University of East Africa Conference on Foreign Aid, one in the series of 1963-64 Conferences on Public Policy, held in Dar es Salaam, September 22-26, 1964. Dar es Salaam, Tanganyika: Manpower Planning Unit, September, 1964. 7 p. + appendices. (East African Case Studies, "Foreign Aid.") (Mimeographed.)\*

Examines the requirements for manpower programs, particularly those of the civil service; includes comparisons of West African and East African countries.

Uganda. Makerere University College. Faculty of Agriculture. Sub-committee [on East African Agricultural Manpower]; P. Mahadevan, chairman. "The Short-Run Demand for Agriculture and Agricultural Science Graduates in East Africa: The Final Report of the East African Agricultural Manpower Survey, 1963." Prepared by

D.G.R. Belshaw. Kampala, Uganda: Faculty of Agriculture, Makerere University College, 1963. 7 p. + tables. (Mimeographed.)\*

Final report of a survey conducted under the aegis of the Council for Agricultural Education in East Africa. Surveys the manpower situation in the three East African countries, forecasts growth and replacement needs, and projects requirements to 1970.

---

Makerere University College. Faculty of Medicine. Department of Preventive Medicine. "Medical Manpower in East Africa: Factors in Planning," draft, by F.J. Bennett, J.S.W. Lutwama, and S.A. Hall. Kampala, Uganda: Department of Preventive Medicine, Makerere University College, January 6, 1964. 17 p. (Mimeographed.)\*

An analysis of the medical problem in East Africa and the doctor-patient ratio. Projects population growth trends and number of personnel needed to replace the high percentage of expatriate doctors. Concludes that the School of Medicine at Makerere will have to be expanded and additional medical schools will be needed before long.

---

Makerere University College. Faculty of Social Sciences. East African Institute of Social Research. "The Scope for Short Term Manpowers [ sic ] and Educational Policies," by E.R. Rado. Kampala, Uganda: East African Institute of Social Research, December 15, 1964. 17 p. (Economic Development Research Project, No. 60.) (Mimeographed.)\*

Indicates the extremely critical high-level manpower situation in East Africa and the lack of maneuverability this presents to the three governments. Concludes that these governments will not only have to retain and even increase the number of expatriate personnel but will also have to make stringent allocations of secondary and post-secondary graduates and bond them in specific jobs.

---

Makerere University College. Faculty of Social Sciences. East African Institute of Social Research. "The Demand for Manpower -- An East African Case Study," by E.R. Rado and A.R. Jolly. Kampala, Uganda: East African Institute of Social Research, December 15,

1964. 22 p. (Economic Development Research Project, No. 44, Revised). (Mimeographed.) \*

Using Guy Hunter's estimates of the manpower stock in the region, makes different assumptions about the wastage rates and growth. This study is critical of the work done by Professor Harbison of Princeton and favors the model used by Professor Tinbergen of the Netherlands in calculating demand.

### Educational Capabilities

#### General:

Columbia University. Teachers College. Teachers for East Africa. "The Shortage of Teachers in East Africa: Causes, Extent and Plans for Alleviation," by Arthur J. Lewis, chief of party. July 3, 1963. 22 p. (Mimeographed.) \*

A thorough and detailed analysis of past and projected enrollments of East African schools. Includes estimates of needs for teachers and recommendations.

Hunter, Guy. Education for a Developing Region: A Study in East Africa. London, England: George Allen and Unwin, Ltd., 1963. 119 p. \*

One of the best studies of both the manpower requirements for East Africa and the ways in which education can best be related to manpower needs. Hunter was at a disadvantage in assessing quantitative needs since no manpower surveys had been completed in these countries at the time; nonetheless, this study is extremely useful.

Moore, Hugh. A Careers Guide for East Africa. Glasgow, Scotland: Messrs. Collins, 1963.

Gives details of apprenticeships, correspondence and technical courses, scholarships and other awards, and an alphabetical list of career opportunities and government salary scales. Introduction by Sir Bernard de Bunsen, then principal of Makerere University College.

Uganda. Makerere University College. Faculty of Social Studies. East African Institute of Social Research.

"Aid to Education: The Manpower Issues in East Africa," by A. R. Jolly. Kampala, Uganda: East African Institute of Social Research, June 10, 1964. 8 p. + tables. (Economic Development Research Project, No. 33.) (Mimeographed.) \*

An analysis of some basic considerations in calculating educational needs. Points out that the need is greater at the intermediate level than at the highest level and assumes that this need will become even greater in the future.

United States. Department of State. Bureau of Educational and Cultural Affairs. Office of U.S. Programs and Services. [Mission to Sub-Sahara Africa.] "Report on a Mission to Liberia, Ghana, Nigeria, Uganda, and Kenya, July 1 - August 20, 1964," by William H. Strain, and "Educational Observations in Sub-Sahara Africa, 1964," by Virgil Lougheed. Washington, D.C.: Bureau of Educational and Cultural Affairs, October, 1964. 35 p. and 28 p. (Mimeographed.) \*

Observations on the educational systems of the countries visited during the two-month mission. Includes recommendations for the exchange of persons program on selection, orientation, and placement procedures.

Weeks, Sheldon G. "Divergence in Educational Development: The Case of Kenya and Uganda." Cambridge, Massachusetts: Center for Studies in Education and Development, Harvard University, 1965. 30 p. (Mimeographed.) \*

An interesting analysis of the historical evolution of educational systems in similar countries, noting significant differences among them.

#### Institutions and Programs:

Kenya. The Royal College, Nairobi. Department of Mechanical Engineering. "Engineering Education in East Africa," by C. A. Judson. Nairobi, Kenya: Department of Mechanical Engineering, The Royal College, March 12, 1964. 10 p. (Mimeographed.) \*

Examines the present position of engineering education in East Africa and the three levels of technical training; makes proposals to improve training.

---

The Royal College, Nairobi. Office of the Registrar. "Student Distribution (Course, Race, Sex, Territory) at 26 October 1964." Nairobi, Kenya: Office of the Registrar, The Royal College, 1964. [Chart, filled in by hand.] \*

\_\_\_\_\_. The Royal College, Nairobi. University Extra-Mural Studies Committee. "A Certificate of Adult Studies (A Revised Memorandum)." Nairobi, Kenya: The Royal College, n.d. 3 p. (Mimeographed.) \*

Describes adult education in East Africa and makes recommendations regarding standards for awarding a certificate of adult studies.

\_\_\_\_\_. University College, Nairobi. College of Social Studies. Department of Residential Adult Education. "Progress Conference, 7 May 1964 - Report," by Paul Fordham. Nairobi, Kenya: College of Social Studies, University College, Nairobi, May 23, 1964. 5 p. (Mimeographed.) \*

Report of a conference convened shortly after the College of Social Studies became part of the University College to examine the college's contribution to adult education in Kenya. Describes proposed curriculum changes under which a certificate of adult studies would be granted to those students who do well but not well enough to gain Mature Age entry into the regular degree course of the University College.

\_\_\_\_\_. University College, Nairobi. Veterinary Advisory Committee; B. M. Gecaga, chairman. "Report to University Development Committee of the Veterinary Advisory Committee." Nairobi, Kenya: University College, October 9, 1964. v.p. (Mimeographed.) \*

Investigates the needs for veterinarians in East Africa and makes specific recommendations about curriculum, enrollment, staffing and financial requirements, particularly with reference to external aid.

Lewis, Arthur J. and L. V. Lieb, eds. "A Report of the Conference on Institutes of Education, January 27, 1964 - January 30, 1964, Mombasa, Kenya, East Africa." Nairobi, Kenya: March, 1964. 99 p. (Mimeographed.) \*

The Mombasa conference was called to examine the need for and development of institutes of education in the three East African countries. Although this report is brief, the appendices are of great interest and include reports by Professor Castle (author of the Uganda Education Commission report) and proposals by the Ministries of Education and professors of education in the various countries.

Nyerere, Julius K. "Future of the University of East Africa." Memorandum. April, 1965.

An excellent statement of the Tanzanian government's position with respect to the difficulties within the University of East Africa as of April 1965.

**Tanzania.** University College, Dar es Salaam. Academic Board. Sub-Committee on Methods of Financing University Students. "Report of the Sub-Committee on Methods of Financing University Students." Dar es Salaam, Tanzania: Academic Board, University College, January 7, 1964. 3 p. (Academic Board Paper A.B. 5.1) (Mimeographed.) \*

Reviews the possibilities of loan schemes as a means of supporting students in the University College, Dar es Salaam.

\_\_\_\_\_. University College, Dar es Salaam. Institute of Public Administration. "Draft Estimates, Prepared by the Director." Dar es Salaam, Tanzania: Institute of Public Administration, University College, 1964. 7 p. (Mimeographed.) \*

Gives estimates for staffing and financing for the institute during 1963-69.

**Uganda.** Makerere University College. Faculty of Social Studies. East African Institute of Social Research. ["The East African Institute of Social Research;" a description.] Kampala, Uganda: East African Institute of Social Research, April 21, 1964. v.p. (Mimeographed.) \*

A description of the organization of the institute and its work in development planning and research. Includes lists of available publications and studies in progress (as of 1962-64).

\_\_\_\_\_. Makerere University College. Faculty of Social Studies. East African Institute of Social Research. "Proceedings of the EAISR Conference, January 1964." Kampala, Uganda: East African Institute of Social Research, January, 1964. 5 parts (A - E); Part B: Education. 9, 16, 16, 7, 7, 17, 11 p. (Mimeographed.) \*

Contains five papers presented at the conference, held at the institute in December 1963. Three papers deal with the Ugandan educational system and school-leavers; the two others cover screening of candidates for the Teachers for East Africa program and a comparison of American and East African attitudes toward teachers.

**University of East Africa.** Provisional Council. "Report of a Conference on the University of East Africa, Villa

Serbelloni, Bellagio, Italy, 21st to 25th October, 1963." Entebbe, Uganda: Provisional Council, University of East Africa, 1963. 91 p. (Mimeographed.) \*

This meeting was historically important to the University of East Africa triennium development plan. Commitments were made by major external donors and the constituent colleges to the university's development program for the three-year plan period.

---

. Provisional Council. "University of East Africa: Draft University Development Plan for the Triennium 1964-67." Entebbe, Uganda: Provisional Council, University of East Africa, August 29, 1963. 72 p. + tables. (Mimeographed.) \*

An extremely thorough study of the university; the soundest plan for the years covered, based on financial needs and abilities.

---

. Provisional Council. Committee on Needs and Priorities; Davidson Nicol, chairman. Report of the Committee on Needs and Priorities, 1962. Entebbe, Uganda: Government Printer, 1963. 122 p. \*

A thorough analysis of the university's needs by a high-level committee; utilized in the three-year development plan.

---

. Provisional Council. The Economy Commission; Sir Edward Hale, chairman. "The University of East Africa: Report of the Economy Commission, 1963." Kampala, Uganda: December 20, 1963. 41 p. + appendices. (Mimeographed.) \*

Prepared after the Como conference to see if greater economy could be achieved in running the university.

---

. University Development Committee. [ "Report on Capital Development." ] Entebbe, Uganda: 1964. v.p. (Mimeographed.) \*

A draft report by the committee; contains capital estimates for the three constituent colleges.

---

. University Grants Committee; A. L. P. Norrington, chairman. Report of the University Grants Committee, 1964. Entebbe, Uganda: 1964. 18 p. \*

The successor to the reports of the Committee on Needs and Priorities, the Como conference, the Economy Commission, and the University development plan. Makes recommendations about the allocations that the three governments and the East African Common Services Organization should make to the university.

\_\_\_\_\_. Working Party [on Standards of Entry and Graduation]; H. Creaser, chairman. "Entrance Levels and Degree Structure Report, 1964." Kampala, Uganda: 1964. 71 p. + tables. (Mimeographed.) \*

Discusses the projected supply of secondary school-leavers in East Africa, the capacity of the university, and the selection process. Recommends minor changes in entrance requirements. Contains useful appendices, including statistical tabulations and projections of enrollments prepared by E. F. Sheffield of the Canadian Universities Foundation.

## II. KENYA

### National Development

International Bank for Reconstruction and Development. Economic Survey Mission to Kenya; Edmond H. Leavey, chief of mission. The Economic Development of Kenya. Report of a mission organized by the International Bank for Reconstruction and Development at the request of the governments of Kenya and the United Kingdom. Baltimore, Maryland: The Johns Hopkins Press for the International Bank for Reconstruction and Development, 1963. 368 p. \*

Kenya. Sessional Paper No. 1 of 1963: Observations on the Report of an Economic Survey Mission from the International Bank for Reconstruction and Development. Nairobi, Kenya: Government Printer, 1963. 20 p. \*

This so-called white paper represents the response of the Kenya government to the IBRD survey and analyzes the IBRD's recommendations in detail.

\_\_\_\_\_. Ministry of Finance and Economic Planning. Development Estimates for the Year 1964-1965. Nairobi, Kenya: Government Printer, 1964. 60 p. \*

Estimates expenditures and sources of capital for the year 1964-1965. Refers to capital rather than recurrent expenses.

\_\_\_\_\_. Ministry of Finance and Economic Planning. Development Plan for the Period from 1st July 1964, to 30th June, 1970. Nairobi, Kenya: Government Printer, 1964. 137 p. \*

Although currently being revised, the plan still offers the most recent estimates in most sectors, except education, which is included in the 1965 manpower survey.

\_\_\_\_\_. Ministry of Finance and Economic Planning. 1964-65 Estimates of Recurrent Expenditure of the Government of Kenya for the Year Ending 30th June, 1965. Nairobi, Kenya: Government Printer, 1964. 90 p. \*

Contains estimates of recurrent costs of the government, broken down in great detail for the various departments, ministries, and agencies; issued annually.

\_\_\_\_\_ . The Treasury. Economic Survey, 1964. Prepared by the Economics and Statistics Division. Nairobi, Kenya: Government Printer, May, 1964. 59 p. \*

An excellent overview of the major sectors of the Kenyan economy, including a short chapter on education. Concludes with a brief analysis of the coming year.

United Nations Technical Assistance Board. Expanded Programme for Technical Assistance. [Proposed 1965-1966 Program for Kenya.] "Annex I: Category I Summary Sheet." Paris, France: UNTAB, 1964. 4 p. (Mimeographed.) \*

Estimates the costs of projects to be undertaken, the number of "experts" to be sent to Kenya, and the number of "fellows" (Africans) to be sent abroad for training in these projects. Despite limitations, the report indicates the involvement of the United Nations Technical Assistance Board.

### Manpower Studies

Kenya. (Colony and Protectorate of.) Establishment Division. Localisation and Training of the Kenya Civil Service, Interim Report [No. 1]. Nairobi, Kenya: Government Printer, November 10, 1960. 15 p. + appendices. \*

\_\_\_\_\_ . (Colony and Protectorate of.) Service and Training Branch. Office of the Chief Secretary. Localisation and Training of the Kenya Civil Service, Interim Report No. 2 - September, 1961. Nairobi, Kenya: Government Printer, September, 1961. \*

Detailed analyses of the Civil Service. Interesting for historical and research purposes in giving an account of every established position in the civil service in the years prior to independence.

\_\_\_\_\_ . Directorate of Personnel. "Utilisation of Manpower in the Kenya Public Service." Prepared by John L. Thurston, consultant for the Ford Foundation to the government of Kenya. Nairobi, Kenya: Directorate of Personnel, November 22, 1963. 17 p. (Mimeographed.) \*

The first manpower study undertaken, prior to compilation of adequate data. Now superseded by the Davis survey.

\_\_\_\_\_ . Ministry of Economic Planning and Development. "High-Level Manpower Requirements and Resources in Kenya;

1964-1970." Prepared under the direction of Calvin F. Davis, consultant for the Ford Foundation to the government of Kenya. Nairobi, Kenya: Ministry of Economic Planning and Development, May, 1965. 37 p. + tables. (Mimeographed.) \*

A comprehensive survey; the most current source for projected manpower demands and estimated educational output. Now being used in the preparation of plans for further educational development, although some of its estimates, particularly in the agricultural sector, must be used cautiously.

United Nations Educational, Scientific and Cultural Organization. "Report on Middle Grade Officials in Africa: Kenya." Prepared by Derek T. Healey. Paris, France: UNESCO, April 1, 1964. 11 p. (WS/0364.291 SS) (Mimeographed.) \*

Prepared in April 1964; uses outdated statistics in analyzing the composition of Kenya's occupational distribution and the school enrollment. The report draws heavily on Roche's study of Kenya and national education; is of limited value.

### Educational Capabilities

#### General:

Kenya. Kenya Education Commission; Simeon H. Ominde, chairman. Kenya Education Commission Report, Part I. Nairobi, Kenya: Government Printer, December 12, 1964. 166 p. \*

The first part of a comprehensive study of educational development and future plans, covering general problems of primary, secondary, adult, technical, and commercial education, with special attention to teachers and primary school-leavers. Includes 160 substantive recommendations. The second part of the report, expected sometime in 1965, will translate the recommendations into more specific plans, based upon the recent manpower survey and an analysis of costs and available resources.

---

. Ministry of Education. "A Working Paper on the Supply of Secondary Teachers, 1965-70, Second Draft," by Ernest Stabler. Nairobi, Kenya: Ministry of Education, October 12, 1964. 7 p. (Mimeographed.) \*

This report by the planning officer in the Ministry of Education, under Ford Foundation auspices, forecasts both the needs and the supply of secondary teachers for

Kenya. Stabler concludes that the supply will be met quantitatively, but that the percentage of university graduates will be far too low for qualitative results. Includes recommendations for recruiting graduates both at home and overseas.

Mwendwa, E. N. "Speech by [the] Minister for Labour and Social Services to the Progress Conference, College of Social Studies." Nairobi, Kenya: College of Social Studies, University College, May 7, 1964. 2 p. (Mimeographed.) \*

Describes the concerns of the government for adult education and the proposed Board of Adult Education that will be set up to oversee literacy training, formal education, evening and correspondence classes, community development, and in-service training.

Programs and Institutions:

Kenya. Kenya Institute of Education. "The Development of Teacher Training in Kenya." Nairobi, Kenya: Kenya Institute of Education, 1964. v.p. (Mimeographed.) \*

An extremely detailed and thorough analysis of the development of the teacher training colleges at the various levels; also estimates the supply of teachers in Kenya for the next few years.

\_\_\_\_\_. Kenya Polytechnic Institute. "Proposals for the Future Expansion of the Kenya Polytechnic." Nairobi, Kenya: Kenya Polytechnic Institute, 1963. 9 p. (Circular no. 185/63) (Mimeographed.) \*

A detailed analysis of the accommodations of the institute and projections of the needs for expansion. This was presented to USAID in application for a loan.

\_\_\_\_\_. Kenya Polytechnic Institute. Office of the Registrar. "Kenya Polytechnic: First Term [Enrollments], 1965." Nairobi, Kenya: Kenya Polytechnic Institute, February 10, 1965. 3 p. (Circular no. 18/65) (Mimeographed.) \*

\_\_\_\_\_. Kenya School of Law. "Training for the Legal Profession in Kenya." Nairobi, Kenya: Kenya School of Law, December 13, 1963. 2 p. (Mimeographed.) \*

A brief description of the School of Law in Kenya, which at the moment is not affiliated with the formal education system or the university.

\_\_\_\_\_. Kenyatta College. Teacher Training Division. "Development: 1965-1970." Kenya: Teacher Training Division,

**AIRGRAM**

**DEPARTMENT OF STATE**

168A

UNCLASSIFIED  
CLASSIFICATION

For each address check one ACTION INFO  
INTERNATIONAL DEVELOPMENT

DATE REC'D.
1966 FEB 5 AM 11 42
CABLE & AIRGRAM BRANCH
DATE SENT Jan. 26, 1966

TO . AID/W TOAID A- 277

FROM . KAMPALA  
SUBJECT . Education & World Affairs' Report  
REFERENCE . AIDTO Circ. XA-520

DISTRIBUTION  
ACTION  
INFO.  
Ter

Expect  
W

1. Before commenting on the recommendations made in subject report, we wish to make the following observations:

Page 7 - Figures for Makerere U.C. are not correct. Table at the top of the page should read:

	<u>63-64</u>	<u>64-65</u>	<u>65-66</u>	<u>66-67</u>
Makerere U.C.	882	1127	1307	1705

Page 8 - Line 13

Add: ... Morogoro in Tanzania, and  
the Bukalasa and Arapai Agricultural Colleges and the Entebbe  
Veterinary Training Institute in Uganda, to coordinate .....

Page 9 - Line 14

..... courses of several weeks (5) duration .....

Page 115 - Line 15

.... In 1963 about 14 per cent of the national budget was allocated for education ....

NOTE: It would have been well to report the latest figure for the following categories, i.e.,

In 1965 about 14% of the recurrent budget and 17% of the development budget for education .....

OTHER AGENCY  
State

PAGE	PAGES
1	3
OF	

DRAFTED BY FVSaporito:cak	OFFICE TRAINING	PHONE NO.	DATE 1/26/66	APPROVED BY Will Muller: Director
------------------------------	--------------------	-----------	-----------------	--------------------------------------

AID AND OTHER CLEARANCES  
NGMasen, F&A (in draft) *STH*  
EHTrethaway, EDUC (in draft) *STH*  
WSLefes, PROG (in draft) *STH*

UNCLASSIFIED  
CLASSIFICATION

Page 122 - last sentence

..... The response of the Ugandan government to offers of AID assistance has so far been cool.

NOTE: This is not a true statement. The truth of the matter is that A.I.D. dragged its feet in approving this project. A ProAg was finally signed on 6-30-65.

Page 123 - Table 7

These figures do not correlate with the figures given in the table at the top of page 7.

Page 128 - Table 10

What happened to the first part of Table 10?

2. Comments on Conclusions and Recommendations -

E. A. Regional Issues -

Pages 134 thru 144.

Too much emphasis on what A.I.D. should do to assist the E. A. Governments. The E. & WA Study Committee gives the impression that A.I.D. should tackle all the E.A. problems single-handedly. Have they intentionally neglected to consider other donor agencies?

3. Comments on Recommendations for Uganda - Pages 152 thru 155

Para. 3 - Page 152

Assumption 1 - It is the Mission's opinion that more is being done by the G.O.U. in manpower planning, in general, and in educational planning, in particular, than reported by the E & WA Study Committee. Please refer to TOAID A-211 of 1-19-66 "Manpower Surveys & Studies".

Assumption 2 - This is being done.

Assumption 3 - The G.O.U. is conscious of these problems.

Priorities in Manpower Development - There seems to be some confusion here as to the order of priorities.

Top priority should be assigned to meeting Uganda's needs for middle-level manpower - "greatest shortage" versus

High priority should be assigned to meeting the needs for high-level manpower.

Page 153 - lines 1 thru 3

USAID/Uganda's program is concentrated in this area.

168c

Recommendations

1. Assistance to Manpower Planning

The GOU has not asked USAID for assistance in manpower planning. Further, the GOU has not accepted Ford Foundation's offer of assistance in this area. USAID is, however, offering participant training in the U.S. for selected officers in the Planning, Training and Establishments Division of the GOU.

2. Assistance to Educational Planning

The GOU turned down USAID's offer for an American planning adviser in the Ministry of Education. *S.O.P. for most ex-British areas.*

Page 154 - lines 1 thru 6

This paragraph does not seem to be in harmony with Assumption #1 on page 152.

Item 3 - line 9 - should read:

... Institute at Entebbe and the Arapai and Bukalasa Agricultural Colleges ...

Page 154 - Item 5

USAID recommends deletion of the word "particularly" in line 2. It is USAID's opinion that Ugandans go to U.S. for undergraduate study only in fields not available at the U.E.A.

Page 155 - Item 5 (Continued)

USAID recommends deletion of the word "ultimately" in line 6; and that the word "gradually" in line 7 be deleted and substituted by the words "and out".

CROMWELL

**Kenyatta College, 1965. 3 p. (Mimeographed.) \***

**Includes the proposed enrollment, classes, staff, and estimated finances for the college, which is located on the former British Army base, Kahawa, outside of Nairobi.**

**Overseas Study**

**[Adagala, Solomon.] Office of the Kenya students adviser.**

**"Kenya Students in the U.S.A. and Canada as of 1st March, 1965." A tentative list compiled by the Kenya students adviser in New York City. New York, New York: Office of the Kenya Students Adviser, 1965. 120 p. + addenda. (Mimeographed.) \***

**Institute of International Education. Open Doors, 1965: Report on International Exchange. New York, New York: Institute of International Education, June, 1965. 64 p. (Issued annually.) \***

**The most recent statistics on foreign students in the United States. Annual reports from 1960-1965 were used in this study.**

### III. TANZANIA

#### National Development

International Bank for Reconstruction and Development. Economic Survey Mission to Tanganyika; William E. Stevenson, chief of mission. The Economic Development of Tanganyika. Baltimore, Maryland: The Johns Hopkins Press for the International Bank for Reconstruction and Development, 1963. 531 p.\*

An excellent survey of the economic background and national resources available for future development; done at the request of the governments of Tanganyika and the United Kingdom. Includes recommendations for Tanganyika's future development.

Nyerere, Julius K. "Address by [the] President, Mwalimu Julius K. Nyerere, to Parliament - 12/5/64." Dar es Salaam, Tanganyika: Tanganyika Information Services, Ministry of Information and Tourism, May 12, 1964. 17 p. (Mimeographed.)\*

An excellent defense of the new development plan and statement of government policies for its implementation.

Syracuse University. Maxwell Center for the Study of Overseas Operations. Program of East African Studies. "Research Design for Intensive Study of National Planning in Tanganyika," by Fred G. Burke. Syracuse, New York: Maxwell Center for the Study of Overseas Operations, Syracuse University, July, 1964. 75 p. (Mimeographed.)\*

Overview of the relationship between culture and planning in Tanganyika: successor to the preliminary survey of 1962 (see below). Includes proposals for research studies that can be undertaken in the country.

---

Maxwell School of Public Administration and Citizenship. "Draft, Tanganyika -- National Planning, A Preliminary Survey," by Fred G. Burke. Prepared in connection with the Cross-Cultural Study of National Economic Planning. Syracuse, New York: Maxwell School of Public Administration and Citizenship, Syracuse University, March 15, 1962. 87 p. (Mimeographed.)\*

A thorough survey of the background, status, and future outlook (as of 1962) of planning on a national scale in Tanganyika.

Tanganyika. Ministry of Finance. Budget Survey, 1964-65.  
Dar es Salaam, Tanganyika: Government Printer, 1964.  
20 p. \*

Includes background on the economy and analysis of recurrent and capital expenditures.

---

. (United Republic of, and Zanzibar). Ministry of Finance. Estimates of the Expenditure of the United Republic of Tanganyika and Zanzibar for the Year from 1st July, 1964 to 30th June, 1965, As Submitted to the National Assembly. Dar es Salaam, Tanganyika: Government Printer, 1964. 2 vols. 64 p. + appendices, and 244 p. \*

Gives detailed breakdown of all expenses for the 1964-65 fiscal year.

---

. (United Republic of, and Zanzibar). Ministry of Finance. Financial Statement and Estimates of Revenue of the United Republic of Tanganyika and Zanzibar for the Year from 1st July, 1964 to 30 June, 1965, As Submitted to the National Assembly. Dar es Salaam, Tanganyika: Government Printer, 1964. 11 p. \*

Contains estimates of expenditure, proposed changes in taxation, and a summary of revenue.

---

. (United Republic of, and Zanzibar). Ministry of Finance. Speech by the Honorable the Minister for Finance Introducing the Estimates of Revenue and Expenditure, 1964-65 to the National Assembly, on 16th June, 1964. Dar es Salaam, Tanganyika: Government Printer, 1964. 16 p. \*

Indicates the government policy and rationale behind the estimates.

---

. (United Republic of, and Zanzibar). Directorate of Development and Planning. Tanganyika Five-Year Plan for Economic and Social Development, 1st July, 1964-30th June, 1969. Dar es Salaam, Tanganyika: Government Printer, 1964. 2 vols. 114 and 151 p. \*

The first volume includes general analysis of the development plan; the second volume covers the plan programs. This plan is the basis for educational planning and for the manpower survey recently completed under the direction of Robert Thomas.

United Nations. Economic and Social Council. Committee for Industrial Development. "Questionnaire on Industrial Planning and Development: Reply of the Government of Tanganyika." New York, New York: Economic and Social Council, United Nations, March 1, 1963. 9 p. (E/C.5/24/Add.11) (Mimeographed.) \*

Contains data on the organizational pattern of development planning (as of 1963).

### Manpower Studies

Tanganyika. Ministry of Development Planning. "Development Planning Related to the Needs of Children in Tanganyika," [by Robert Thomas and George Tobias]. Dar es Salaam, Tanganyika: Ministry of Development Planning, 1964. 16 p. (Mimeographed.) \*

This was submitted to UNICEF as part of the Como conference held in April 1964.

---

. Ministry of Development Planning. Manpower Planning Unit. "Report to the President: Manpower Problems and Programs for Solving Them (1963)." Dar es Salaam, Tanganyika: Manpower Planning Unit, 1963. 23 p. (Mimeographed.) \*

Done under the direction of Robert Thomas, manpower adviser to Tanganyika. Describes the background of manpower planning in Tanganyika and suggests ways in which appropriate machinery can be set up and properly utilized.

---

. Ministry of Education. "Human Resources and Manpower Planning in Tanganyika," by J[ohn] L. Thurston. Dar es Salaam, Tanganyika: Ministry of Education, November, 1960. 24 p. (Mimeographed.) \*

Done before substantive material was available in Tanganyika; primarily discusses the way in which future manpower surveys and planning could be conducted.

Ministry of Health and Labour. Labour Division.  
High-Level Manpower Requirements and Resources in  
Tanganyika, 1962-1967, Together with a Government  
Statement on the Report. Report prepared by George Tobias,  
consultant for the Ford Foundation to the government of  
Tanganyika. Dar es Salaam, Tanganyika: Government  
Printer, 1963. 65 p. (Government Paper No. 2 of 1963.) \*

The first actual manpower survey of Tanganyika,  
with specific recommendations for developing national  
machinery to utilize human resources. The Tobias report  
was the basis of present manpower policy in Tanzania.  
The government white paper on this report is included  
here.

Second Vice-President's Office. Central Establishment  
Division. Africanisation of the Civil Service: Annual  
Report, 1963. Dar es Salaam, Tanganyika: Government  
Printer, 1964. 96 p. \*

An analysis of the personnel needs of various  
government departments. Describes steps being taken by  
the government to allocate secondary school-leavers,  
control scholarships, and bond teachers, as well as  
other programs to train personnel.

Tanzania (United Republic of). Office of the President.  
Directorate of Development and Planning. "Survey of the  
High-Level Manpower Requirements and Resources for the  
Five-Year Development Plan, 1964-65 to 1968-69, United  
Republic of Tanzania." Prepared by the Manpower Planning  
Unit under the direction of Robert L. Thomas, the Ford  
Foundation manpower adviser to the directorate. Dar es  
Salaam, Tanzania: Directorate of Development and Plan-  
ning, 1964. 16 p. + tables and appendices. (Mimeographed)\*

### Educational Capabilities

#### General:

Tanganyika. Establishments Division. "Allocation of Tanganyika  
Secondary School Leavers." Dar es Salaam, Tanganyika:  
Establishments Division, July 22, 1964. 2 p. + appendices.  
(Circular Saving Telegram; Saving No. EB.9/53/236)  
(Mimeographed.)\*

Describes the proposed means of allocating sec-  
ondary school-leavers according to manpower priorities so

that some go to the University College to study in certain fields, others attend intermediate-level institutions, and the remainder join the labor force directly.

---

. Ministry of Education. Annual Report of the Ministry of Education, 1962. Dar es Salaam, Tanganyika: Government Printer, 1964. 19 p. \*

Gives statistics and considerable detail on the organization, goals, and progress of education in Tanganyika (as of 1962). No more recent reports available, as of March 1965.

Tanzania (United Republic of). Office of the President. Directorate for Development and Planning. Manpower Planning Unit. Careers for Nation Building: A Careers Guidebook for Secondary School Students. Dar es Salaam, Tanzania: Government Printer, 1964. 135 p. \*

Prepared under the direction of Robert Thomas as part of the program to utilize human resources, currently underway in Tanzania.

United Nations Educational, Scientific and Cultural Organization. "Report of UNESCO Educational Planning Mission for Tanganyika, June to October 1962." Paris, France: UNESCO, January 31, 1963. 109 p. (WS/1262.136) (Mimeographed.) \*

A thorough survey of the educational system, past and present. Describes and analyses the enrollment, content, and future outlook for education in Tanganyika.

#### Programs and Institutions:

International Labour Office. Regular Programme of Technical Assistance. "Report on Workers' Education in Tanganyika." Geneva, Switzerland: I.L.O., 1962. 24 p. (ILO/OTA/Tanganyika/R.2) (Mimeographed.)\*

Report of I.L.O.'s consultant Mark Starr, who advised and assisted the Tanganyikan Federation of Labour in 1961-62. Describes some training programs undertaken in Tanganyika at the lower level of trade and craft skills during 1962.

**Tanganyika. Dar es Salaam School of Medicine. "Dar es Salaam School of Medicine." Dar es Salaam, Tanganyika: School of Medicine, 1964. 4 p. (Mimeographed.) \***

Describes the medical school that was set up in April 1963 with the assistance of the Rockefeller Foundation. Not degree-granting or affiliated with the University of East Africa.

### Overseas Study

**Institute of International Education. Open Doors, 1965: Report on International Exchange. New York, New York: Institute of International Education, June, 1965. 64 p. (Issued annually.)\***

The most recent statistics on foreign students in the United States.

**Tanganyika. Establishments Division. "Visit of Tanganyika Guidance Team to North America." Dar es Salaam, Tanganyika: Establishments Division, July 18, 1963. v.p. (Saving No. EB.9/53/251) (Mimeographed.)\***

A description of the trip made in 1963 by a group from Tanganyika to help recover students overseas; financed by the Ford Foundation and administered by IIE. Includes suggestions on how to make recovery more effective.

---

**. Ministry of Education. Overseas Students Section. List of Post-Secondary Students Studying Outside the Country and at the University College, Dar es Salaam, 1962-63. Dar es Salaam, Tanganyika: Government Printer for the Vice-President's Office, 1963. 60 p. \***

This registry of students overseas is a significant achievement. As of 1964 no other African country had such a list. Students are listed by name, field, country of study, and estimated year of return.

#### IV. UGANDA

##### National Development

International Bank for Reconstruction and Development. Economic Survey Mission to Uganda; Edward S. Mason, mission chief. The Economic Development of Uganda. Report of a mission organized by the International Bank for Reconstruction and Development at the request of the government of Uganda. Baltimore, Maryland: The Johns Hopkins Press for the International Bank for Reconstruction and Development, 1962. 462 p. \*

A very good summary of the background and situation of Uganda's economy as of 1961. The chapter on the structure and development of the economy is excellent and the treatment of agriculture is extremely thorough. Chapter on education and manpower describes objectives and the structure of the present system and makes proposals.

Uganda. Makerere University College. Faculty of Social Studies. East African Institute of Social Research. "Development Goals for the Uganda Economy in 1981," by P. Clark and B. Van Arkadie. Kampala, Uganda: East African Institute of Social Research, July 29, 1964. 11 p. + tables. (Economic Development Research Project, paper no. 42.) (mimeographed.) \*

A feasibility study prepared for use in the government of Uganda, forecasting the implications of the long-range development plans with regard to gross domestic product, capital formation, employment by various sectors, and per capita income. One of the few documents that realistically tries to forecast Uganda's growth.

---

. Makerere University College. Faculty of Social Studies. East African Institute of Social Research. "Minimum Wages in Uganda: Comments by P. Clark, A. Baryaraha, E. Rado, and B. Van Arkadie for the Minimum Wages Advisory Board." Kampala, Uganda: East African Institute of Social Research, October 19, 1964. 17 p. (Economic Development Research Project, paper no. 49.) (Mimeographed.) \*

Includes data on private industry, public service, wages, cost of living, and employment for Uganda as of 1964.

---

. Makerere University College. Faculty of Social Studies. East African Institute of Social Research. "The Real

**Income of Uganda -- 1954-1962,"** by E. R. Rado. Kampala, Uganda: East African Institute of Social Research, July 21, 1964. 11 p. (Economic Development Research Project, paper no. 40.) (Mimeographed.) \*

Examines the growth of real income by allowing for changes in the purchasing power of funds.

**Uganda. Ministry of Finance. Background to the Budget, 1964-65.** Prepared by the Statistics Division. Entebbe, Uganda: Government Printer, May, 1964. 44 p. \*

Gives general background on Uganda, and examines the situation in primary production, agriculture, livestock and fisheries, industrial production, trade, export and import balances, employment, wages, and public and private finance.

---

**. Ministry of Finance. Draft Estimates of Development Expenditure, 1964-65, for the Year Ending on the 30th June, 1965, As Submitted to the National Assembly.**

Entebbe, Uganda: Government Printer, 1964. 37 p. \*

Gives detail on the estimated capital to be made available during the fiscal year ending June 1965.

---

**. Ministry of Finance. Estimates of Development Expenditure, 1964-65, for the Year Ending on the 30th June, 1965, Approved by the National Assembly.** Entebbe, Uganda:

Government Printer, 1964. 37 p. \*

---

**. Ministry of Finance. Estimates of Expenditure, 1963-64, for the Year Ending on the 30th June, 1964, As Passed by the National Assembly.** Entebbe, Uganda: Government Printer, 1963. 137 p. \*

A detailed breakdown of the recurrent expenditures of the various ministries and departments of the government for the fiscal year ending June 30, 1964.

---

**. Ministry of Finance. Financial Statement and Revenue Estimates, 1964-65, for the Year Ending on the 30th June, 1965.** Entebbe, Uganda: Government Printer, 1964. 8 p. \*

Gives the estimated income for the country for the past fiscal year.

---

**. Ministry of Finance. Financial Summary and Revenue Estimates, 1963-64, for the Year Ending on the 30th June, 1964.** Entebbe, Uganda: Government Printer, 1963. 11 p. \*

Gives the actual expenditures for the year ending June 1964.

\_\_\_\_\_. Office of the Prime Minister. Economic Planning and Statistics Division. The First Five-Year Development Plan, 1961-62 to 1965-66: A Plan for Development in the Public Sector and an Estimate of Private Sector Investment During the Period 1st July, 1961 to 30th June, 1966.

Entebbe, Uganda: Government Printer, 1961. 113 p. \*

This plan has been considerably changed in every sector since its formulation.

### Manpower Studies

Interview with N. Bennett, economist placed in the Ministry of Planning and Community Development by the Overseas Development Institute, March 1965.

Mr. Bennett's estimates of present manpower stocks and projections of future needs and supply have been outlined in the EWA Uganda report.

Overseas Development Institute Ltd. "Education in Uganda: Progress and Problems," draft, by Peter R. C. Williams. London, England: Overseas Development Institute, May, 1965. 3, 23, 18, 8, 28, 12 p. (STUD/25) (Mimeographed.) \*

Soon to be published by the Overseas Development Institute in London; will include the most recent, comprehensive statistics and analysis of past, present and projected developments in Ugandan education. The primary focus of this report is on external donors and aid as an investment.

Uganda. Ministry of Education and Labour. "Report on the survey of Manpower and Training, Uganda Protectorate, British East Africa, July-October, 1959." Prepared by the Ford Foundation in cooperation with the Ugandan Ministry of Education and Labour, Robert L. Thomas, consultant. Entebbe, Uganda: Ministry of Education and Labour, 1959. v.p. (Mimeographed.) \*

The survey was never widely circulated, probably because Thomas was highly critical of the expensive trade schools which the British government had set up as a part of its basic policy. The manpower survey indicated that these schools were not only very expensive and hard to staff and equip but that the products of the schools were not easily employed.

---

. Office of the Prime Minister. Establishments Branch.  
Quarterly Establishment Return: Composition of the Uganda  
Public Service. [ Covers the period ending September 30,  
1964. ] Entebbe, Uganda: Government Printer, 1964.  
97 p. \*

A detailed breakdown of the civil service as of September 1964 by race, and by level of occupation for each of the various ministries in the government; probably not published regularly.

---

. Office of the Prime Minister. Statistics Division.  
1963 Statistical Abstract. Entebbe, Uganda: Government  
Printer, 1963. 108 p. \*

Gives a detailed statistical analysis of a wide range of topics, including the land, population, migration, trade, transport, agriculture, industry, currency, finance, education, and employment.

### Educational Capabilities

#### General:

Jolly, Richard and Rado, Emil. "Education in Uganda: Reflections on the Report of the Uganda Education Commission." Draft of a review article. Kampala, Uganda: Makerere University College, n.d. 9 p. \*

A review of the Castle report examining its implications for educational policy in Uganda.

Uganda. Ministry of Education. "Statistical Tables, 1963." Kampala, Uganda: Ministry of Education, 1963. n.p. (Mimeographed.) \*

Breaks down teacher qualifications and student enrollments by age, teacher preparation, numbers of pupils, districts, regions, school, and age group.

---

. Ministry of Education. "Teachers' Salary Revision, July, 1964." Kampala, Uganda: Ministry of Education, June 27, 1964. 3 p. + appendices. (Circular no. 39 of 1964.) (Mimeographed.) \*

Describes in detail the salary schedule of primary teachers in Uganda according to the levels of teachers.

---

. Uganda Education Commission; E. B. Castle, chairman.  
Education in Uganda: The Report of the Uganda Education

Commission, 1963. Entebbe, Uganda: Government Printer, 1963. 92 p. \*

The "Castle Report," a milestone in the history of education in Uganda, was the report of a commission appointed by the Minister of Education in January to examine the approved recommendations of the World Bank Survey with regard to Uganda's financial situation and future manpower needs. The report is a careful study of both the World Bank's recommendations and the country's ability to carry them out and has formed the basis of subsequent policy.

**United States.** Department of Health, Education, and Welfare. Office of Education. Education in Uganda, by David Scanlon. Washington, D.C.: Government Printing Office, 1964. 115 p. (Bulletin 1964, No. 32; OE-14103) \*

Contains a wide variety of information on the past history and present system in Uganda. Although the statistics are out of date now, the description of the present school system is extremely accurate.

**Zake, Luyimbazi.** "1964-65 Estimates Policy Speech," by the Minister of Education, July, 1964. Kampala, Uganda: 1964. 9 p. (Mimeographed.) \*

The first statement of the Ministry of Education's new secondary education policy, which as recommended by the Education Commission Report will not differentiate between agricultural, technical, commercial and home economics schools at the secondary level.

### Programs:

"Recommendations on the Setting Up of an Institute of Public Administration in Uganda." Uganda: August 14, 1964. 3, 6, 2, 10, 3, 4 p. [Author unknown; confidential paper.] (Mimeographed.) \*

An investigation of the feasibility of setting up an Institute of Public Administration. Recommends a compromise with regard to the relationship of the IPA and the university.

**Uganda.** Makerere University College. Faculty of Social Sciences. "Reflections on the Report on Entrance Levels and Degree Structure, University of East Africa: A Memorandum to Academic Board." Kampala, Uganda: Faculty of Social Sciences, Makerere University College, 1964. 4 p.

Discusses the Creaser committee's proposals for increasing the number of East African graduates. Is critical of the report's economic analysis and conclusions and proposes alternative measures to increase Ugandan university enrollments without lowering entrance qualifications.

*ms/10*

Overseas Study

Institute of International Education. Open Doors, 1965: Report on International Exchange. New York, New York: Institute of International Education, June, 1965. (Issued annually.)\*

The most recent statistics on foreign students in the United States.

## APPENDIX

### Recommendations of the 1965 Manpower Survey

Because the 1965 manpower survey contains important recommendations with respect to the implementation of its conclusions, these recommendations are summarized below. Most of the recommendations are being initiated by the Kenyan government.

a. Manpower Planning. A manpower unit should be set up in the Ministry of Economic Planning and Development to identify and help to resolve manpower problems. An Economic Trend Report should be issued quarterly by the Ministry of Economic Planning and Development to provide employment data by industrial sector and geographic division.

b. Africanization. The government should define Africanization policies for both the public and private sectors and should ensure that programs are carried out as rapidly as possible without undue loss of efficiency.

c. Education and Training. Educational capabilities should be developed in high-priority fields and students should be guided into these areas. Accordingly, these steps should be taken:

1. Government bursaries should be allocated according to manpower priorities.

2. HSC-holders should study at the University of East Africa, and overseas study should be strictly limited to high-priority fields for which training is not available in East Africa.

3. All students receiving scholarships, bursaries, or loans (including donor scholarships overseas) under the government of Kenya's jurisdiction, must be "bonded" to work for several years in positions chosen by the government.

4. An increasing share of student support in higher education should take the form of loans. Portions of these loans should be remitted in hardship cases and in return for years of service in needed occupations.

5. Secondary schools must offer courses in typing, bookkeeping, stenography, and other office skills because so many Form 4 leavers enter the labor market directly and the estimated shortfall of skilled office workers will be 1,600 by 1970.

e. A Careers Guidebook should be prepared by the proposed manpower unit and distributed to all secondary schools, as has recently been done in Tanzania.

f. Other Incentives. Representatives of the manpower unit, the Directorate of Personnel, the Ministry of Education, the university, and the private sector must meet frequently to examine such incentives as wage and salary schedules, coordination of formal education with in-service training schemes, and means of guiding the flow of manpower into areas of greatest need.