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SUMMARY REPORT

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

**ETHIOPIA, GUINEA, KENYA, LIBERIA, NIGERIA,
SUDAN, TANZANIA, TUNISIA, UGANDA**

Report Number 1

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

August 31, 1965

Summary Report
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Errata

page lines

21 4 - 9

Should read: "Some vocational training centers exist outside the general secondary system in Tunisia and Guinea. An experimental project in Guinea supported by AID and run by the Organization for Rehabilitation through Training promises to provide one alternative solution to the problem of supplying intermediate-level technical manpower."

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SUMMARY REPORT

Report Number 1

FOREWORD

This summary report is submitted in partial fulfillment of USAID Contract AID/afr-198 dated June 2, 1964. Under this contract between July 1964 and March 1965 Education and World Affairs undertook surveys in nine African countries: Ethiopia, Guinea, Kenya, Liberia, Nigeria, Sudan, Tanzania, Tunisia, and Uganda. For each of these countries EWA has submitted to AID a separate report providing data, analysis, and recommendations on the following topics: (1) an assessment of available data concerning high-level manpower needs,¹ (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.

The report which follows summarizes the principal characteristics and developments that have been observed in the nine countries; it also indicates differences among them. The report does not include data and analysis from which its generalizations are derived; these are given in the separate country reports.

¹The term "high-level manpower" has been given different meanings. As used in these reports, it includes two categories: (1) Class A occupations, sometimes identified as senior or cadres supérieurs, which require a university education or its equivalent; and (2) Class B occupations, sometimes called intermediate or cadres moyens, which require two or three years of post-secondary training or the equivalent. Other categories which require less training were not examined closely, although some attention was given to middle-level (Class C or cadres de base) occupations, which require secondary school education or the equivalent.

Selected bibliographies also are included in the country reports.

EWA was requested to "make recommendations concerning the desirable directions of U.S. Government aid" as it relates to institutional development and scholarship assistance. The study committee has responded to this directive in the country reports with observations relating to the directions of assistance in each country and with recommendations concerning specific programs. The recommendations included here are of a more general character and apply to all or most of the nine countries surveyed. These recommendations are placed in the text under the relevant sections rather than in a separate section at the end as was done in the country reports. This summary report reflects the views of the study committee, but because of time pressures, it has not been possible to have each study committee member review the wording of this report.

The study committee has acknowledged elsewhere its appreciation of the assistance of numerous individuals whose advice and services have facilitated the completion of its work. The study director, on this occasion, wishes to register his appreciation for the contributions of Rhoda M. Pauley and James R. Sheffield of the EWA staff to the preparation of this report. He owes a very special debt of gratitude to Sally V. Allen, who, in addition to many other duties associated with this project, organized much of the material and participated in the drafting of this summary.

John W. Masland
Director of the Study

INTRODUCTION

The Scope of This Study

The newly developing nations of Africa aspire to national growth in short order. High among their expectations is the provision of greatly expanded educational opportunity. This expectation is fired largely by political and emotional imperatives.

The development of a national educational system is seen also as an essential ingredient of nation-building. Skilled manpower must be provided to lead the nation, operate government services, staff universities, schools, and hospitals, and conduct the affairs of agriculture, industry, and commerce. Economists and even educators no longer classify education only as a social service or a human right. They now recognize that investments in education are a source of productive return, essential to national growth. However, since resources of these nations, including those made available by external donors, are severely limited, investments in education and other developing sectors require careful identification of targets, selection of priorities and calculations of relative costs, and evaluation of the relationships of education to all other sectors of growth. Such careful planning is essential to human resource development, which encompasses not only formal education at all levels but also on-the-job training, informal adult education, and individual self-development.

This study seeks to advance the understanding of some of the processes and problems of human resource development. Yet this study is strictly limited in its scope and intentions, dealing with only nine selected African countries. These include traditionally independent Liberia and Ethiopia, the former British territories of Nigeria in West Africa and Kenya, Tanzania and Uganda in East Africa, Sudan, formerly administered by Great Britain and Egypt, and the former French territories of Guinea and Tunisia. The study focuses principally upon high-level manpower demand and supply and endeavors to determine the extent to which each of these countries has engaged in systematic analysis of its manpower requirements. Within the limits of available

data-- and in many countries this is indeed a severe limitation-- it identifies manpower needs both present and projected.

Besides reporting on quantitative data, the study assesses the educational capabilities of these nine countries to meet their manpower needs and measures the level of study overseas by African students. It then attempts, in so far as data permits, to determine the extent to which the supply of individuals from this educational pipeline will meet known needs. Finally, the study identifies bottlenecks and imbalances in educational development and suggests areas in which external assistance can be most effectively employed.

The limited scope of this study unfortunately has permitted only marginal attention to other dimensions of educational development which also affect the ambitious efforts now underway in these African countries. It has not been possible, for example, to evaluate the quality of education or to analyze the relative investment costs at different levels of education and the capabilities of the national economy to sustain these costs. This undertaking also does not consider the political, social, cultural, and attitudinal factors involved in adapting educational opportunities to the needs of these changing societies and in securing optimum utilization of available manpower. These are elements that must be considered by each country in formulating and adjusting an overall strategy of human resource development.

Characteristics of the Nine Countries Surveyed

The countries covered in this study share many common features as well as marked contrasts. They vary in size from Nigeria, with a population of more than 50 million, to Liberia, with a population of less than one million. Except for Tunisia and part of Nigeria, all of the countries surveyed fall within the lowest category of human resource development as measured by quantitative indicators employed by Harbison and Myers.¹ Typically,

¹Frederick Harbison and Charles A. Myers, Education, Manpower and Economic Growth: Strategies of Human Resource Development (New York: Mc Graw-Hill Book Company, 1964).

these are agrarian rural or nomadic societies where life expectancy is low and most of the people are young. The so-called modern sector of the economy consists of the government and public corporations, a few large plantations, trading establishments, and some industries. Most of the people have very little association with the modernized sectors of the economy, and per capita income is low. There is a critical shortage of all categories of high-level manpower: professionals and subprofessionals, administrators and clerical staff, teachers, supervisors, and senior craftsmen. The total number of indigenous persons who have a secondary education or equivalent is less than one per cent, and in some cases it is even lower.

Usually a large share of the existing high-level manpower in these countries is employed in government services and in education, and in spite of the emphasis upon Africanization in the years since independence, more than half of all high-level personnel are nonindigenous. In the three countries of East Africa, for example, of an estimated total of 67,500 high-level personnel in 1960, nearly 23,000 were European and 31,000 were Asian. In the senior category, Europeans accounted for 50 per cent of the total, Asians 38 per cent, and Africans only 12 per cent.

Nigeria and Tunisia are exceptions to this general characterization.¹ On the whole, Nigeria and Tunisia have advanced to the second level of human resource development. Their school enrollments have been higher than the other seven countries for some time, and they now are able to meet the greater part of their nontechnical high-level manpower requirements in such categories as teachers, managers, and supervisors. Yet they are still unable to produce enough strategic high-level manpower, particularly engineers, scientists, and highly qualified teachers, to advance to the next level.

¹While northern Nigeria -- which includes three-quarters of the country's total land area and over half of the population -- falls within the lowest category of human resource development, the southern regions are more advanced.

ASSESSMENT OF HIGH-LEVEL MANPOWER NEEDS

National and Human Resource Development

Given the acute shortage of high-level manpower in these African countries, one might conclude that the focus on manpower needs as a rationale for educational planning in Africa is premature and perhaps irrelevant. Even experts do not agree on the exact relationship of education to national development. Moreover, manpower calculations are based upon incomplete or inaccurate statistics on population, national income, and employment and upon uncertain assumptions of growth rate, wastage, and investment by external sources. In addition to the uncertainties of planning, there are uncertainties in the implementation of plans, for political factors frequently override rational considerations. For example, the fact that educated Nigerians from the southern regions cannot readily find employment in the north or that Asian engineering graduates have similar difficulties in East Africa complicates formulation of the manpower supply-demand equation. Nonetheless, the range of African manpower needs in all occupational categories is so enormous that priorities must be identified to insure that scarce human resources are utilized well. In spite of obvious statistical difficulties, sufficient information is available in these countries to establish general orders of magnitude and to indicate directions for manpower strategies.

It is encouraging that the Economic Commission for Africa at its meeting in Nairobi in February 1965 invited member states "to include manpower planning in the continuing process of their plans for economic and social development" and to establish central machinery for this purpose. The ECA also asked its executive secretary to assist members in establishing such machinery.

Each of these countries has been increasing the proportion of its budget allocated to education. Yet evidence gathered in the course of this study suggests that further progress will be retarded by increasing financial stringency on the part of both national governments and external donors, while at the same time pressures to push forward in education will mount. What is most needed at this time is recognition by the African governments -- and external donors as well -- of the necessity to conceptualize each educational scheme in terms of overall human resource development.

Manpower Planning

The Status of Manpower Data. Responsible individuals in all of the countries surveyed are aware of the value of manpower planning and state that they relate educational plans to overall development, with particular reference to manpower needs. While Nigeria, Tanzania, Tunisia, and to a lesser extent Sudan, have included manpower assessments in their most recent development plans and have given priority to the training of high- and intermediate-level personnel, only Nigeria, Tanzania, and Kenya have produced reasonably satisfactory manpower analyses to serve the needs of national planning. For the most part existing manpower data on the other six countries is out-of-date. In Guinea, Liberia, and Sudan there have been no manpower assessments since 1957, 1960, and 1961 respectively, and in Ethiopia, Tunisia, and Uganda existing data is incomplete.

Most of the manpower research in these countries was undertaken by foreign advisers, frequently acting in an unofficial capacity. In Ethiopia, for example, a visiting economist at the university prepared a survey in the spring of 1964, which was put together in great haste and is not complete. In other countries, such as Tunisia, manpower estimates for the agricultural sector are considered to be invalid, although estimates in other sectors prepared by the Tunisian government for the ten-year plan period 1962-71 are still considered valid. An ILO manpower expert has worked in Tunisia to help prepare the country's quadrennial development plan for 1965-68, but neither his work nor the plan has yet been published. Uganda has been making progress on its current manpower survey.

Manpower Planning Machinery. In almost all the countries studied the manpower planning structure is inadequate to serve the country's needs. Effective administrative machinery for the integration of manpower planning with educational planning has been developed only in Nigeria and Tanzania. In Nigeria a National Manpower Board has been established within the National Economic Council and affiliated with the federal Ministry of Economic Development, but even so working relationships with other agencies of the federal and regional governments are not yet satisfactory. In Tanzania the Manpower Planning Unit is located within the Directorate for Development Planning, which is affiliated with the office of the President.

This link gives the manpower unit an authority in dealing with the Ministry of Education and other agencies enjoyed by manpower planners in no other country. With the possible exceptions of Kenya and Ethiopia, such machinery will not be provided for some time to come in the other countries. Although many of these countries do have national planning offices with coordinating functions, the apparatus is cumbersome and there are no manpower units per se. Manpower planning is hampered, moreover, by a shortage of experienced planning personnel, incomplete statistical information, poor liaison with educational and other administrative agencies, and interjection of political considerations.

But the creation of a manpower planning unit alone will not resolve all these problems. All agencies involved in planning, as well as private employers, must be brought into an effective operational relationship. This involves cultivation of a common understanding of the need to formulate and articulate an overall strategy of human resource development among claimants for manpower as well as those concerned with its supply.

There are three basic elements in the organization of an effective manpower program. These are:

1. An institutional unit of well-trained research personnel who not only know the techniques of manpower research but also have the ability and experience to relate manpower planning to national development.
2. An organizational entity, highly placed within the government, which coordinates research, policy formulation, planning, and operations in the manpower field. This usually involves coordination of the manpower activities in the Ministries of Education, Labor, Commerce and Industry, Agriculture, and Defense, and those agencies concerned with overall planning, such as the secretariat in the Prime Minister's office.
3. A field organization for managing the labor market -- bringing the man and the job together, adjusting labor supply to short-term demands or to special area requirements, and assuring the effective employment of scarce but essential skills.

In espousing such an organized approach this study does

not reject the conviction that in any country there should remain a relatively high degree of individual freedom of choice concerning one's field of study and career. The question is not freedom of choice for the individual but rather the use of public funds -- both African and American -- for clearly identified national needs. Within the pattern of alternatives that results from public policy, the individual still has freedom of choice. Other opportunities outside the realm of public policy also remain open to him.

Recommendation. AID should continue its practice of encouraging African countries to engage in systematic analysis of their manpower needs as a part of their overall development planning and to relate educational planning to identified manpower requirements. Specifically AID's support of these efforts might include technical assistance in the form of experts and operational personnel to staff manpower and other planning units, and also counterpart training. Beyond these measures AID should help African governments to define projects in terms of an overall strategy of human resource development rather than local and immediate considerations, so that each specific educational program can be designed and evaluated against overall requirements and potentialities. Greater attention must be given not only to specific manpower needs but also to the impact of such factors as wage and salary structures, attitudes toward certain types of employment and classifications of positions upon the preparation and supply of manpower. The African governments must develop greater capabilities for directing resources and manpower into the most productive channels.

Recommendation. Some African universities are developing a capability to engage in development and manpower planning, both independently and in association with their government. The Nigerian Institute of Economic and Social Research, the Economic Development Institute of the University of Nigeria and the East African Institute of Economic and Social Research at Makerere are prototypes. In some countries this university activity is superior to that of the government. However, lack of effective official support of such planning makes it difficult for AID, in turn, to provide meaningful assistance. In instances such as these AID should continue to be prepared to assist in strengthening the research capabilities of a university in the expectation that there will be feedback to government circles. Recent developments in the Sudan and

Ethiopia suggest that the University of Khartoum and Haile Sellassie I University should receive support for research and planning activities.

Manpower Needs

In the nine countries surveyed there is a fairly common pattern of manpower needs. As suggested above, except in Tunisia and the southern regions of Nigeria, all of these countries are experiencing a severe shortage of high-level manpower in almost all categories, and they face the prospect of even greater shortages of middle-level personnel. Furthermore, all nine countries face the additional manpower problems that arise in the course of Africanization. Evidence indicates that only in Nigeria and, to a certain extent, in Tunisia a sufficient supply of university graduates will be available in some nonscientific fields. It is estimated that by 1968 Nigeria will have a surplus of lawyers and jurists and will surpass her minimum requirements for senior-level accountants and auditors, foremen and supervisors, and intermediate-level statistical assistants. This pattern, which owes much to the influence of classical French and British education, may well be repeated in other countries as their educational systems expand.

Recommendation. The shortage of skilled managerial, administrative, and professional personnel presents African governments with a paradox: on the one hand, they are anxious to Africanize rapidly; but on the other hand, they are coming to recognize that the acceleration of national development increases rather than diminishes the need for expatriate personnel. During this stage of development it is recommended that AID provide key operational personnel in addition to technical advice. Wherever possible, provision should be made for counterpart training of Africans to replace these personnel, and every effort should be made to select counterparts who will be appropriately assigned after completing their training. It should be recognized, however, that the not uncommon failure of the local governments to provide counterparts is often due to the shortage of available people. Accordingly, at least at this time, the provision of counterparts should not necessarily be a condition for supply of operational personnel. It is also recommended that AID endeavor to include training opportunities in every assistance program, whatever its primary purpose. Both of these efforts -- counterpart and additional training programs --

require a high level of skill among supervisory personnel, a condition that cannot prevail unless satisfactory arrangements for employment of key expatriate personnel can be maintained.

Agricultural Manpower

In most of the nine countries the need for agricultural personnel has not been assessed. Often when demand has been estimated, it has been seriously understated; and calculations of demand fail to indicate the very real need for improvement in the quality of agricultural personnel.

Approximately 85 per cent of the labor force in all nine countries is engaged in agriculture, and successful national development requires greatly increased productivity in this sector. This calls for leadership by a relatively small number of highly skilled individuals in research and in extension services. Yet manpower surveys demonstrate that this critical shortage -- in terms of quality, not numbers -- is not being met. A recent report by the Tunisian Ministry of Agriculture almost doubled the high-level agricultural needs outlined in the ten-year development plan; and yet the same report can account for the formation of only about 20 per cent of the requirement by 1972. A 1963 study in Uganda indicated that at least through 1966 only about 25 per cent of the country's needs for first degree and postgraduate agriculturalists can be filled by local graduates. In Nigeria the most recent manpower study estimates that less than 60 per cent of the requirements for senior-level agriculturalists and 43 per cent of all needs for intermediate-level agricultural assistants and extension workers will be met by 1968.

EDUCATIONAL CAPABILITIES

Educational Planning

Education Before Independence. Educational development has been given high priority in the developing nations of Africa since the years just prior to independence. By the late 1950s when the United States first undertook significant assistance to African education, Britain and France had already created sizable educational systems in Africa. The

countries of British Africa enjoyed slightly more extensive school enrollments than did those of French Africa -- by 1961 four out of ten primary school-age children were enrolled in British Africa and three out of ten in French Africa -- but the French territories appeared to spend more for education. In both French and British areas, however, relatively few children had an opportunity for more than primary schooling.

In spite of the considerable growth of education experienced under the colonial powers, it became increasingly evident as African societies began to assume responsibility for their own futures that they were not fully equipped to do so. The lack of trained manpower to direct development in the precarious post-independence days was universal, and in every case gaps in the educational structure indicated that acute manpower imbalances would exist for some time.

Goals Established at the Addis Ababa and Tananarive Conferences. African aspirations for rapid amelioration of this situation were enunciated at the Addis Ababa and Tananarive conferences of African states in the early 1960s, where a high priority was accorded to education in recognition of its importance to national development. The Addis Ababa conference, held in 1961 under the auspices of UNESCO and the United Nations Economic Commission for Africa, outlined the scale of the current problem and proclaimed common goals.¹ At that time, for Africa as a whole, only 16 per cent of primary and secondary school-age children combined were enrolled in school, ranging from a low of two per cent in several countries to nearly 60 per cent in others. The conference set the ambitious goals of universal, compulsory, and free primary education by 1980 and a secondary system to accommodate ten per cent of primary-leavers in general academic schools and 20 per cent in vocational, technical, or teacher training schools. Twenty per cent of the pupils completing secondary schooling were to go on to higher education, and nine-tenths of these were to study in Africa. The conference agreed that planning and manpower boards should be established to evaluate needs and to coordinate local educational efforts with external assistance.

¹Final Report of the Conference of African States on the Development of Education in Africa, sponsored by UNESCO and the United Nations Economic Commission for Africa (Paris, France: UNESCO, 1961).

The 1962 Tananarive conference, also sponsored by UNESCO and ECA, focused on planning for higher education.¹ As provisional targets during the next two decades the conferees concluded that the combined total of students enrolled in higher education at home and abroad should be not less than 1.5 per cent of the relevant age group in Middle Africa and not less than 5.9 per cent in North Africa. At least 40 per cent of all students enrolled in African institutions should be in degree courses, and not less than 60 per cent should be enrolled in scientific and technological fields, including medicine and agriculture. Special effort should be devoted to education in agriculture and related fields.

Implementation of the Addis Ababa and Tananarive Goals. The Addis Ababa and Tananarive conferences identified general educational goals by which African countries might measure their own ambitions. Individual countries refer to these goals only when it is in their interest to do so. In most of the countries surveyed in this study, separate and more specific plans for educational development have been prepared, setting forth objectives for each segment of the system. Among these plans the report of the Commission on Post-School Certificate and Higher Education in Nigeria (chaired by Sir Eric Ashby), has made perhaps the greatest impact.² Comparable but less influential plans of varying quality have been published in other African countries. The Guinean situation has been the most confused: educational planning has been haphazard, and there have been four or five revisions of the educational system since 1958. In Tunisia, on the other hand, the decennial plan for education preceded the general economic plan by two years and was featured prominently in the development plan.

¹See The Development of Higher Education in Africa; Report of the Conference on the Development of Higher Education in Africa, Tananarive, 3-12 September 1962 (Paris, France: UNESCO, 1963).

²Investment in Education: The Report of the Commission on Post-School Certificate and Higher Education in Nigeria (Lagos, Nigeria: Federal Ministry of Education, 1960).

Although all the countries studied emphasize educational planning within the context of development planning, machinery to implement educational plans varies from country to country: Nigeria and Tanzania have effective manpower planning machinery, described earlier; Guinea has no apparent structure; while Tunisia has effective educational planning machinery, since the Planning Office of its Ministry of Education is closely tied to the General Planning Office through representation on all committees at all levels. In other countries the administrative structure is often impressive in outline but inefficient in actuality. In Ethiopia, for example, His Imperial Majesty Haile Sellassie I is both head of the National Planning Board and Minister of Education, but administration tends to be hesitant because subordinates lack sufficient authority to formulate policy.

Educational Costs

In general, investment in education has run ahead of plans, in contrast to investment in the so-called economic sector of national development. The percentage of the national budget allocated to education has been lowest in Liberia -- 10 per cent in 1963 -- and highest in Tunisia -- 25 per cent in 1964. However, there are signs of an overinvestment in education compared to other developing sectors, and this is responsible for mounting recurrent costs. In Nigeria, for example, the total recurrent cost in 1970 will be three times as much as recurrent costs in 1961 and will nearly equal the capital expenditure over the 1961-70 period. In Nigeria's Eastern and Western Regions 40 per cent of recurrent expenditures are now devoted to education. Under Tanzania's five-year plan (1964-69) education will absorb 24 per cent of all recurrent costs and about 15 per cent of total capital investment.

In each of the nine countries unit costs at all levels of the system are high, partly because in many instances physical plants are not utilized to capacity. The low student-teacher ratios, high salaries, and provision of staff housing and boarding facilities at most secondary schools and universities increase costs greatly. In most countries the per student cost is roughly equivalent to that of the United States; but for the United States this figure approximates per capita income while for Africa it is at least thirty times more than per capita income. In Liberia annual costs for a university

student are approximately \$2,500. In Nigeria it is estimated that the annual per student cost (excluding external assistance and amortization of capital investment) is \$2,800 at the universities, \$1,400 to \$1,900 in secondary schools, and \$280 in primary schools. Costs in Ethiopia are even higher, averaging \$6,700 per student partly because the staff-student ratio is a low 1:6. It is clear that student enrollment at these universities could expand greatly without necessitating the hiring of additional faculty and that such expansion is desirable to reduce costs.

Recommendation. It is recommended that AID continue to assist educational planning by making skilled personnel available for planning and administrative positions in government agencies as well as in educational institutions. Long-range planning is hampered by lack of information on manpower needs, costs of education, enrollments, staffing requirements, and other considerations. Frequently, operational personnel rather than advisers can make the greatest contribution in gathering this information and assisting in educational planning. The observations made earlier in the recommendation on page 8 apply here as well.

The Need to Relate Education to Employment Opportunities

Although educational development helps to solve some problems, it also creates others. Thus, in spite of shortages of senior- and intermediate-level manpower, these developing societies are experiencing growing problems of unemployment, aggravated by rising numbers of primary school-leavers and a general movement into urban centers. The rapid progress of education at the primary level together with the slow rate of economic growth and the consequent failure to create new jobs has resulted in a serious school-leavers problem. The primary school-leavers who are unable to find work in urban areas but refuse to return to their villages constitute a dissatisfied element in African societies that is increasingly responsive to radical leadership. The even graver problem of unemployed secondary school or university graduates can already be foreseen.

Recommendation. This situation suggests that AID increasingly must relate its assistance to education to overall national development. More attention must be given, for example, to the relationship of educational advances to other sectors

of the economy, and to the interrelation of each level and category of education in order to maintain a proper balance in the allocation of resources and in the production of trained individuals.

Recommendation. AID can help the African governments develop a more thorough and comprehensive approach to educational planning by refining its own approach and giving more attention to organization of an overall human resource development strategy. Too frequently individual projects, which have merit in themselves, appear to be conceived and developed without full appreciation of their broader implications. Greater attention needs to be given to identification of strategic areas and to the determination of critical priorities. Before a project is undertaken, its potential impact upon the full spectrum of educational development needs to be better understood: To what extent will the project, if successful in its own right, divert resources and interest from other areas of need? What effect will it have upon the attitudes of students and their parents? Will the government be able to duplicate the project if it is designed as a model? Will the project stimulate innovation in educational development?

In part AID might achieve a more effective and comprehensive approach to human resource development by making appropriate organizational changes within its country missions. The characteristic administrative separation within a mission of educational, agricultural, and industrial sections leads to fractional consideration of proposals in these areas. A comprehensive joining of these functions to consider overall human resource development, as has been done in part at least in the Tunisia mission, should be considered for all African countries.

The current Country Assistance Program report (CAP) illustrates that a fully conceived and articulated overall strategy for each country is lacking. Although the CAP reports are useful documents, to the outside observer they appear to be principally a justification of individual projects selected for support rather than a comprehensive analysis of each country's development problems. These reports would be more useful if they assessed past programs -- with more attention to weaknesses and failures -- as a guide to further policy and action. Because they do not at present set forth an overall strategy of assistance, identifying key target areas, they do not reveal the hard choices that must

be made in the proper selection of these targets and in the determination of priorities. An annual presentation that would include this additional material would in itself facilitate the development of a better understanding by AID, both in the field and in Washington, of its own strategy in each country. It would also help the AID mission to provide more effective backstopping of African governments, encouraging them to coordinate further the separate activities of their ministries.

Recommendation. For similar reasons AID should seriously consider reducing the number of special study teams sent to Africa and make a greater effort to relate new studies to the overall assistance strategy for the country concerned. The constant stream of visitors is a heavy burden to both African officials and the staff of USAID missions. More importantly, too frequently these studies are not well coordinated with other investigations or on-going programs nor to the overall human resource strategy of the country. When study groups are sent to the field, special efforts must be made to inform all personnel of the purposes of the enterprise, and to provide for effective reception and communication overseas during the conduct of the study. This places a heavy obligation upon AID personnel as well as those participating in such studies to insure that such cooperation and coordination are achieved.

Coordination of Educational Assistance

Assistance to educational development in Africa has been made available from numerous American sources and also from public and private sources in many other nations. The African nations have benefited beyond measure from this assistance. Yet the very multiplicity of sources of aid, and the different interests, habits, and intentions of these sources are responsible in a very large measure for a piecemeal approach to educational development. Ideally, foreign donors should coordinate their efforts through collaborative plans. Even though the coordination of American programs alone is a difficult task, every effort should be made to maintain open communication and exchange of information within the American community.

Multilateral assistance, through such organizations as UNESCO, UNTAB, and the World Bank, is attractive to African nations as a means of avoiding too close an association with a single donor. While the multilateral approach poses serious procedural problems, under appropriate circumstances it should be encouraged.

Although coordination of this sort is an ideal that should be cultivated, achievement of this ideal will be difficult and perhaps infeasible. Ultimately, responsibility for coordination should rest with each African government. In the meantime AID should give encouragement to the establishment and strengthening of such agencies as the Bureau for External Aid to Education in Nigeria and should continue its practice of cooperation with other foreign donors.

Primary Education

In all countries educational capabilities at all levels are being expanded in accordance with educational plans. In a few areas the Addis Ababa target of universal primary enrollment is nearing realization. In Liberia and Uganda primary enrollments are nearly in line with the Addis Ababa target for 1965 of 51 per cent of the age group. Although primary enrollments passed the figure of 75 per cent in Nigeria's Eastern and Western Regions, the percentage of enrollment for the country as a whole was only 31.1. By far the lowest percentage of enrollment is in Ethiopia (the Sudan is second), where the proportion of the primary age group enrolled is estimated at 5.5 per cent.

Only in a few instances have lesser goals than universal primary education been accepted, as in northern Nigeria and Tanzania, which have set 50 per cent as their goals. In Tanzania the decision to limit primary expansion was based upon financial considerations, estimates of the supply required to achieve the 1980 target of self-sufficiency in manpower, and recognition that the nation did not have enough teachers for larger enrollments. Consequently, although since 1965 many local communities have built new schools on their own initiative, they have been warned that neither funds nor teachers will be made available to operate them. The Tanzanian example is commendable and will help to maintain the present quality of primary education, conserve limited funds, and reduce the number of unemployed school-leavers.

Recommendation. Although the terms of reference for this study do not call for recommendations on primary education, certain aspects of primary education deserve close attention because they affect higher education. Much needs to be done to improve the quality of curricula, teaching methods and material, and training of personnel for primary schools. Assistance on a highly selective basis to projects that offer a high return in innovations and compounding effect -- such as teacher training projects in northern Nigeria -- might be in order.

Another problem which is critical to development is the future of the primary school-leavers who prefer to remain in the cities even if it means that they may join the ranks of the urban unemployed. Much more needs to be understood about primary education as a terminal experience in developing countries. It would be appropriate for AID to encourage serious investigation of this problem, particularly by Africans.

Secondary Education

While secondary enrollments are proportionately much lower than primary enrollments, they have expanded at a faster pace, doubling over the last few years in Nigeria, Guinea, Tanzania and almost doubling in Tunisia. However, only Liberia and Tunisia are on schedule in meeting the Addis Ababa target of nine per cent enrollment by 1965. Although ten per cent of the relevant age group is enrolled in Lagos, Nigeria, enrollment in the country's Eastern and Western Regions is only slightly more than 2 per cent and only 0.3 per cent in the north. In Ethiopia, the lowest on the scale, less than 0.5 per cent of the relevant age group has been enrolled in grades 9 to 12.

Generally, the supply of students in all nine countries will be more than sufficient to fill the rising number of places in the new universities. But the proportion of students concentrating in science and mathematics remains low, and hopes of preparing the majority in these fields are unlikely to be realized for many years to come. Attempts to broaden the curriculum to prepare students for immediate employment or post-secondary training outside the university move slowly. Most secondary schools still have the traditional academic bias-- although less so in Tunisia and Guinea-- and require strengthening in scientific, technical, and vocational instruction, especially in order to prepare students for work in these fields at the university level. In Tanzania, for example, although secondary output has been increasing, in 1964 only 70 of 290 Higher School Certificates were in science.

Recommendation. Secondary education does not fall directly within the terms of reference of this study, but it deserves attention by AID. As educational capabilities at this level expand, they should be related increasingly to alleviation of the shortages of intermediate-level manpower. Thus, they should prepare individuals not only for university study but increasingly for other avenues of career development as well. This calls for broadening of the curriculum, particularly in the sciences and vocational fields, and for the cultivation of attitudes that will cause young people to seek advancement outside of the traditional and prestigious university pathway. Further suggestions along these lines are contained in the country reports.

Teacher Training

The supply of well-qualified African teachers is essential for effective development of secondary education, and throughout these countries the shortage of these teachers is perhaps the most critical problem for education. All nine countries depend upon expatriate teachers to a considerable degree, and as secondary enrollments increase they will be hard pressed to keep up with demand, let alone replace expatriates. The greatest need for many years will be science teachers. Two principal teacher training programs have been developed to help meet these needs: (1) the teachers college, a separate institution that enrolls post-secondary students who usually have a School Certificate or its equivalent and (2) the Faculty of Education of the national university. Nigeria, which has the largest population, has made the most progress in developing teachers colleges. So far six advanced colleges offering the diploma-level Nigerian Certificate of Education have been established. The development of teachers colleges, however, faces the common problem of a shortage of well-qualified teaching staff, particularly science instructors.

Future Sources of Secondary Teachers

Most university graduates have not been attracted to secondary school teaching. As opportunities in government service diminish, however, university graduates can become an important source of teachers. Almost all the universities now have Faculties of Education, which are beginning to enroll more students. Tanzania has employed its bursary system to enroll one-half of the arts students at University College, Dar es Salaam, in the Faculty of Education, which has developed an imaginative curriculum. A potential source of graduate secondary school teachers which has not yet been exploited is the large group of students overseas. With proper incentive and training programs, many returning graduates can be attracted to teaching positions in the secondary schools.

Recommendation. Efforts to strengthen teacher training institutions at all levels deserve continuing and perhaps greater support. The role of the universities in educational research, extension programs, and the preparation of teachers should be enhanced. As soon as possible external assistance programs such as the Peace Corps, that now provide practicing teachers, should be directed toward building indigenous teaching capabilities. It is recommended that the services provided by the Teacher Education in East Africa program (TEEA) be made

available in other parts of Africa. In addition, efforts should be extended to direct students returning from overseas into secondary teaching.

Vocational and Technical Education

Numerically, the most critical manpower shortage is at the intermediate level. Unfortunately, however, conditions in these African countries, as in other developing countries, make it difficult to establish and maintain effective programs for training intermediate-level personnel. Vocational training is offered at the secondary level chiefly to prepare craftsmen (many, if not most, of whom will not attain the intermediate level), and technical training is offered at post-secondary institutions. Unfortunately, the prevailing attitudes of students and frequently of their parents present a severe obstacle to the formation of skilled manpower. Students who gain places in secondary schools aspire to go on to the university, for anything less is considered second-rate. Therefore, they do not choose to pursue vocational studies in secondary school, and those who are well qualified avoid the post-secondary technical institutes, where enrollments are generally below capacity. Other factors limit progress in technical education: vocational and technical programs are expensive, and qualified teachers are not readily available. Moreover, courses of study are not sufficiently related to employment opportunities; and governments tend to favor the universities rather than intermediate-level institutions. Consequently, the development of vocational and technical education generally remains unsatisfactory and indeed perplexing both to Africans and others.

The former French territories place more emphasis upon vocational and technical training than the other countries. In Guinea and Tunisia most technical education is conducted in the secondary system through a technical option in general courses or through separate technical secondary schools. The Tunisian ten-year plan (1962-71) suggested that 40 per cent of secondary enrollment be in commercial and industrial courses. In 1964 an enrollment of 27.5 per cent was reported in these categories, but constant effort will be needed to achieve the target, and the slow growth of enrollment in technical fields is of great concern to the Tunisian government. Guinea's most recent educational program envisages the transformation of all secondary-level lycées and collèges into technical schools in which every student will spend at least one-third of his time in professional disciplines.

Yet this expansion of lower and higher vocational education appears to sacrifice some general education courses and thus may affect disadvantageously the quality of manpower needed at the highest levels. Few vocational training centers exist outside the general secondary system in Tunisia and Guinea, although an experimental project in Guinea supported by AID and run by the Organization for Rehabilitation through Training promises to provide one alternative solution to the problem of supplying intermediate-level technical manpower.

*See
conclusion
on part*

Technical education in the former British countries is less developed. At the secondary level vocational training is carried on chiefly in trade schools, though some is offered in the technical streams of the general secondary schools. The trade schools have been criticized for being expensive and insufficiently integrated with the needs of industry, and for having inadequately prepared students and obsolete equipment.

In these countries lower-level trade centers and craft training have received too high a priority in comparison to post-secondary (subprofessional) technical training, which deserves more attention. For the most part, post-secondary polytechnic institutes suffer from the same maladies as the trade schools. They do not share costs sufficiently with the employing institutions, and their curricula are oriented to the City and Guild Examinations of London. Their facilities are inadequate to meet the growing need for intermediate-level technical personnel. There are, however, some quite successful establishments. The Kenya Polytechnic Institute is one that works closely with employers in planning its programs and with a few exceptions enrolls only students who are employed and sponsored on a part-time basis by their employers.

Recommendation. As a source of much needed intermediate-level manpower, technical and vocational education should have high priority. Yet throughout Africa progress in this area has been uneven, and the character of much of the instruction offered does not appear to be fully related to needs. Accordingly, it is recommended that AID move cautiously in this field, encouraging African officials to reappraise this aspect of educational development, to question conventional approaches, and particularly to relate programs more closely to employment needs.

Agricultural Education

Agricultural education also lags behind need, in spite of its paramount importance throughout Africa. This lag can be attributed partly to the fact that post-secondary agricultural programs are few in number, understaffed, and often do not fully meet standards of high quality. Normally agricultural education is the responsibility of the Ministry of Agriculture.

In Tunisia, for example, the Ecole Supérieure d'Agriculture is separate from the University of Tunis and remains outside the jurisdiction of the Ministry of National Education. This school has concentrated on preparing students for positions in the higher echelons of the Ministry of Agriculture; its output is small and so is its teaching staff -- the total faculty numbers five, of whom only two are Tunisians. However, more of Tunisia's needs for agriculturalists should be met through the further development of the Chott Maria Agricultural College.

Other agricultural training programs similar to Tunisia's are operating in Nigeria; these offer two- or three-year courses leading to Post-School Certificates. However, there appears to be insufficient coordination between Nigeria's regional Ministries of Agriculture and Ministries of Education in developing these agricultural training programs, and there is no federal ministry that might provide general leadership. It is hoped that as the universities' Faculties of Agriculture become stronger, they can contribute personnel, research, and general leadership to agricultural education much the same as the universities' Institutes of Education contribute to teacher training programs.

Revision of the secondary school curriculum, adding vocational-agricultural training, appears to be an effective means to improve the preparation of agricultural personnel. Such a curricular revision has been successfully introduced in Ethiopia and has made headway in Kenya, where an initially experimental program is now being adopted at a number of schools.

Recommendation. Since the economies of these African countries are predominantly agricultural, the highest priority should be assigned to expansion and improvement of agricultural education. The shortages of higher-level manpower for research, administration, and extension services must be met before changes in the farm economy can be expected. Therefore, it is recommended that AID continue to give the highest degree of attention to the development of agricultural manpower.

However, it should be noted that the problem is not increasing the number of people trained; rather what is needed is to bring more scientific knowledge, administrative support, and imaginative leadership to bear upon the particular problems of these agrarian societies. In the short run, at least, the development of agriculture probably will depend more on effective technical assistance than on formal education.

Upgrading Employed Manpower

Programs to improve the capabilities of individuals already employed are as important as the formal educational system in human resource development planning. In most of these countries, to varying degrees, government ministries, public corporations, and the larger private corporations operate their own programs to train administrators, managers, technicians, craftsmen, artisans, agricultural field assistants, stenographers, and other personnel. In Nigeria alone an estimated 2,000 employees a year pass through either long- or short-term courses offered by these in-service training centers. Some governments are focusing increased attention on the upgrading of their administrative personnel. The Kenya Institute of Administration is an example of a strong program. The National School of Administration in Tunisia not only offers programs to upgrade civil servants for the various ministries but also is responsible for the recruitment of all government personnel in Classes A, B, and C.

In some of these countries significant external assistance has been directed to the training of employed manpower. The ORT school in Guinea, for example, has received substantial support from USAID and promises to improve the skills of employed workers through one-year accelerated training courses in addition to the general middle-level technical training provided in its regular two-year course.

Strictly speaking, the various in-service training programs operated by the large public and private corporations do not prepare their trainees for high-level employment, but these programs do offer some persons opportunity to advance to intermediate-level positions. Because in-service training programs are potentially one of the most effective means of human resource development, private industry should be encouraged to assume increasing responsibility for such training.

Training programs conducted by the military and security establishments undoubtedly constitute a source of skilled manpower that will assume increasing importance in these African countries. Over a period of time there will be feedback from these programs into the national economy.

Recommendation. AID should place greater emphasis in its assistance upon the training of employed manpower, which is perhaps the most promising source of better qualified intermediate-level personnel. The policies of the African governments might be directed toward encouraging the extension of present in-service training programs both in the private sector and in the public services. Wherever practical, the costs of such training should be shifted to public corporations and private industry. Opportunities to increase the supply of intermediate-level manpower are being missed by not maximizing possibilities for more in-service training programs within industry.

Shortages of intermediate-level personnel could also be alleviated through adjustments of wage schedules and other incentives to make this level of employment relatively more attractive. Examples of other measures that might be taken include schemes such as the Ethiopian University Service program and extension of opportunities for young people to acquire land, small shops, or businesses.

University Development

National and regional ambitions in Africa have resulted in the establishment of even more universities than were anticipated. University expansion has been impressive, and these countries are approaching the capacity to meet their needs in all but narrow fields of specialization. The most rapid university development has occurred in Nigeria and Tunisia, while progress has been delayed in Guinea and Liberia. Since 1960 four new universities have been established in Nigeria, and the total enrollment of the country's five universities for 1964-65 is almost 5,000. The current total enrollment at the University of Tunis is almost double that of 1960-61, the first year of its existence, and is expected to reach a peak of 12,000 by 1971. In Liberia government support for undergraduate study overseas has been disproportionately larger than support for the development of its own national university. A different problem affects university development in Ethiopia, where because of the small output of secondary schools, the university takes over 40 per cent of the graduating classes. This situation not only raises questions about the quality of Ethiopia's university students but also deprives subuniversity institutions and the national economy of intermediate-level manpower. Yet another problem facing African higher education is illustrated in Guinea, which wants its own university but is short of the necessary funds, faculty, and educational infrastructure to set up a strong national university. Even though adequate university facilities are available in other French-speaking countries for Guinean students, Guinea appears to be unwilling to depend upon such opportunities for long; and Guinea's reluctance to send students outside the country further complicates rational planning.

Cooperative Planning for University Development. At the Tananarive conference in 1962 the African nations set ambitious goals for higher education throughout the continent, but at the same time they recognized the perils of too rapid expansion and costly duplication of facilities. They proposed to increase student-faculty ratios, cooperative planning, and joint use of specialized facilities. But since these declarations were made, university development has gone forward rapidly, and each of the nine countries studied, except Guinea, has at least one institution of higher learning.

There have been several notable efforts to plan university development on a cooperative basis. The University of East Africa, a federal institution consisting of Makerere College in Uganda, University College, Nairobi in Kenya (formerly the Royal Technical College), and the newly established University College, Dar es Salaam in Tanzania, was designed to serve the needs of the three countries without unnecessary duplication. Each of the colleges was to have Faculties of Arts, Sciences, and Education, but facilities for medicine and agriculture were to be centered at Makerere, engineering and veterinary science at Nairobi, and law at Dar es Salaam. This pattern was reinforced by general agreement among the principal external donors and by limitations of local funds. However, recent events have threatened the continuation of this experiment. Uganda has been relectant to accept a leveling off at Makerere College while support is directed to the other institutions to permit them to catch up. Kenya and Tanzania also show latent ambitions for national universities of their own. The development of a law school in Nairobi under the aegis of the Ministry of Justice, plans to offer clinical instruction for some Makerere students in the teaching hospital at Nairobi, and the upgrading of the medical training center at Dar es Salaam to prepare doctors as well as medical assistants are signs of a trend toward the creation of three separate universities.

The situation in Nigeria demonstrates the difficulties of managing university development. The Ashby commission recommended the establishment of four universities, but the desire of the Western Region for a university of its own resulted in plans for five in all, and regional pressures and competition continue to mount. The National Universities Commission has attempted to limit costly expansion and duplication, but its authority and effectiveness are limited. The establishment of a new Faculty of Agriculture at the University of Ife, even though such a faculty already exists nearby at the University of Ibadan, is an expensive duplication that appears inevitable in order to overcome the deficiencies of Ibadan in this field.

The Growth of Specialized Faculties. At the present time African university development in the arts and social sciences has progressed most rapidly, reflecting a pattern established prior to independence. Authorities are now placing emphasis upon expansion in the sciences and specialized

faculties. Faculties of Agriculture have been established at all but one of the Nigerian universities, and at the University of Khartoum, Haile Sellassie I University, and Makerere University College. Engineering faculties exist at the University of Nigeria at Nsukka, Ahmadu Bello University, the University of Khartoum, Haile Sellassie I University, University College, Nairobi, and the University of Tunis. Strong medical schools have operated for some time at the University of Ibadan, the University of Khartoum, and Makerere College, and others are in varying stages of development at the University of Lagos, the University of Tunis, and Haile Sellassie I University. There are Faculties of Veterinary Science at the Universities of Ibadan and Khartoum, Ahmadu Bello University, and University College, Nairobi; and Faculties of Law at the Universities of Lagos, Tunis, and Khartoum, Haile Sellassie I University, and University College, Dar es Salaam. Each of the five universities of Nigeria aspires to add, eventually, faculties in all or most of the specialized fields.

Enrollments and Pre-University Preparation. University enrollment throughout these countries is highest in the arts and social sciences. This reflects not only the shortage of qualified students in science-oriented fields but also delays in providing staff and facilities in these fields. It will be some time before the specialized faculties listed above turn out an appreciable number of graduates. For some time to come these universities will suffer from the shortage of well-qualified African staff, particularly in science-oriented fields and the specialized faculties.

In many cases the quality of university students in all fields is questionable. In English-speaking countries inadequate preparation in English has led to the creation of remedial work at the universities. Even so, English as a qualifying subject has been dropped from the entrance requirements. Undercapacity enrollments and underutilization of facilities are common problems related to the shortage of qualified students. Because of this shortage some universities enroll such a large proportion of secondary school-leavers that too small a reserve of middle-level manpower is left to meet the country's needs and university standards are affected. Indeed, even many matriculated students must engage in one or two years of extra preparatory work before qualifying for B.A. courses. Clearly, the orientation and curricula of pre-university institutions must be broadened to prepare students both for meaningful university study and

for immediate employment.

Financial Problems. As indicated earlier, university costs are high, particularly when measured on a per pupil basis. As enrollments rise to the Tananarive target of 5,000 for each institution, unit costs presumably will decrease, but this situation will not occur for some time. At the moment student to faculty ratios are, for the most part, very low. While governments generally continue to appropriate large sums for university development and operation, there are signs of financial strain. The Universities of Liberia and Khartoum and Haile Sellassie I University face recurring budgetary crises. All of these universities must be encouraged to engage in more effective fiscal planning and management.

African countries generally provide scholarships and other forms of assistance to post-secondary students, both at home and abroad. At the University of East Africa, for example, most students receive bursaries covering all expenses. In Tunisia most post-secondary students are either on full scholarship or are eligible for loans called prêts d'honneur, which carry no interest and can be repaid over a fifteen-year period beginning ten years after termination of study. In all countries students are, in fact, heavily subsidized by indirect support even where they pay fees, as in Nigeria.

This degree of financial assistance cannot last indefinitely, and limits will be imposed because of budgetary considerations. In Nigeria the problem of dropouts has been serious enough to cause the National Universities Commission to plan a student loan program, although it is recognized that the operation of a loan program will be difficult. However, loan funds will permit significant expansion of enrollments and, by providing students with adequate time and better study conditions, should improve the quality of their work.

Relating University Programs to National Needs. There has been considerable criticism of the "ivory tower" orientation of African universities and of their failure to adapt their curricula and staff to African conditions. Although this criticism is less justified now than it was in the past, it is clear that the classical literary traditions, transplanted from Europe to Africa, tended to produce an elite that was divorced from the contemporary African environment.

Yet these universities are consciously working to relate their programs to national needs. On the one hand, efforts are being made to economize on staff and student housing. On the other hand, the curriculum is being broadened to include more African studies and a greater proportion of scientific and technical subjects to meet Africa's manpower requirements. Other accomplishments will depend largely upon further efforts to foster an attitude of mutual cooperation among the universities and government ministries.

The establishment of Institutes of Education at many of the universities is a promising development. This mechanism makes the resources of the Faculties of Education available to the primary and secondary schools and teacher training institutes to help improve programs and methods of instruction.

Adult education is another area in which universities can make a contribution to manpower resources. Under the mature age entry scheme in East Africa and various programs for extension work, extramural studies, and continuing education, opportunities for adult education are being expanded throughout the nine countries. However, in many instances these programs appear to be operated marginally. Since the upgrading of those presently employed yields the most immediate economic return, universities should be encouraged to expand their services for adults and to provide more part-time study, special short courses, extension programs and the like, particularly in commercial and technical fields.

The University of Nigeria at Nsukka is one example of an institution that has consciously related itself to the needs of the region it serves and that has been pragmatic in its approach. It has admitted students without sixth form preparation and adapted its curriculum to their needs. Its Center for Continuing Education provides a variety of special programs for teachers, farmers, administrators, and others bringing the resources of the university to bear upon the practical problems of the Eastern Region.

The Ethiopian University Service, which requires all students to serve the country by working in rural areas between the third and fourth years of study, is another promising effort to narrow the gap between the university elite and the rural population, thus serving the national interest.

Institutes for Social and Economic Research. A number of universities have established institutes or centers for economic and social research that have prepared creative and useful material. Perhaps the most successful is the East African Institute of Social and Economic Research at Makerere University College. Here a group of approximately 15 social scientists, about half of whom are Africans, are engaged in systematic study of problems of immediate concern to the governments of East Africa. Most of the effective research on manpower requirements and their relationship to educational development in East Africa has been done by this group. The staff of the institute keeps in touch with government personnel through joint seminars and other devices. The staff members do some teaching as well, which provides opportunities for feedback from their research into the instructional program of Makerere College. The Nigerian Institute of Social and Economic Research (NISER) at the University of Ibadan and the Economic Research Institute (ERI) at the Enugu Campus of the University of Nigeria are other examples of effective institutes. The experiences of these groups of social scientists suggest that such research centers can contribute to national planning in situations where government agencies are unable to do so effectively. Thus, these research institutes are an additional means of strengthening the planning and development processes in African countries.

Scientific Research Centers. In many of these countries the former colonial administration established scientific research centers, particularly in agriculture, that developed considerable competence. These institutions were seriously weakened by the departure of expatriate personnel following independence, and the rebuilding process is going slowly. The centers traditionally were maintained by government ministries and operated quite separately from educational institutions. As the new universities grow in their capabilities, their scientific faculties and these centers should be brought into closer cooperation to avoid duplication of effort and to increase utilization of scarce personnel. Ultimately, such a relationship should increase the contributions of both the research centers and the universities to their countries' planning needs.

Recommendation. The recent development of African universities is impressive. They deserve continuing support from AID. Increasingly, emphasis should be placed upon the

development of long-range institutional stability. Every aid program should be judged in terms of its contributions to the ultimate integrity and independence of each university. The universities should be strengthened not only as sources of manpower but also as centers of leadership, skill, and imaginative thinking in seeking solutions to the basic problems of national development.

Because investment in the universities has been great and costs per student are high, these countries should be reassured that they are receiving maximum return on this investment. Therefore, it is appropriate to support efforts to achieve the greatest possible utilization of university resources. The relatively low student to faculty ratio should be a matter of concern. Possible ways to enroll more students should be thoroughly explored and tested.

Recommendation. The efforts of the universities to build up their specialized capabilities in agriculture, veterinary medicine, engineering, and education, and also to provide research and extension services in all fields deserve support, but according to a carefully measured plan. There are already more separate universities than many outside observers have felt would be required to do the job. Unnecessary duplication in these specialized areas among the institutions of a single country, such as Nigeria, or even within a region, such as East Africa, should be avoided.

Recommendation. Teaching as a career is not attractive to Africans during this period of development, when positions in government ministries have a greater appeal. As the opportunities in government service decrease, however, the universities should encourage their students in all fields to enter the teaching profession. The new curriculum at University College, Dar es Salaam might serve as a model for other universities to adapt to their own situations. The Faculties of Education of African universities offer promising opportunities for external donors to stimulate the preparation of qualified secondary school teachers.

Recommendation. African universities must be closely related to the needs of these developing societies. Efforts should focus on innovation and on the contributions graduates will make in seeking solutions to rapidly changing circumstances and problems. Specifically, the universities should broaden

their efforts wherever possible through correspondence and extension programs, other forms of continuing education, and close relationships with intermediate institutions, government ministries and public corporations, and private enterprise.

Recommendation. External assistance in the form of teaching staff will be required by African universities for some time to come. But this assistance should be designed and timed in such a manner so as to accelerate the Africanization of these faculties. The large manpower pools of educated Africans now in the United States and the United Kingdom should not be overlooked, and plans should be devised to assist these individuals to return to attractive teaching opportunities.

Recommendation. The problem of financing student fees deserves attention. Both in Nigeria and East Africa this has been a matter of some concern. In Nigeria a loan program is now planned, but in East Africa this solution was rejected by a Committee of the University of East Africa. It is recommended that AID assist in getting such loan programs started.

Recommendation. Wherever possible the universities should be encouraged to develop close relationships to technical, teacher training, and other intermediate-level institutions for mutual benefit. The diploma-level institutions should profit from the leadership and expertise of the universities, and the universities should find this cooperation a means of relating more directly to the needs of their countries. (This kind of relationship has been proposed for the new University of Zambia.) It is hoped also that this kind of relationship will help to increase the attractiveness of the diploma-level institutions to students. Care must be taken, however, not to overlook the aspirations of some of these institutions to achieve degree-granting status. Such a development would run counter to the serious need for intermediate-level manpower.

Recommendation. Some universities are ambitious to develop graduate programs, which are expensive and require sound financing of both faculty and students. To provide continuity and stability graduate programs must secure the services of well-qualified teaching personnel for considerable periods of

time. African universities should move into this area of instruction only when the above conditions can be met, and then only in selected fields where local resources and conditions indicate that a special and needed contribution to national development can be made. When graduate education materializes, moreover, as it inevitably will, care should be taken to encourage development on regional lines, so that universities will offer graduate programs only in those fields in which they have special competence and in a manner designed to serve neighboring countries as well as their own.

The Relationship of Secondary to Post-Secondary Terminal and University Education

In recent years there has been a great deal of discussion in the former British territories of education from approximately the twelfth to the fourteenth years and its relationship to university entry. Many of the African governments now favor the development of sixth form programs in the secondary schools, which prepare students for entry to the university at the Higher School Certificate level and have relaxed their former criticism of this importation from Britain. This shift is based partly on the belief that earlier entry, following the American practice, involves a lowering of standards. Some Africans contend that even the first degree of the American college or university is inferior to that of the African (or British) university.

But the situation is in flux because of dissatisfaction with the quality of sixth form-leavers and increasing pressures for production of intermediate manpower at the post-secondary level. There is growing recognition of the possibility for developing alternate forms of terminal post-secondary education at this level. Feasible solutions to the problem can come only after investigation of the implications of alternate approaches. Assistance is needed for such a reexamination of education at this level, as it relates to production of intermediate manpower and to university entrance.

In Nigeria, in spite of declarations supporting sixth form expansion and termination of earlier provisional entry at the universities, there is a growing questioning of the assumptions underlying the sixth forms. Recently the Committee of Vice Chancellors has undertaken a study of the sixth form and of levels of entry. Experiments with fifth

form entry at the University of Nigeria at Nsukka and the University of Ibadan suggest that, in terms of economic and academic needs, it may be desirable to replace the two-year sixth form with a single preparatory year at the universities. It has been suggested by some that the present sixth forms be developed as more comprehensive programs, offering a variety of terminal courses of study. In Kenya, the recent Kenya Education Commission report proposed the establishment of "intermediate colleges."

Recommendation. Changing conditions with respect to university entrance requirements and production of intermediate manpower will provide AID with an opportunity, at the appropriate time, to make significant contributions to the introduction of experimental and innovative patterns in African post-secondary education. At the present time AID should support more thorough examination of alternative approaches by which the requirements of university entrance and the need for intermediate manpower might be better satisfied. Assistance to so-called intermediate colleges or to American-type junior colleges should be cautiously explored. AID should be on the alert to offer assistance by which new approaches and programs may be encouraged.

OVERSEAS STUDY OPPORTUNITIES

Opportunities for study abroad are offered to Africans by a large number of countries. Indeed, scholarship programs appear to be the easiest and most obvious way of providing assistance to these countries. Naturally, the largest flow of students under such programs, except for Liberians and Ethiopians, is to the metropole, Great Britain and France.

Study abroad contributes greatly to the development of high-level manpower and is sought after by many Africans for reasons involving both career interest and prestige. Although local institutions are developing rapidly, study abroad retains high status value, and the total number of students abroad has increased steadily in recent years. In the United States, however, and probably in the United Kingdom, the influx of new students has actually declined, indicating that more students are staying for longer periods of time.

Statistics on Students Overseas. Unfortunately, it is extremely difficult to measure the flow of students overseas and even harder to measure the flow back to their home country. Of the nine countries studied, Nigeria had the greatest number of university students abroad in 1963-64 -- about 2,500 or half the total enrollment of the country's five universities. Liberia had the lowest number of university-level students abroad, about 800; but in relation to population and school enrollment, Liberia sends more students abroad than any other country.

Except for students from Tunisia, Guinea, and Liberia, the largest groups of African students from the countries surveyed have been enrolled in post-secondary technical colleges in the United Kingdom.¹ There were in 1963-64 at least four times as many East African, Ethiopian, and Nigerian students at the post-secondary level as at the university level in the United Kingdom. A substantial number, ranging from 10 to 36 per cent, of those in technical colleges were studying for the General Certificate of Education examinations.

¹Of general interest in this connection is a recently completed study by PEP (Political and Economic Planning located in London, England), which is particularly concerned with East African students in London.

The number of students from all nine countries in the United States is substantial -- about 3,250 at the university level alone during 1963-64. The United Kingdom has almost four times as many post-secondary students from these countries as the United States, and 94 per cent of these post-secondary students are from the Commonwealth countries of East Africa and Nigeria. The percentage of graduate students from these countries, however, is higher in the United States (18 per cent) than in the United Kingdom (13 per cent). The largest group of university students in the United States during 1963-64 came from Nigeria and numbered 1,140. The second largest group came from Kenya and numbered about 800 or almost twice as many as the number of Kenyan university students in the United Kingdom. There are also more than 200 Kenyans at the high school level in the United States, "a legacy of the "airlifts" of the late 1950s.

In recent years the Soviet Union and the Eastern European countries have provided growing numbers of fellowship opportunities for African students. Although it is difficult to obtain exact figures, reliable sources estimate that a total of 1,531 Africans were studying in these countries in 1960-61 -- 616 were in the USSR and 915 were in Eastern Europe -- and that by 1963-64 the total number of African students in these countries had more than doubled.

In 1963-64 there were between 3,000 and 4,000 Africans among the more than 20,000 foreign students in the Soviet Union, while during the same year there were 20,000 Africans among the more than 64,000 foreign students in Great Britain. Most of the university students in the Soviet Union were enrolled at Patrice Lumumba and Friendship Universities. Seventy per cent of the approximately 1,200 African students at Friendship University who had completed one year of preparatory work and were already enrolled in their faculties were studying the natural, physical, or medical sciences.

During the same academic year, 1963-64, about 400 Africans were studying in Bulgaria (although many of these students left in late 1963), 600 were studying in East Germany, and 800 in Czechoslovakia. Although it is known that about 3,000 foreign nationals were studying in Hungary, Poland, and Rumania, no breakdowns by nationalities were available for these countries.

Available information indicates that the proportion of

students at the secondary level in the Soviet Union and Eastern Europe -- many of whom are in technical and vocational programs -- is larger than among students in the United Kingdom and other Western European countries and the United States.

On the basis of these and other reports, some observers conclude that the Soviet Union and the Eastern European countries are training substantial numbers of African scientific and technical personnel.

Relating Study Abroad to Manpower Requirements

Apart from private efforts, a wide variety of scholarships for study abroad are offered by the United Kingdom, France, the United States, other countries, and the African nations themselves. The largest program available in all countries has been the AID participant training program, which prepares an individual in the United States or in a third country for a specific job. The program has traditionally been manpower-oriented. Of the 670 Nigerians trained under the program to date, for example, more than one-third have been trained in agriculture. The ASPAU program, sponsored by AID and administered by the African-American Institute, emphasizes exposure of African students to an American academic environment and has increasingly emphasized manpower priority fields. The program operates in all countries except Guinea, where the AAI administers the participant training program for AID. Only one Tunisian has studied in the United States under ASPAU, but four are enrolled in this program for 1965-66. AFGRAD, the AAI's two-year-old effort to provide graduate training in important fields, is a significant recognition of changing African needs. The largest and most successful African program for study abroad has been the program sponsored by the University of Khartoum under which selected students are sent abroad for graduate studies in fields not available in the Sudan, in preparation for teaching assignments at the University of Khartoum.

Although efforts are being made in some instances to relate study more directly to the manpower needs of the African countries, much of it proceeds in an uncoordinated manner. Large numbers of Africans continue to study in the lower priority fields, such as law and the humanities. In the United Kingdom, for instance, almost half the Nigerians at

the university level in 1963-64 were studying social sciences and the arts, and one-fourth of the Kenyan students were enrolled in the arts. Almost one-fourth of the Ugandan students in the United Kingdom, however, have been studying medicine at the university level, the largest single group in any field, and 30 per cent of the Tanzanian students in 1963-64 were in technology, the largest single group in that field. In the United States in 1963-64, 30 per cent of the Tanzanian students were in the social sciences, as were 38 per cent of the Kenyans, 35 per cent of the Ugandans, and 22 per cent of the Nigerians. The second most popular field for East African students in the United States was the physical and natural sciences and for Nigerian students the second most popular field was engineering.

Tunisia's and Nigeria's universities have now reached a level that makes it possible to scale down undergraduate study abroad, particularly in those fields for which instruction is now available at home, and to channel financial assistance to graduate study abroad in specialized fields and to scholarship or loan programs at home. The other African countries may not reach this point for some years. In some instances, of course, higher education outside the country is the most logical way to train needed manpower. In Guinea, for example, it would be impractical to concentrate on the development of a national university when existing African institutions and study abroad can absorb the output of the existing school system. Unfortunately, political problems complicate these alternatives in Guinea. Perhaps the most striking instance of the conflict of interest between study at home or abroad can be seen in Liberia, where some \$800,000 is allocated for support of students overseas and only \$20,000 for support of students at the University of Liberia.

Education of Africans in the United States. AID's directive requested EWA "to the extent time and data permit" to gather impressions on the appropriateness of education of Africans in the United States in order to provide at least a tentative answer to the question, "How relevant and how effective does United States training seem to be to the students themselves, and to government and private employers in meeting the realities of African needs?" Unfortunately, limitations of time and resources have made it impossible for the EWA study committee and staff to undertake systematic investigation of this matter and to reach firm conclusions. Since substantial numbers of African students have only recently come to the United States and are just now completing

their first degrees, there is not yet sufficient evidence derived from the experiences of returnees to evaluate the problems of reentry and assignment. However, a few generalizations are in order in this summary report.

In the first place, a continuing influx of African scholars is appropriate to promote the flow of American-educated individuals into the leadership groups of these newly developing countries. Hopefully, the interests of the United States are served in this process. But even more importantly, the African countries benefit from new experiences and ideas, just as the United States benefited in the nineteenth century by sending students to Great Britain and Europe for advanced study. African officials testify to the importance of this aspect of overseas study. No matter how fully developed African universities become, there will always be a role for undergraduate study as well as graduate study by some Africans at U.S. colleges and universities. Study by Africans for this purpose, when their home institutions are fully developed, need not necessarily be supported by public funds. Private sources of assistance would be appropriate, and some students could support themselves.

In considering manpower needs, it is evident that too few African students in the United States have elected courses of study that will prepare them for critically needed occupations. This situation appears to be improving, however, since both Africans and Americans have become increasingly manpower conscious in the selection and assignment of students.

The Nonreturnee Problem. The attractiveness of education abroad threatens to reduce its value for African countries, since students, in many instances, delay their return. This problem has at least three dimensions: the prestige of an advanced degree, the availability of sponsorship for capable students, and the adequacy of communications with the student abroad by authorities of his home country. American colleges and universities have aggravated the problem by encouraging capable students to remain in this country for further study, often in low priority fields. Further study need not be harmful, however, if all parties come to understand the advantages of relating it to actual needs at home. Much can be done by both African and American agencies to tighten up the "recovery" of Africans who have studied in the United States. Suggestions to improve recovery have been made in the country reports, and others are made below.

To help prevent cultural alienation of Africans studying abroad, programs should be devised to enable those who study beyond the first degree in a foreign country to return home for appropriate summer work internships or even longer work experiences before continuing their studies. Whenever possible and appropriate, scholarships both at home and abroad should be combined with practical work experience. In some fields, such as engineering and animal husbandry, practical training in the country of study would be very beneficial. Under a new ASPAU contract, for example, up to 25 students can receive practical work experience in accountancy and other fields in the United States. In many fields work experience in the home country would help to reestablish the student's ties and facilitate repatriation. Plans under discussion in East Africa and perhaps elsewhere to provide a year of teacher training, including a teaching internship, for students returning from study abroad deserve encouragement and support.

As scholarship support in the United States shifts increasingly to study at the graduate level, programs should be designed to relate preparation in this country to specific assignments in Africa. This involves selective identification of individuals for study abroad, development of courses of study related to conditions in Africa, and recovery procedures to assure return home. The University of East Africa, with help from the Rockefeller Foundation, is now identifying East Africans in the United States who can be encouraged to undertake graduate study and to return to teaching positions.

In certain fields of study it would be appropriate to undertake some of the graduate work at home, such as a year of clinical instruction in medicine or special field work in engineering.

As the volume of undergraduate study is reduced in coming years, AID should look into the possibility of providing the opportunity for an African student at an African university to spend one year studying in a high priority field in the United States, either as an interruption in his study at home or at its conclusion. This would reduce the strain of choosing between local and overseas study and make it possible for the African student to have the benefits of an experience in the United States without compromising the growth of his home institution.

Too frequently African students are endeavoring to remain in the United States for a Master's degree in the belief that the American Bachelor's degree is not equivalent to the first degree of an African or British university. This belief stems in part from prevailing attitudes in the home country and also from the practice of relating government salaries to degrees. This pattern must be discouraged. This could be done by assuring that American-educated Africans are given full opportunity to perform well. Beyond this, African government and university officials must be better informed by responsible American agencies, both public and private, of the character of the American degree and of American colleges and universities.

Indigenous African universities now are capable of enrolling increasing numbers of students in a variety of programs. Although university development is relatively far advanced in contrast to other levels of education, it is extremely costly. African universities ambitiously have launched a variety of programs, but the cost of these programs, specialized faculties, and relatively expensive accommodations are beginning to strain the capabilities of governments to sustain support at present rates of development.

AID should consider all scholarship programs in the light of this situation with the objective of maximizing the effectiveness and utilization of indigenous universities. The Agency should be guided by the following principles and recommendations:

Financing University Education in Africa. First priority should be given to the development of indigenous institutions, since the long-run objective is to develop these institutions at least to the point where they can prepare adequate numbers at the first degree level. Because of increasingly stringent financial conditions, AID should give close attention to the costs of university development relative to costs at other levels of education. AID should use its assistance to insure that local university facilities are fully utilized, through such devices as subsidies, scholarships, bursaries, and loans. For this reason, AID should give close attention to the university loan program in Nigeria and should consider ways to strengthen this program and start others elsewhere in Africa.

The AID Regional Scholarship Program. In accordance with the principle of giving first priority to the development of African institutions, AID should maintain its regional scholarship program. But this program should be carefully designed and administered to maximize the effectiveness and utilization of specialized educational capabilities throughout Africa in meeting the continent's manpower needs.

Regional scholarships should be made available in African institutions under the following circumstances:

a. When an African university has established specialized programs which are underutilized at the present time and where, for reasons of cost, other countries cannot presently afford to establish similar specialized facilities. In such cases, regional scholarships can help strengthen these specialized programs, enabling the university to assist in meeting the manpower needs of other countries. As a result, it should be possible to increase enrollment and to reduce per student costs. Scholarships might be used to build regional programs as follows: in veterinary sciences at University College, Nairobi, the University of Ibadan, and the University of Khartoum; in agriculture at Makerere College, the Universities of Khartoum and Ibadan, and the University of Nigeria at Nsukka; in law at University College, Dar es Salaam; in medicine at Makerere College and the University of Ibadan; in engineering at University College, Nairobi and possibly at the University of Nigeria at Nsukka.

b. When new universities have spaces available in both specialized and nonspecialized programs. There are a number of institutions that deserve consideration on this basis, such as Cuttington College in Liberia.

Selection and assignment of students in the regional scholarship program must be administered with care. Students who receive regional scholarships should meet the admissions requirements of the receiving university, and scholarships should be directly related to specific manpower needs. Regional scholarships should not be made available to students if appropriate facilities at a home university are available.

In continuing the regional scholarship program, AID should consider arrangements by which a country without specialized educational facilities could be assured continuing admission of its students in return for support of such faculties elsewhere. Without such assurance, countries may overextend themselves in attempting to specialize in a host of fields.

Support for Overseas Study. AID support for undergraduate scholarship assistance in the United States should rank below both financial assistance to African universities for the development of indigenous capabilities and the use of regional scholarships. AID support of undergraduate study in the United States should be phased down in coming years on a selective basis, country by country, and support of graduate study should be increased proportionately.

The ASPAU program has achieved impressive results and represents resources well invested, not only by AID but also by African governments and American colleges and universities. ASPAU must be evaluated and its future programs formulated in terms of changing conditions and needs. In reviewing ASPAU, AID should avoid categorical generalizations and should review the appropriateness of the ASPAU program for each country. Nigeria's indigenous university capabilities are approaching the level at which undergraduate study abroad on publicly supported scholarships will no longer be appropriate except in certain critical areas, while the opposite is the case in East Africa. AID is correct in phasing down the ASPAU program in Nigeria and in increasing scholarship opportunities in countries which can not accomodate sufficient numbers of university students.

AID should avoid support of scholarship programs, either in Africa or the United States, that accept students not qualified for admission to African universities. In the ASPAU program, for example, emphasis should continue to be upon high quality. AID should regard the large pool of ASPAU students in the United States as a source of high-quality talent from which individuals should be drawn for advanced study.

Graduate Education in Africa. In general, AID should not at this phase of educational development in Africa support graduate education in Africa. Graduate education inevitably will be extremely costly, and developments at this level will detract from solid achievement at the first degree level.

Administration of Scholarships

It is common practice to administer financial assistance to university students through some form of scholarship board which, ideally, assigns scholarships according to identified manpower needs. In almost every country efforts are being made to improve the administration of scholarships. The model is Tanzania, which allocates scholarships according to manpower needs and attempts to reduce political pressures in the assignment of awards. In Nigeria the Federal Scholarship Board screens applicants in accordance with the broad guidelines set by the Manpower Board, but the priorities do not seem to be well defined.

One of the greatest problems faced by the African countries studied is the appropriate placement of well-qualified students. Most governments are aware of the importance of placing graduates in appropriate areas of employment, but few have developed adequate machinery to fill the need. The first step in improving placement is the maintenance of student records to enable coordination between prospective employers and graduates. Tanzania and Nigeria have established a national Register of Students which lists individuals by field of study, institution, and expected date of return. So far, however, even these two projects have not yet been fully effective due, in part, to a shortage of experienced personnel. Tunisia has an informal registry, and Kenya is now in the process of establishing one.

Recommendation. AID should encourage improvement of scholarship administration procedures, through provision of operating personnel and technical assistance. Selection processes in most countries have benefited from the participation of organizations such as AAI and IIE. The development of machinery for keeping records of students abroad, with anticipated dates of return, should be encouraged and supported.

APPENDIX: EXCERPT FROM CONTRACT AID/afr-198 (As Amended) BETWEEN
USAID AND EDUCATION AND WORLD AFFAIRS

ARTICLE I - SCOPE OF WORK

A. Objectives

The purposes of this project are to produce for selected African countries an assessment of available data on high-level manpower needs (defined as those occupations requiring post-secondary level schooling or training), a comprehensive study of scholarship opportunities as they relate to high-level manpower needs, and an appraisal of the capabilities of indigenous African educational institutions for meeting those manpower needs. The data and reports resulting from this study will provide a source of information and guidance useful to the Bureau for Africa in the programming of technical and economic assistance.

B. Operational Plan

1. In conducting this study, the Contractor agrees to organize, staff, and administer the study so as to complete an intensive analysis of the above factors, as further defined in Article I-C below, as they apply to the African countries of Nigeria, Uganda, Kenya, Tanganyika (including Zanzibar), Sudan, Ethiopia, Liberia, Tunisia, and Guinea.

2. The Contractor shall appoint a Study Committee which will consist of individuals highly qualified in the field of education in the United States and/or in Africa. The composition of the Study Committee will be in part suggested by the African Liaison Committee of the American Council on Education. Meetings of the Study Committee shall be coordinated by the Contractor.

3. The first phase of the project will be devoted to appropriate orientation of and detailed planning by the Study Committee and the Contractor's staff for the data collection which the Contractor agrees to carry out in the nine African countries as well as in England, France, Belgium, Switzerland, Ivory Coast, Gabon and Senegal, and such other countries as may be necessary and approved by the Contracting Officer. This orientation, primarily in Washington and in the Contractor's offices in New York,

will include study of relevant data on scholarship programs, African developments in higher education, manpower forecasts, and other available information which relate to the scope of the study. Orientation and preparation in Washington will include consultations with various A.I.D./W offices to determine specific problems and needs to which the field study is to be directed, leading to the development of field survey and study plans prior to departure for Africa.

4. The Contractor agrees that its Study Director and Field Staff will engage in the work hereunder in the designated countries. It is understood that data collection and other field work may be carried on in more than one country at a time. During this period, the Study Coordinator and members of the Study Committee may visit the study site in any one or more of the designated countries in accordance with the provisions of Article III (Transportation).

C. Duties

In accomplishing the objectives of this project, the Contractor, among other duties, shall, for the nine selected countries covered by the study:

1. Assess the high-level manpower needs (those occupations requiring post-secondary level schooling or training) of the specified countries, utilizing existing manpower surveys and other information which is already available with no new or special studies being initiated without the prior written approval of the Contracting Officer. A rough estimate of high-level manpower needs shall be made for those countries where no existing manpower surveys are available.

2. Appraise the present and projected (over the next five to ten years) capabilities of post-secondary educational institutions in each of the nine countries covered by the study to train the manpower required for the developmental needs of the country.

3. Inventory the existing post-secondary scholarship opportunities of one or more academic years duration for Africans from the nine countries to study overseas and in Africa. Data collected shall be broken down as far as possible by scholarship donor and shall be grouped into such categories as the following: host African country, other African countries, United States, other Western nations,

Asian Countries, Soviet and Bloc countries, and multinational bodies such as UNESCO, OECD, etc.

Data collected and reporting shall be by individual country and shall be broken down as far as possible by occupational categories and related to (a) available places in African institutions and scholarship opportunities in Africa and elsewhere and (b) numbers of students, by field, studying in Africa and overseas.

4. To the extent time and data permit, the Contractor shall:

- a. Gather impressions in Africa of the appropriateness of the kind, level, and quality of training provided to Africans in the United States in order to provide at least a tentative answer to the question, "How relevant and how effective does United States training seem to be to the students themselves and to government and private employers in meeting the realities of African needs?"
- b. Make an assessment of how effectively U.S. training is utilized.
- c. Make recommendations as to means of improving, either directly or indirectly, (i) the administration of scholarship processes, especially those financed by the U.S.; (ii) the expansion or improvement of indigenous institutional capability to meet manpower needs; and (iii) the effective utilization of trained manpower.

5. Make recommendations concerned with the desirable directions of U.S. Government aid as it relates to (a) post-secondary institutional development per se, (b) scholarship assistance to provide study at African institutions of higher learning, and (c) scholarship assistance to provide undergraduate and graduate study outside Africa, especially in the United States.

6. Perform such other related duties as may reasonably be required to accomplish the objectives of this project.