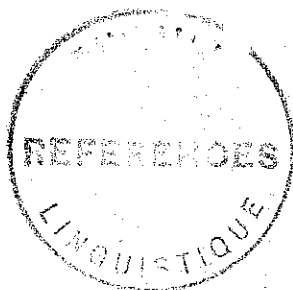


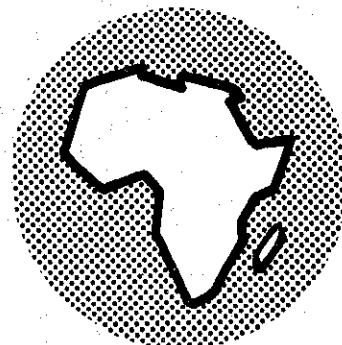
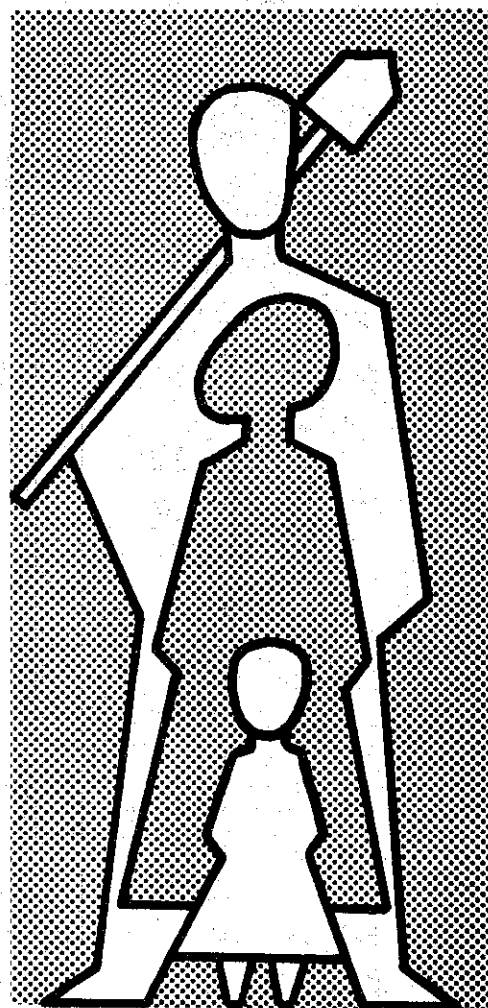
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EDUCATION AND TRAINING FOR DEVELOPMENT IN AFRICA



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HUMAN RESOURCES PLANNING IN AFRICA

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**SELECTED PAPERS
ON
EDUCATION AND TRAINING FOR DEVELOPMENT
IN AFRICA**

Collated and edited by the Manpower and Training Section
Human Resources Development Division
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Addis Ababa, Ethiopia

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FOREWORD

This is the sixth volume in the mimeographed series on "Human Resources Planning in Africa" issued by the United Nations Economic Commission for Africa. In this series are brought together under one volume, for convenience of reference, course materials, selected papers and reports previously presented at particular meetings, seminars or workshops convened by the ECA (or other organizations, in which the ECA had participated) in the field of human resources planning, development and utilization. This is undertaken as part of the Commission's service to its member States of disseminating information of relevance to economic and social development.

In the present volume are assembled a selected set of papers and reports on the specific topic of relating African education and training systems to the needs of economic and social development. The papers and reports were written between 1968 and 1971 by members of the ECA secretariat and were presented at ECA-sponsored meetings or at meetings convened by other organizations. It is hoped that the ideas presented here would stimulate further thought and action-oriented research, and lead to a more effective use of the educational system as an instrument of economic and social development.

I. MEMORANDUM ON EDUCATION FOR DEVELOPMENT *

It augurs well that the Republic of Liberia has this year convened its First National Education Conference. This is a historic opportunity for the nation to reappraise its educational programme, policy and priorities in light of the experiences gained over the preceding decades and the expectations of the years ahead. It is gratifying that this reappraisal is being done by educationists, teachers, administrators and organizations interested in promoting education in Liberia. It is, however, a matter of deep regret that due to prior commitments it has not been possible for a representative of the Economic Commission for Africa to share in the deliberations of the Conference.

In 1964/65 Liberia spent 13.2 per cent of its national budget or 3.4 per cent of its national income on education. Of this substantial expenditure 91.3 per cent was recurrent expenditure and the bulk of it was spent on primary education. At a time when the country is strenuously endeavouring to increase educational facilities it is experiencing growing shortages of essential trained manpower needed for development in the economic and social fields. More foreign experts and trained personnel are being imported to alleviate the shortage of trained personnel. Simultaneously, in the characteristic paradox of Africa's manpower situation, a growing army of unemployed young school leavers is emerging in urban centres.

In these circumstances it is necessary for the nation to seek justifications for the sums of money being spent on education and to ensure that education is purposeful, not only in terms of the preparation of the individual for a place in the Liberian society, but also in terms of the contribution education makes to further growth in the national income, which in turn provides the additional resources for expansions in educational programmes.

The Conference is expected to concentrate its deliberations on major educational problems facing the country. No one knows these problems better than Liberians themselves. However, one has a feeling that most of these problems have their roots in the very educational growth process, a problem of adjustment to the changing role and purpose of education. It is clear that the early phase of educational development in Liberia was concerned with general enlightenment, the training of clerks to run public administration and commerce, teachers for schools and pastors for the service of the church. It was a gentleman's education for those able to afford it.

* The author is the Executive Secretary of the United Nations Economic Commission for Africa. The paper was submitted to the First National Education Conference of the Republic of Liberia in 1968. (Doc.Ref.ECA/MPTR/12-68).

Over the past two decades Liberia has been directing its efforts to the modernization of its economy and the improvement of the economic and social well-being of all its peoples. This national task of development and improvement has called for additional human and material resources, particularly trained manpower for the implementation of the country's development plans.

The trained manpower needed is, however, different from the traditional type of skill requirements. It means not only requirements of men with the needed technical skills and capacity for grappling with the challenge of innovation, but also men with the right attitude and motivation for development. The educational system is expected to provide the training and undertake the preparation of the new men for development. In responding to this task the educational system naturally suffers from the pains of structural readjustment. The orientation desired cannot occur in just one generation since it is a continual process of adaptation of the educational system in response to the demands of economic and social transformation.

A growing demand for trained manpower and for education has resulted in increased school enrolment. Enlarging the pool of educated nationals to ensure a steady supply of trained manpower at all levels, in adequate numbers has meant, particularly since 1955, the provision of more educational facilities for a rising proportion of the school age population. Quantitative increases in enrolment must not be undertaken at the cost of qualitative improvements in educational output. This poses a dual challenge and calls for teacher training facilities and continuing study of local problems.

Expansion in school enrolment in Liberia, as in other African countries, has resulted in imbalances in the educational system. Because the new orientation in the content and purpose of education has not yet had time to leaven the whole educational structure and school curricula, primary schools are producing school leavers who lack both the desired attitude and preparation for engaging in vocational occupations of the types available in the economy: virtually all school leavers want clerical jobs and no one really wants to go back to improve his father's farm. At the secondary level while enrolment in general courses over the decade 1955-65, increased more than four-fold, that in vocational schools increased by less than two-fold. The result has been an accentuation of the shortage of high- and middle-level technical personnel, artisans and skilled workers -- the critical technical manpower that gets the development wheel moving. At the university level, effecting structural changes in the occupational characteristics of student intake and output has been a slow process. Time, money and good will are all needed to effect the desired changes.

It seems to me that any search for solutions to the above problems of the national education system, which besides failing to produce the desired quantity, type and quality of trained manpower needed for development and also contributes to the pool of unemployed persons, should be re-considered in respect of its structure, design and purpose in relation to the economic realities and opportunities of the country.

It might be helpful for this meeting to examine schematically the national educational structure and to seek to identify the main deficiencies in the existing educational systems in relation to the problem of skill shortages. To facilitate such examination and consideration the diagram annexed hereto showing the main possibilities and inter-connexions within a reasonably well designed system of full-time formal education, might be studied.

I do not think that the target of universal primary education is feasible bearing in mind the realities of African economic conditions. I do, however, believe that a first prerequisite for a socially and economically efficient educational system lies in ensuring that at least 50 per cent, say, of the relevant age group enters the primary schools and completes the course so that a sufficiently large number of intelligent persons could have the opportunity of obtaining further education.

I should now like to dwell on some of the diagrams's salient features and to consider some of its implications for the supply of skills in the economy. I realize that the diagram does not represent actual conditions in any one African country; but it does enable us to identify some of the major weaknesses in African educational structures.

In essence, the diagram illustrates two things: that the educational system may be usefully classified into primary, secondary and tertiary levels; and that within the latter two levels alternative opportunities should be available in such a way as to match the full variety of human talent to the main economic requirements of society. It is evident that the range of individual exposure to formal education is quite large; and, it is convenient to consider briefly the qualifications and utility of persons at each point of exit from the system. Ideally all persons who enter the educational system should complete at least four years of primary education, since this is the minimum requirement to ensure basic literacy on a continuing basis; and also for the creation of an unskilled industrial labour force and a receptive peasantry. On the completion of three further years of primary education, young people who leave the system may occupy positions as taxi drivers, shop assistants, messengers, tailors and unskilled factory workers.

After the completion of primary school pupils should pass either to junior secondary or to technical training institutions. On the completion of junior secondary education, people who leave the system should be available for junior clerical positions, and young people who have completed three years in junior technical institutions should be able to begin work in a wide range of trades. People who continue beyond the junior secondary level should receive three years of either academic education or technical training; or, they should be prepared in teacher training institutes to join the staff of primary schools. In economic terms it would be impossible to over-estimate the importance of persons who leave the educational system on completion of the secondary level.

They are generally among the most adaptable persons in the community; and if properly trained they can undertake work which in different circumstances would fall to university graduates.

Persons who manage to complete one of the many courses which should comprise the tertiary sector will obviously have professional qualifications and can be expected to undertake professional work as doctors, lawyers, economists, engineers, scientists and university and secondary school teachers.

Any good educational system should simultaneously be sufficiently flexible to enable students to change direction, even in midstream, and yet also possess levels sufficiently self-contained to give those who complete the work of the level and go no further a sense of satisfaction and achievement. In addition, transition from one level to another should be as smooth as possible. Thus primary education must lay the foundations for an industrial and agricultural labour force and also provide a sufficiently rigorous preparation for secondary education; and so on throughout the process. One further point is that the educational system should have sufficient flexibility to enable persons who have left the system at one stage to re-enter it subsequently, should they so desire, at a higher stage.

Within this framework I should like to indicate rather briefly some of the more pressing current problems and deficiencies in African educational systems. With the appetite for primary education great and growing, the problem of educating and finding jobs for still larger numbers of young persons will become more acute, because education at the primary level has not been self-sufficient and capable of preparing the child for the type of job available to that level of education.

However, the major fault in the educational system, in terms of manpower preparation, is to be found at the secondary level. The basic problem is to ensure sufficient diversity in the system and to induce social attitudes which recognize the human and economic worth of technical and vocational training. At the moment so much attention is paid to academic prowess that provision for much needed middle range mechanical, technical and commercial skills are neglected, and even where attained, despised. With employers at present attaching more importance to paper qualifications than to the basic requirements for efficient job performance, I think it is necessary to make greater provision for the acquisition of technical and commercial skills at the middle-level than for training in some of the prestigious traditional professions.

To achieve self-sustaining economic development it is necessary for a country to aim at the minimum of dependence on foreign resources, including the supply of trained manpower. Economic necessity demands that the economic development of a country should be initiated largely by nationals. In such development well designed training policies and programmes play a most important role in ensuring that nationals are available to provide the much needed entrepreneurial leadership in every sphere of national development.

Within the broad framework I have sketched and with particular regard to the scope and purpose of each level and type of education, it is possible to examine the extent national educational systems are designed to, and capable of producing nationals who could pioneer development activities and give entrepreneurial leadership to others. It is generally admitted that education in Africa produces intellectual élites rather than men and women capable of applying their acquired knowledge and technical skills to finding solutions to development problems. Highly educated persons for instance commonly seek pensionable jobs in the public service and commercial houses rather than engage in pioneering development projects or businesses of their own.

It seems to me that the most effective way to instil in nationals the value of applied knowledge and of the dignity of manual work, is through institutions in which educational and training programmes are rationally blended through practical application. This is an obvious area of weakness in local educational systems for the preparation of Africans to tackle the challenge of development. The educational systems and school curricula at all levels are generally divorced from the real world of agriculture, industry, commerce etc. The former offers no real preparation for engagement in the latter and the experience of the world of work is not utilized to facilitate the comprehension of abstract knowledge. It is, therefore, not surprising that many technical school graduates despise employment in the field or on factory operations, and often have no clue to technical operational problems of the type not previously demonstrated to them in school workshops. The existing educational structure and curricula for the training of men at the "doing" level have not been a complete and full one.

A nation bent on developing its economic potentials must consider the development of its human resources as of vital importance in the realization of its development objective. In this effort education plays a leading role. Its content, purpose and orientation must be constantly kept under review. This is precisely what the developed countries are themselves doing in their efforts to foster innovations in their educational systems, not in terms of education for its own sake but in order to ensure that education produces the men needed for the advancement and application of science and technology to development.

African countries need more innovations in their educational systems and in adopting these innovations it is necessary to ensure that national educational systems are properly designed and equipped to cope with the task and challenge of economic development.

AN EDUCATIONAL FRAMEWORK

Notes

Years of Education		Kinds of Education				Level of attainment for professional positions:
		University Degrees and Diplomas	Professional Training for Accountants, Engineers; Diploma in Technology	Non-University Diploma Courses for Health Service Workers, Technicians etc.	Teacher Training Colleges	
17						Level of attainment for professional positions: scientists, engineers, lawyers, doctors, administrators and managers, graduate teachers & researchers, accountants etc.
16						
15						
14						Economically the most significant sector which needs diversity & flexibility of position and capacity for higher responsibility: office machine operators, technicians, supervisors & foremen, nurses, stenographers, salesmen, sub-professional assistants etc.
13		Senior Secondary	Senior Technical & Vocational Courses			
12				Primary Teacher Training		
11						Level of achievement for sales assistants, junior agricultural extension workers, clerical assistants, machine operators, craftsmen and journeymen, policemen etc.
10		Junior Secondary	Junior Technical & Vocational Courses			
9						
8						Level of achievement required for drivers, shop assistants, messengers, petty repairmen, unskilled labourers & factory hands, apprentices, postmen, tailors & seamstresses etc.
7						
6	Senior Primary					
5						Minimum requirement for continuing literacy & foundation for potential industrial labour force & receptive peasantry.
4						
3	Junior Primary					
2						
1						

II. EDUCATION AND DEVELOPMENT IN AFRICA*

I. Background to Manpower and Educational Planning

Education in Africa has served and continues to serve as an instrument of change. It has enabled Africans to develop their capabilities, acquire new cultural values and skills and prepare themselves for the challenge of development. People's accepted values and aspirations are always changing with time and educational objectives tend to change in response, although at a much slower rate than changes in people's aspirations. These changes tend to occur in phases of varying length of time.

The phases of change in socio-economic aspirations and in educational objectives may overlap, but do not usually coincide because of the time lag necessary to translate these aspirations into meaningful educational programmes. The extent of this time lag is a fair indicator of the degree of resistance of the educational system to change and reform, and a measure of the extent of its isolationism from, or its integration with national overall development objectives. In most African countries changes in educational objectives have generally lagged behind national aspirations, and in some countries the time lag has been as much as one or two decades.

Changes in accepted values and aspirations and in educational objectives influence each other in an attempt to reach mutual harmony. There is, however, a period of disharmony before changes in accepted values and economic aspirations are adequately reflected in educational reforms and vice-versa. This period of disharmony is characterised by strains and stresses in educational structures and policies.

African societies over the past three to four generations have experienced marked changes in their traditional set of values, manifesting in the demand for a type of education that will facilitate the realization of new values and aspirations. These changes have occurred in fairly defined periods, each with its problem of disharmony, and at varying points of time in different countries.

Formal education came to Africa from Europe during the second half of the 19th century when Europe embarked on a crusading mission to "civilize and christianize" Africa. This age of "civilization", more accurately "westernization", lasted till the first two decades of the 20th century. This westernizing mission was the most dominating external factor which

* The author is the Chief of the Manpower and Training Section, Human Resources Development Division, United Nations Economic Commission for Africa. This paper was prepared as a background document for the eighth Study Seminar on Development Planning: Employment, Education and Manpower, Kampala, 4 May-13 June 1969, which was organized by the Institute of Development Studies, University of Sussex.

influenced Africa's set of traditional values and aspirations. The influence resulted in the abandonment of a substantial part of the traditional way of life, the acceptance of the whiteman's religion, language and culture and the development of commercial activities.

A basic African aspiration during this period of westernization was the desire to refute any assertions of African inferiority cast up on them by reason of their adherence to customary practices and of their enslavement, and to claim the equality of man. Education was regarded as the passport to be equality with the whiteman, and, therefore, the type of education sought was the same as that available to Europeans. To have anything different, such as an educational curricula based on African environment, meant acceptance of intellectual inferiority. Educational objectives and the content of education at this period was in every sense European, and it provided a gentleman's education with a good grounding in the classics, liberal arts and religion. The colonial economy at this period demanded only educated white-collar workers — personnel for maintaining the whiteman's law and order, his commercial interests, his culture and his religion. A major educational problem of this period was one of getting sufficient numbers of free Africans to go to school. 1/ The prevailing educational system was not obliged to produce skills for economic transformation.

From the 1920s through the early 1950s Africa was again experiencing a wave of new set of values and aspirations. Resentment of colonial rule grew more rife. The Great Depression of the 1930s brought home the danger of absolute dependence on peasant export economies. The major aspirations at this period were political independence and economic diversification as a means of overcoming the prevailing poverty, ignorance and disease.

Education was expected to prepare Africans for the new values and aspirations. The colonial "gentleman's education" was re-examined and found unsuitable for the new task. African educationists began a call for a truly African education — one that developed the mind and hands, and enriched African values. The Phelps-Stokes Commission on educational situation in West Africa (1919) and in East Africa (1924) exposed the lack of adaptation of education to the socio-economic milieu and African aspirations. Even some of the Colonial Powers recognized the need for change. The United Kingdom Government, for example, issued a memorandum in 1925 making its official policy favour the adaptation of African education to the mentality, aptitudes, occupations and traditions of the people. 2/ Another memorandum in 1935 laid emphasis on the need to relate education to community life and stimulate African initiative, while that of 1948 emphasized the need for education to promote African citizenship in preparation for the assumption of the responsibility of democratic self-government. 3/

1/ The memory of centuries of European exportation of African slaves was still fresh and the schools established by whitemen were suspect.

2/ Educational Policy in British Tropical Africa, Cmd 2374 HMSO, London, March 1925.

3/ F.H.Hilliard: A Short History of Education in British West Africa, London 1957, pp.166 and seq.

By the late 1940s African demand for education had more than caught up with the supply of educational facilities. The main problems, however, were budget limitation and the lack of facilities for training skilled hands. The aim of education was to prepare Africans for eventual political independence, but it was not yet obliged to develop technical and vocational skills for achieving economic independence.

From the late 1950s a new set of values and aspirations began to emerge. Political independence was in sight, or seen as a future possibility. In the 1960s dozens of African countries achieved political independence. African personality was asserted the world over although the mark of poverty remained deeply engraved in the people's living conditions. For the masses political independence did not bring any real change; it failed to usher in the expected economic betterment for all, and many African governments humbly begged for budget subsidies to carry on state services. Although development plans were launched to fight poverty and promote economic independence, the results were disappointing, to a great extent for lack of executive capacity.

African educational systems were not able to provide, nor capable of providing the required new skills based on science and technical education. Belatedly, more efforts were directed to expanding school facilities and enrolment at all levels and to adjust school curricula to provide facilities for training in technical and vocational skills. These developments were ill-timed and not successful in producing the type and quantity required of trained manpower, with some work experience, to cope with the implementation of the development programmes launched at this period. The real bottleneck was that of trained manpower shortage at the middle and higher levels, especially managerial, technical and professional personnel.

Political pressure from the electorate for African leaders to demonstrate the promised manna of independence resulted in a too rapid expansion of the inherited colonial type educational system, at all levels, and this created a new problem in time -- unemployment among educated persons. This problem is most serious among primary school leavers who in their frustration now realized that the academic education they have had did not fit them to earn a living in either the modern or the traditional sectors of the economy.

It needs to be observed that whilst the preceding analysis and phases of change relate closely to the experiences of many countries in Africa South of the Sahara (excluding the Republic of South Africa and the territories under Portuguese domination), however in individual cases, experiences differ in depth and phasing. This follows from the fact that these countries have been, and are still at different stages of social, political, cultural and economic advancement. The same was, and is still true of their educational systems and the objectives educational institutions were meant to serve. As countries moved towards political independence at different times and embarked on restructuring their social and economic systems at varying rates of development, their awareness of and degree of concern the basic weaknesses in their educational system also came at varying points of time. This equally applies to the conviction of their colonial rulers that the time was overdue to relate education more closely to the environment and aspirations of dependent peoples.

In the areas of the continent still under foreign domination, educational objectives are still being influenced by African desire to claim equality with the whiteman, a desire which influences the demand to have equal and non-racial educational facilities. In these areas the colonial overlords are yet to be convinced that indigenous peoples need education for development in preference to that which continues to make them serve as the underdogs and unskilled workers in racially mixed communities.

The disharmony between educational quality and objectives, on the one hand, and economic development patterns and objectives, on the other, has created a problem of disequilibrium in trained manpower supply and demand. This is the basis of the present task all African countries are endeavouring to tackle, that is, to plan education, manpower and employment in order to achieve accelerated economic and social development. The tools for this task are not yet well polished and African trained users are few. There is still need for more training workshops to perfect the tools, train more users and convince educationists, manpower planners and economic planners to work in concert for the effective development and utilization of African human resources.

II. Planning Education Within the Framework of National Development

It is generally recognized that human resources is at the root of economic and social development, and that education and training enable man's potentials to be developed for the purpose of realizing his aspirations in his fields of preference. Therefore, education is not only an end in itself, but also an essential means for fostering economic growth and social change.

Man does not live by bread alone. Education must cater for every aspect of development needs whether social, cultural, political or economic. For the developing countries of Africa it is increasingly being recognized that all other aspects of development, including education itself, hinge largely on economic capacity to mobilize resources for development. A hungry man who may also be half clad and debilitated by disease is unlikely to have a constructive interest in cultural and political development. Better living standards and the economic means to enjoy that standard can be a strong enabling factor in developing good citizenship and greater capacity to contribute to national income. In these circumstances, it is understandable that education in developing countries should be more pre-occupied with the challenge of development, calling for new skills and the right attitudes than with education as an end in itself.

In planning education for development therefore, due cognizance must be taken of the basic weaknesses and imbalances in African educational systems, and measures must be designed for their elimination.

First Weakness

A major weakness in the educational system is the imbalance between educational output and skilled manpower requirements for national development.

In terms of occupational skills and development attitudes, the "mix" of educational output at both secondary and higher educational levels has failed to match the pattern of present-day manpower requirements for national development, let alone any built-in potentials for the skills of tomorrow. Often the education provided does not take adequate account of the educational and manpower implications of an economy in transition and of local potentials for development. The failure to orient primary education to the structure of the economy, to urban and rural development potentials and to employment opportunities; the concentration of secondary education curricula on the preparation of students for university entrance, the lack of adequate attention to, and facilities for vocational and technical education; and, the tendency for African universities to preoccupy themselves with traditional patterns of graduate production resulting in the overproduction in some countries of graduates in fine arts and the humanities, are obvious examples of educational programmes that are out of step with the current needs of national development.

ECA studies in the field of African higher education and manpower requirements reveal that the prevailing trained manpower shortage is largely the result of higher educational institutions failing to develop training programmes that are designed for the needs of a changing national economy. Faculty and curricula structures are largely the hand-over of overseas foster universities and benefactors. Devotion to the principles of academic freedom and loyalty to an international intellectual community have rendered the existing pattern of university education somewhat sacrosanct. Few, if any, of these African institutions have realized that it is their major task to come to grips with the development problems in agriculture and industry, and to produce the critical manpower needed in every sector of national development. It is no surprise that "a large number of subjects essential for accelerated development and structural change of the economy are either missing or inadequately provided for", and that "the organization of teaching appears to be based too little on the current and future needs of the community and to be isolated from a grasp of the realities of the development process." 4/

Second Weakness

There is a traditional imbalance within the educational system, both between the various levels and types of education, and between branches within a given level. This is due to an accident of history as in the growth of education the various constituent parts and types of education have developed haphazardly. In the 1960s, for example, there have been marked increases in primary, secondary and university education facilities. In terms of the Addis Ababa Education Targets, expansion in school enrolment had by 1965 reached and surpassed set targets only at the post-secondary level and in teacher training for primary schools and for university teaching. By contrast, enrolment at the first and second levels and especially in technical and vocational classes and the training of teachers for secondary school teaching was much below target.

4/ High Level Manpower for Multi-national Development, Note by the ECA Secretariat (mimeograph), April 1969, p.2

Another imbalance in human resources development through education is the wide discrepancy between the enrolment of boys and girls, especially at the second and third levels. A contributory factor in this discrimination is the failure of the school system to introduce girls to, and provide facilities for training in the non-traditional vocational skills required for work in industries, commerce, laboratories and the services.

Third Weakness

Perhaps the most serious weakness in the educational system is the imbalance and growing gap between quantitative and qualitative developments in the system. This weakness is not unrelated to the belated effort to expand educational facilities in face of political pressure for equality of educational opportunities, the urgent search for trained manpower for development, and the attempt to meet these demands with limited material and teacher resources. The expansion undertaken, in most cases, especially at the primary level, was out of proportion to available resources. This has led to a deterioration in the quality of educational standards, in the quality of teaching staff, materials and methods, in inadequate organizational and administrative arrangements for school supervision, while the character of school graduates has been far from satisfactory to both parents and teachers. A further result of the imbalance and drop in quality is the vast waste in the school system through school drop-outs and high failure rates.

The prevalence of the above main weaknesses in the educational system clearly show that educational development in the region has for too long suffered from lack of comprehensive planning and from the isolation of educators from the realities of the communities in which they live and which education was meant to serve.

III. Obstacles to effective planning of education for development

In planning the integration of educational programmes with overall national development plans, especially with due regard to manpower and employment requirements, a number of constraints and obstacles have to be identified and eliminated. Important among these obstacles are:

- (a) Attachment to established academic standards and curricula, frequently resulting in opposition to reforms in curricula, content and orientation. This opposition can be found among educators, teachers and parents alike who feel that established standards are better.
- (b) Ministries of Education have enjoyed long established tradition of autonomy in formulating educational policies and designing curricula without regard to the manpower needs of the economy. In the same manner university institutions frequently insist on non-interference by outsiders in determining their courses and academic standards. Integrating educational programmes with manpower programmes involve collaboration between trainers, planners and manpower users. Lack of appropriate procedures

and machinery for regular and sustained contacts between these parties constitute a serious obstacle to educational planning for development. Educators who lack such contacts find it difficult to develop a proper conception of economic perspectives influencing manpower requirements, which should in turn influence curricular structure, content and orientation.

- (c) Overall national development plans and manpower programmes may either be unavailable or insufficiently precise in terms of the educational "mix" of manpower for development and to which education programme is to be related.
- (d) Inadequate educational and manpower data for comprehensive and long-range educational planning.
- (e) Lack of funds for educational research, for curricula development and programme design in order to improve the quality of teaching and of school graduates.

To effectively integrate educational programmes in manpower and overall development plans it would be necessary for a country to clearly spell out its national development objectives and policies. Clearly defined educational objectives and priorities must also be established within the framework of overall development strategy. Resource allocation for manpower development through education and training must reflect set priorities.

The basic weaknesses in the educational system, especially the orientation and content of curricula and the leakages in the system must be identified and eliminated.

Planning can hardly be undertaken without relevant statistics. Educational statistics should be developed with planning needs in view.

Short, medium and long-term educational programmes and perspective development plans are necessary for considering possible adjustments in the current and future education and training pipelines in order to influence the quantity and quality of manpower output and to relate this to anticipated or current structural changes in the economy.

An appropriate national machinery and capable staff for educational planning should be developed to ensure permanent liaison between education planners and teachers, on the one hand, and between education planners, manpower and economic planners and labour users, on the other. It is equally important that appropriate machinery should exist to promote consultations between the agencies concerned with human resources development.

Programmes should be initiated with the support of Teachers' Associations to encourage teachers to develop sufficient acquaintance with life and work in the real world of industry, agriculture and business.

To ensure that education does not create problems of unemployed educated persons, the educational system at each level must be designed to be self-sufficient in terms of giving every school leaver from a given level and type of education a place in the economy to earn a living, while at the same time permitting an upward advancement either immediately or later for those having the mental capacity and opportunity to pursue further studies. Curricula structure for each level and type of education must therefore be closely related to national economic conditions and prospects.

IV. Education and Employment Planning

Socio-political objectives may justify a programme of universal education at the primary level and education for any one with demonstrated mental capacity at higher levels. Unless such a programme is carefully related to the capacity and structure of the economy to fully absorb all educated persons, an expanded educational programme can act as a direct cause of educated unemployed. Many African countries are known to be having serious problems of unemployment among thousands of primary school leavers, while some countries are having a rising volume of unemployment among secondary school leavers. To avoid making education accentuate the present level of unemployment the following alternative choices may be considered:

- (a) Limit educational expansion at each level to the number of educated persons that can be effectively absorbed by the economy.
- (b) Adjust the development pattern and structure of the economy to create a greater absorptive capacity employment-wise for school-leavers at the prevailing quality and type of education — in this choice productivity and the rate of economic transformation may be somewhat adversely affected.
- (c) Provide a system of education fully geared to development needs and which provides training for employment, including vocational training that will enable those not employed by others to create employment for themselves through engagement in agriculture and petty businesses.

None of the foregoing alternative choices can by itself eliminate the risk of education contributing to unemployment. Educational planning should therefore have some employment objective built into its strategy. This should lead the education planner to consider the following action:

- Estimate the stock of existing level of employment by occupational category and educational mix;
- Estimate the volume of educational enrolment and output by level and type of education, year by year, over a plan period;
- Estimate planned employment opportunities, overall, sectoral and occupational, year by year, over a plan period;

- Relate educational output to employment opportunities for trained manpower and strike a balance, overall, sectoral and occupational -- the net results will indicate manpower shortage or surplus trends and magnitude.

Should future unemployment trends indicate a higher unemployment magnitude among educated persons, then action must be taken to review educational enrolment policy and curricula structure. This may mean slowing down enrolment and consolidating schooling facilities for certain levels and types of education. It may also require a shift of priority from quantitative to qualitative improvements in the educational system. Curricula reform may lead to a diversification in skill-mix, reduction in facilities for training in surplus skills and expansion in facilities for training in skills that are in short supply. A country faced with a rising trend of skill shortage may find it necessary to expand educational facilities.

To reinforce adjustments in educational policy and programme, structural adjustments in the economy are also necessary. The pattern of capital investment and choice of technology may be modified in favour of job creating investments, provided higher productivity and efficiency can be sustained. This exercise of mutual and progressive adjustments can be effective only when educational planning, manpower and employment planning are integrated in overall national development plans.

A consideration of the manpower and employment objectives of educational planning will be incomplete without giving due attention to rural development and educational requirements. To achieve structural transformation in rural economies, skills and development attitudes receptive to innovations are needed. Not only is agriculture to be modernized but also other sectors of rural economies, ranging from small-scale processing and craft industries to supporting economic activities, have to be developed to create extensive employment opportunities. To cope with this overall development education in rural communities must, in addition to providing training in basic disciplines also provide opportunities for acquiring vocational skills which are essential to rural modernization. This will make it possible for school-leavers to seek gainful employment in their locality and at the same time foster the introduction by young educated persons of new skills and ideas into rural economic activities. Such an adjustment of educational curricula to rural economies does not imply separate educational standards for rural peoples. It only means that educational curricula and the orientation of educational objectives should be more closely related to local socio-economic milieu.

III. EDUCATION IN THE RURAL AREAS*

Draft Outline Proposals for a Modified Structure

The relationship between education and rural development

The optimism held at the time of launching the first United Nations Development Decade for more rapid industrialization and overall growth of the economies of the African and other developing regions has not been realized. Not only has there been a diminution in the rate of flow of external development assistance but also very little headway has been made in securing better terms of trade for the developing countries. The earlier mood of optimism prevailing in the developing countries of Africa is coming to be replaced by a sense of sober realism and a growing willingness to face up to the facts of the situation that development is likely to be a long and arduous process, and that nobody else is going to do this except the Africans themselves. This is a very important lesson learnt from the first Development Decade. There were also two other lessons learnt. Firstly, that, for the foreseeable future, African economies are likely to be predominantly agrarian, and since between two-thirds to three-fourths of the total population would have no option but to earn its sustenance from the land development strategy dictated the highest priority to be given to the development of the rural economy and an improvement in the quality of living for the rural peoples. Secondly, that the key lever to move in initiating this process was the rapid development of the human resources of the region, from high-level managerial and organizational skills down to the factory hand and the worker in the field. In this regard, it was recognized that the education and training of human minds and hands constituted the single most important component of a human resources development programme. It is for these reasons that the Economic Commission for Africa endeavours to promote serious thinking and energetic action on the many complex issues related to rural education.

If, at first sight, there appears to be an artificial dichotomy of the educational system into an urban and a rural sector implied in this approach, the answer is that the parameters for educational planning and policy have already been set by the social context, which, as already noted above, is predominantly rural and agrarian. It is axiomatic that if education is to serve the urgent needs of African society; if it is to be, in other words, socially significant and relevant, then it must be deliberately designed to be development-oriented, to serve as an instrument of economic and social development. This means that greater emphasis would need to be given to the investment function of education, though this does not imply a total neglect of the consumption function. Furthermore, to focus attention on the specific needs of the rural economy and the rural people does not imply doing violence to the organic unity of the national educational system, though

* This paper, prepared by the ECA Secretariat, is based on the keynote address delivered by Mr. Robert K. Gardiner, Executive Secretary of the United Nations Economic Commission for Africa at the Commonwealth Conference on Education in Rural Areas, Legon, (Ghana), 23 March - 2 April 1970, and was presented as a working document (Document E/CN.14/W.P.6/31) to the ECA-sponsored Expert Group Meeting on Education and Training for Development in Africa held in Addis Ababa from 7 to 12 December 1970. The report of the expert group as reproduced in this monograph.

it could imply a shifting of resources in national development. For the maximization of the welfare of all the peoples in developing countries, social justice and economic rationality indicate fairly early changes in the structure and balance of the national investment programmes in the direction of relatively greater inputs into the rural sub-sector. Whilst recognizing the obvious contribution of the urban sector to the development process, it is nevertheless the consensus of informed and experienced development planners that in the African region the foundations of national progress must be well and truly laid in the rural economy.

Elements of a rural development policy

Educational planning and policy for its part must be founded upon an agreed rural development policy and programme - economic and social - within, of course, the framework of an overall national development plan. In the African view, the concept of development of the rural economy does not mean limiting the economic activities of the rural population to agriculture, i.e., farming, the growing of crops and raising of animals, though the agricultural component may very well be a large one, and even a major one. It is their view that after identification of the natural resources of the rural areas, a diversified economic structure should be built up, comprising, in addition to agricultural diversification, appropriate industrial undertakings for processing agricultural products and for manufacturing goods, commercial establishments and service industries, public and private. A rural development policy such as this is guided not only by economic considerations of increasing the volume of physical production but also by social considerations of increasing the volume of employment for a population which is characteristically unemployed seasonally or chronically underemployed, which in turn is a major contributory factor to the prevalent rural exodus. Such an employment objective in the final analysis involves the generation of new jobs, a wider range of farming and non-farming occupations at varying levels of skills than are presently available in the rural areas. In addition, an important element of social and economic policy is the limitation of the rate of population growth to avoid ending up with what Mr. Robert McNamara, President of the World Bank, recently described as a "treadmill" economy.

A programme for raising the levels of living of the rural population would need to be approached in a comprehensive and integrated manner, in contrast to the ad hoc, unidimensional actions in the past. Even to achieve the narrow goals of an increase in the rate of economic growth and the volume of physical production in the rural areas, there are other concomitant measures to which governments are committed, for it is now recognized that economic development is a complex process, involving many interdependent variables of a physical, financial, scientific, technical, organizational, educational, nutritional, social, psychological and cultural nature. Experience has shown that the absence of one or the other of these variables in the total mix does affect the achievement of the goals set. Therefore, in addition to the establishment of new industries, improvements would need to be effected in the power supply, transport and communications, credit and marketing facilities, health, nutrition, family planning, environmental sanitation, housing, schooling and vocational training, and general intellectual

and cultural stimulation. Practical strategic considerations would seem to indicate heavy investment of resources in certain geo-cultural areas with promise of quick development, which are the small rural towns or village complexes which have the potential to develop into urban centres. To stem the rural exodus to the presently overcrowded capital cities, it would be necessary to plan and develop a series of intermediate towns with a modicum of urban amenities to act as a kind of social, cultural and economic focal centre for the surrounding countryside.

The elements of a rural development policy, from which the rural educational policy is derived, then comprise something more than the modernization of agriculture alone. An acceptable and viable policy, in the light of the predominance of the rural sector in the total population settlement pattern, is one which sets out to change and modernize the total rural physical and social environment. The prospect of a national economy in which a high proportion of an active labour force is engaged in rural and agrarian activities is not as calamitous as it would appear if we bear in mind the relatively high standards of living achieved elsewhere, as for example, in Japan where 44 per cent are employed in agriculture. The main problem in most parts of Africa is the transformation of the rural economy from a subsistence to a market economy, involving concomitant changes in social institutions and attitudes. What is required is the ability and willingness on the part of the people to bring about these changes in their lives, and the role of education in rural development is just this.

The existing pattern of rural education

If we are to evaluate the effectiveness of the existing pattern of rural education in Africa by the twin criteria of the ability and willingness of the rural people to transform their physical and social environment, there will be unanimity in the finding that the education provided has failed dismally. The evidence of rural poverty and underdevelopment, conjoined with the unwillingness of youth and able-bodied adults to stay in the rural areas under these conditions, resulting in increased migration to the already overcrowded towns and cities; and the growing problem of the unemployed school leavers, all bear sufficient testimony to this failure of education to prepare Africans for a better life. The only mitigating factor is that the failure may not entirely be placed at the door of the educationist. Education, as already observed a little earlier, is but one variable or agent in the development process, and there are well-known limitations to the ability of the school to initiate and effect economic and social change. Philip Foster has rightly drawn attention to the relationship between education, income expectations and vocational preferences. Rural employment is notorious for the low income returns, and when a rural lad seeks a white collar job in the cities, with prospects of higher income, can we say that his behaviour is irrational? Much of the failure to bring about a change in the economic and social conditions of living in the rural areas is due to the absence of a co-ordinated and integrated development policy and programme, and above all to the lack of a determination to implement such a policy effectively by allocating sufficient resources.

The system of education which produced such a leadership was established by the ex-colonial regimes, and received their inspiration from the educational theory and practice of the metropolitan power, and were transplanted from one social context to another. There is, however, ample historical evidence to show that the very same regimes were not unaware of the different circumstances prevailing in their colonial territories for various education commissions of inquiry did in fact advocate a more practical form of education related to the agricultural and handicraft pursuits of the majority of their subjects. But such a policy of differential education was never carried out with any vigour for two main reasons. Firstly, there was resistance from the Africans themselves to such differentiation, which they, with some justification, viewed as an attempt to fob them off with an inferior kind of education. They had interpreted the power of their rulers to lie in the kind of literary, humanistic, classical education which the colonial administrators had received, and so demanded the same for themselves. Unfortunately, the African did not have the opportunity of seeing the kind of occupations in which the majority of the English and French workers and peasants back in the metropolitan country were employed, and the kind of manual, vocational orientation given to their education and training. They met only the white collar category of colonial officials in the territories. This gap in the knowledge of the African prevented the leadership from seeing the real sources of power of their colonial rulers. Secondly, the colonial regimes were by no means committed to a philosophy of development of the colonies for the benefit of the indigenous people, and so even those who had advocated, and implemented, a practical, work-oriented education tended to see this more as a character building exercise in the subsistence farming framework than as part of a larger and deliberate economic and social programme for eliminating rural stagnation and poverty, and for transforming the rural economy. Colonial regimes just did not have the mind and the will to engage themselves on this kind of massive development programme. Furthermore, missionary effort concerned primarily with its proselytization programme and the generation of teacher and preacher cadres for this purpose also emphasized literary, academic studies. Furthermore, personal individual achievement and success was nurtured - a value borrowed from another culture. Consequently, education was not society-oriented and development-oriented.^{1/}

The rural primary schools that came into being were patterned after the urban schools where the instruction received sought to lay the foundations for higher levels of literary, humanistic studies. Each cycle or level of education was viewed as a preparation for the next cycle or level of schooling, and not in terms of its preparation for life and work. Since only a very tiny fraction of the output of the rural schools could hope to proceed to further studies, generally in much too expensive boarding schools and colleges, the total educational effort was in the final evaluation perfunctory and socially irrelevant. Even after independence, though we know better and would wish it otherwise, rural educational objectives and practice have not changed discernibly, so heavily is the system weighed down by inertia, custom,

^{1/} See also Julius K. Nyerere, *UJAMAA: Essays on Socialism*, Chapter 4, Education for Self-reliance. London, OUP, 1968.

tradition, and fear of innovation. The few farm schools, agricultural and vocational training and demonstration centres, and agricultural research institutes are almost like oases in a vast desert of rural ignorance, poverty, disease, and apathy. The great weakness of the education system is derived from the narrow understanding of what constituted real education for peoples living at subsistence levels. This resulted in an emphasis on the formal system, and on children and youth, to the neglect of the non-formal and the adult productive agent. This in turn is due as much to a neglect of historical experience in the now advanced countries, at similar stages of development, as to the policy of educating an élite, mainly clerical cadre, which would co-operate with the authorities in colonial administration. The adoption of the policy of mass participation in economic and social development is relatively new in Africa, fostered by the inevitability of the advance of subject peoples to a mastery over their own resources and affairs.

The present pattern of education provided for the rural population is inadequate to cope with the tasks of modernizing and raising the levels of production and of social well-being. For one thing, it does not succeed in instilling a sense of commitment to development effort, self-reliance, and positive attitudes towards working with one's hands; nor does it equip youth and young adults with the appropriate technical, scientific and mechanical skills for engaging in economic production and in the social services. For another, the system does not retain long enough the pupils who managed to get into schools to profit by instruction, and we are all acquainted with the attrition or wastage problem. The almost total absence of a science culture in the schools, when progress in agricultural production and rural industries is dependent so much upon the applications of science and technology is another serious deficiency. Furthermore, there is the great scarcity of teachers with the right preparation and sympathies for leading the cultural and economic revolution in the rural areas. The poor quality of teaching, accommodation and equipment, and standards of attainment are an ever present inducement for an ambitious parent and offspring to wish to escape to the relatively more hopeful urban institutions and environment. These observations are by no means new. But the conditions show no promise of early change, and so they would bear reiteration in order that they might stimulate earnest minds to tackle the problems of education and rural development in a systematic way.

Rural educational policy and objectives

What then should be the policy and objectives of a system of rural education? For education to be socially significant it must be socially relevant. The socially relevant action for today is to press on with economic and social development; or, as some would have it just "development", meaning that one cannot really separate the economic component from the social and vice versa, not only in the end state of human welfare but also in the very process of its attainment. The elements of a development policy to augment the material, physical, social and cultural well-being of the rural peoples have been stated earlier in this paper. To achieve the targets of development formulated by the planners and set by their national governments it would be necessary to mobilize the total human resources of the nation, but it is

believed by many that rural development can be accelerated only if the rural peoples themselves -- young people and grown-ups, men and women -- are mobilized in the effort. The role of education will be to provide them with the skills for the numerous tasks and to motivate them accordingly. It should be recognized, however, that the redirection of the motivations towards achievement, personal and group, is a complex process and that it is a product of the total environment -- economic, political and cultural, and, therefore, the other complementary and supplementary economic and social measures referred to earlier would need to be implemented. For example, the programme of job training must be matched by the creation of appropriate jobs. People will change given the right incentives.

Educational policy will need to be development oriented, and comprehend the whole of society, i.e., children and youth, adult men and women. An outcome of this concern for education to be fashioned as an instrument of national development would mean that allocation of additional resources to education will be governed by considerations of economic and non-economic returns to investment. It would sometimes become necessary often to resist the social demand for expanded educational services since resources being scarce, choices have to be made and priorities established. This way of thinking about the development role of education would, perhaps lead to stress on the utilitarian aspects of education, and, one may ask whether in the current economic circumstances of Africa this is not, indeed, a desirable discipline to exercise on one's pattern of spending. There is need to increase the production of capital and consumer goods, and the material welfare of Africans depends upon how well the job is done. One cannot help being utilitarian in one's outlook for one would only exchange goods and services that have economic utility to other people. The transformation of subsistence economies to market economies means precisely this. It should be noted, however that due emphasis on practical, utilitarian objectives in education does not imply a total neglect of the liberal, non-utilitarian aspects -- the aesthetic, moral, cultural and religious values of education. For education to be development oriented it may very well become necessary to begin re-scaling the prevailing value system. African development will be served by men whose minds can grasp the laws of nature and whose hands can re-fashion the raw materials of nature to suit human ends, in addition to efficient administrators and clerks.

Education must be viewed as a continuous, life-long process and, therefore, provision would need to be made for the young as well as the adult population. Where education is deliberately used to contribute to an increase in the volume of production of goods and services a policy needs to be adopted to improve the performance capabilities of the adult, active labour force. The young represent future supplies of labour, whereas the adult working force is already engaged in production. This calls for the allocation of greater resources to the education and training of persons in the working age group.

Furthermore, a diversified and flexible educational structure is called for to provide for varying needs, abilities and interests. Flexibility in educational arrangements and entrance requirements is very necessary to allow

for progression and up-grading on the educational ladder of school-leavers and adults. For those who have not had the benefits of formal schooling, and where the new programme of education and training is non-formal in approach, emphasizing the acquisition of practical skills and new attitudes, a strict adherence to formal educational requirements for progression may very well prove to be restrictive of the development of human resources. But this is something that has to be worked out empirically since countries are at different levels of development economically, socially and educationally. A comprehensive policy in education would be directed to establishing a system of formal and non-formal, in-school and out-of-school, academic and vocationally-oriented education ranging from the primary to the tertiary level. Thus the educational services provided in the rural areas should be comprehensive and comprise not only the usual programmes from primary schools to community education through women's institutes, farmers' training center, young farmer's clubs and extension projects but there should also be opportunities for attending rurally located tertiary level institutions engaged upon the specific study of rural problems. A balanced and comprehensive system of rural educational facilities is a sine qua non for integrated rural development.

For education to make its maximum impact on development the content of education would need to be differentiated in accordance with the conditions and requirements of rural economic and social development. This calls for careful study, experimentation and continuous appraisal of the curriculum and syllabuses. A sound system of rural education would give due emphasis to matters concerning food production; farm management; organization of marketing and co-operatives; health, nutrition and environmental sanitation; science and its applications; mechanical and constructional skills; and basic communication skills. Though a policy of differentiated education may be adopted, nevertheless, it has to be insisted that standards of teaching and learning are no less inferior to that obtaining in the best of the city-located institutions. At any stage the rural student ought to be able to transfer to an urban secondary or tertiary institution and cope with the level of work there. Similarly, a rurally trained scientist, teacher, nurse or artisan ought to be able to work efficiently at the same kind of jobs in urban employment. It is envisaged that as the total national economy grows the additional trained labour required will be supplied from the pool in the rural areas.

The educational objectives for the rural population may be summarized as follows:

- (i) To contribute to the modernization of the rural economy and rural social institutions;
- (ii) To raise the general level of intellectual and cultural attainment of the rural population;
- (iii) To impart basic communications skills and knowledge of numbers, which are essential for participation in modern economic and governmental operations;

- (iv) To impart a general education in science and social (or civic) studies so as to provide knowledge and understanding of the rural environment - its resources, limitations and opportunities; to generate a ferment in the mind to want to change the conditions of rural poverty and stagnation; and, to create receptivity to innovations in organization, technology, modes of labour and social relationships;
- (v) To inculcate appreciation of the role of agriculture and agricultural production in economic development;
- (vi) To equip men and women with manual and technical skills, through pre-vocational, vocational and on-the-job training schemes, to engage in farming operations, rural industries and handicrafts; and, generally to accept the dignity of physical, manual labour;
- (vii) To impart knowledge of the basic laws of health, nutrition and hygiene - personal and community;
- (viii) To impart a knowledge of science and scientific methods, and to develop the habit of scientific thinking in coping with natural and social phenomena;
- (ix) To impart knowledge and skills to women on household management and child care;
- (x) To impart knowledge of family planning to adults so as to control and regulate population growth.

The work undertaken in rural schools, colleges and training centres would have to be as stimulating, exacting and challenging to the best minds amongst the rural people as the urban areas. The same rigorous training in exactitude, economy and efficiency; the same width and depth of learning; and the same qualities of imagination, perseverance and industry are required of rural inhabitants as of the urban to cope with the problems of production and distribution; of exploration, discovery, experimentation, exploitation and conservation of natural resources; of preservation of health, and creation of cultural amenities. It is a grievous mistake to drop one's standards because something happens to be done in the country and not in the cities; because the phenomena one is dealing with in the country is more often related to biological processes than with physico-chemical engineering.

The form of education

With a view to changing the unrealistically high valuation given to a literary, "bookish" studies and white collar jobs, the accent of rural education should be on the practical side. Since the majority of rural school leavers have no option but to work on farming operations and related processing and construction industries, about half the learning time should be spent on practical work in the fields and the workshops. The final evaluation of attainment would give greater weight to practical than

theoretical knowledge. Theoretical studies should be closely related to practical work. Thus, science learning would be built around selected plants, insects and animals found in the rural environment which have an economic, health and nutritional relationship to man. Similarly, studies of soil and water properties, their conservation, utilization and re-habilitation would have the same practical economic, social orientation, especially in the primary cycle of schooling. Even at the secondary and tertiary levels the technical, scientific studies will relate to the understanding and solution of rural problems of agriculture, industry, transportation, housing, health, and so on. The approach to a development-oriented primary and secondary education is through providing learning experience on-the-job, in actual productive activity, and turning to the books and the laboratory to learn the why and wherefore, and from that how the job may be done better, in quantity and quality. This seems a pedagogically sound and economically efficient approach to engaging school leavers on a work-learn programme, and for upgrading the skills of the actively employed. The high cost of prolonging the formal education of young people in the working-age bracket dictates early deployment of the majority into economically and socially productive work. Equity, however, demands that part-time and correspondence type educational facilities would be provided for continuing education and training.

For the same economic reasons, the adult working force should have the opportunity of attending functional or work-related literacy courses which also comprise a heavy component of practical training on specific job operations. Initially, the theoretical elements of woodwork, carpentry, joinery, metal work, building and maintenance of mechanical vehicles and implements could be reduced to the minimum, and training imparted through do-it-yourself methods and by demonstrations. Audio-visual techniques would facilitate teaching and learning. Practical skills in a wide range of artisan or journey-man type of work may be acquired rapidly by youth on the foundations of a minimum of 6 to 7 years general primary education. The employment of persons thus trained in small-scale and cottage industries is a matter for economic organization by other agencies.

The following outline of draft proposals for a modified structure of education in the rural areas is submitted to provoke discussion on the subject. The attached diagram has been kept simple to bring out the main idea and does not pretend to be exhaustive of structural refinement.

A. Primary level - duration 7 years

- (a) The primary cycle extends over seven years, and comprises two sub-cycles of 4 years and 3 years. The first sub-cycle of four years (lower primary) is intended essentially to achieve a minimum level of literacy, including elementary number skills. It may be regarded as a preparation for the next sub-level of primary education (senior primary), and in cases where this is terminal its objective is also to prepare the mind to be receptive to new ideas. Educational attainment of this level does not prepare one for much more than unskilled labour. It will be noted that the duration, content and objectives of this sub-level are the same for town and country children.

- (b) The second sub-cycle of three years (senior primary) is common to all town children and the objective is to provide a general education, with emphasis on the further acquisition of language and number skills. In so far as the country child is concerned, there are two streams of educational experience offered:
- (i) A small percentage (which is a matter for political decision) of children will pursue the same general education course as urban children in preparation mainly for an academic (or grammar school type) of secondary education or secondary commercial education.
 - (ii) The great majority of rural children will receive a practical type of pre-vocational education in rural farm schools, concentrating upon activities related to farming operations, rural handicrafts, and homecraft (for the girls), though instruction in language and number skills will not be neglected. The objective of this sub-cycle is to orient the mind of the child to a knowledge of the rural environment and rural activities in which he is likely to find the source of his livelihood. The sub-cycle is a preparation for the vocational education and training of the next secondary cycle, but it is more than likely that it will be terminal for many a youngster at the age of 13 or 14 (especially girls), in which case further training will have to take place on-the-job. It is hoped that the methods of instruction and the content of the course will be sufficiently interesting to prevent the alienation of the rural child from his environment, and stimulate him to exploit the economic possibilities of small or large-scale farming (perhaps through co-operatives).

In terms of occupational fitness this level of educational attainment may be regarded as the minimum for employment as drivers, junior shop assistants, messengers, postmen, petty repairmen, semi-skilled factory machine operators, apprentices, tailors, seamstresses, junior agricultural assistants, etc.

B. Secondary level - duration 5 years

- (a) The secondary cycle extends over 5 years, and comprises two sub-cycles of 3 years and 2 years. It should be noted that the end of the secondary stage is reached after twelve years from the admission of the child into the first grade. There are many developed countries whose stock of educated manpower was built upon a 12-year primary-secondary cycle, and at this stage of economic development it should also prove adequate for the needs and resources of African countries. The savings effected by a one-year reduction in the 13-year primary-secondary cycle adopted in some African countries, in imitation of some metropolitan power, could be diverted to other educational purposes.

It is important for African educational development to critically examine the need to adhere to traditional cycles or duration of successive stages of education. What is emerging as being important is not the length of a course but the relevance of the content of the course to the local situation.

- (b) The first sub-cycle of three years (junior secondary) is common to both the urban and rural sub-systems. It represents the end of 10 years of schooling, and a big fall off in school enrolment beyond this stage, when young people enter the labour market (if they had commenced at the age of five or six). A diversified curriculum is offered in the urban and rural sub-systems. In the urban sector there are the usual general education, commercial, technical, home science, and vocational (trades) streams, which can be designed to be terminal for those who would wish to leave school and receive on-the-job training. In the rural sector, pupils completing the upper primary level (general or pre-vocational farm schools) have three broad optional streams of education with a technical/vocational bias. If comprehensive schools are set up then a commercial stream may be added to these options. Some boys will enter the junior agricultural school stream to learn the theory and practice of agriculture (crop and animal production), and the related sciences, plus some language and literature; others more inclined towards engineering and constructional activity will enter the rural technical/vocational (trades) school and learn such things as engineering drawing, wood and metal work, bricklaying, brick making, house building, combustion engines, etc.; and, other clerical skills. In many ways the skills learnt in the rural technical/vocational junior high schools are applicable in urban industrial employment, if the growth in industries does exert a pull on the skilled rural labour force. Therefore, there is not much advantage for the rural youth to seek this kind of education and training in the urban system when it is readily available in the rural system. However, if the occasion should arise, junior secondary rural trades graduates will qualify to follow appropriate courses at the senior level in the urban system. On the other hand, urban secondary school graduates may also be able to utilize their education and training in the rural economy.

Girls, in general, will follow the junior home science courses, in the rural areas, and this should qualify them to enter a nursing school or a teacher training institute exactly in the same way as urban girls; but some would also enter the commercial stream.

In terms of occupational fitness, the junior secondary level of educational attainment may be regarded as the minimum for employment as sales assistants, junior agricultural extension workers, clerical assistants, machine operators, craftsmen and journeymen, policemen, small farm operators, etc.

- (c) The next sub-cycle (senior secondary) is of 2 years duration, and takes the student to the matriculation or university qualifying entrance stage, i.e., the end of the high school stage. The same diversified curricula are offered as a continuation of the junior secondary school. Graduates of the senior secondary school would constitute the core of the supply of the middle-level manpower; and thus the courses are designed to be terminal at this sub-level, both in the urban and rural system. At the same time, the completion of the courses at this level would qualify for further academic, professional, scientific and technical education and training at the tertiary level.

In terms of occupational fitness this level of education would overlap with post-secondary undergraduate level of studies, and may be regarded as minimum attainment for positions carrying a fair degree of individual responsibility, as technicians, supervisors and foremen, nurses, stenographers, office machine operators, salesmen, sub-professional assistants, production engineers, draughtsmen, laboratory assistants, clerks, etc. etc. In the rural sectors they could also be trained in management science to take charge of farming operations and small-scale rural industries.

C. Tertiary level - duration 1-6 years, or more

- (a) The tertiary cycle, ranging from 1-6 years or more, provides for progression from the secondary graduate level to a wide variety of education and training in the pure and applied sciences and arts. The terminal courses may also range from one-year to three-year diplomas of technical institutes in certain professional, technological and applied science lines of study, with undergraduate status; and from three to six-year degree courses at universities.
- (b) An important feature of the proposal is to eliminate the dichotomy that exists in the status between the kind of academic studies undertaken at traditional university-type institutions and the kind of studies and training undertaken in the applied sciences and technology at the advanced polytechnics, institutes or colleges of technology. The tendency - a carry over from the pre-industrial past - is to regard the practical and applied studies as being somewhat inferior to the so-called "pure", "theoretical" studies. African countries which are trying to develop their economies and societies as rapidly as possible by the application of modern science and technology cannot be hampered by this artificial status division between the "pure" and the "applied", the "mental" and the "manual". Hence, the proposal is to follow a uniform practice of awarding "certificates", "diplomas" and "degrees" irrespective of whether the tertiary level courses completed are in the

- "academic" or "applied" fields. Secondly, the proposals envisage, in particular, for transfers from the "academic" to "applied" courses, and vice versa, depending upon the growing interests and aptitude of the individual for specialization. Thirdly, the proposals also provide for a transfer from the undergraduate institutes, e.g., technical institutes, agricultural institutes, rural engineering institutes and teacher-training institutes, and for continuation of specialist studies and training for research in university-type institutions (academic or technological). Fourthly, the proposals allow for mobility from the rural institutes to the urban advanced universities, in the appropriate field of specialization. For example, if the educational objective is to enable the rural population to throw up scientists or technologists whose area of interest continues to be in the development of rural economic and social activities, opportunity is provided for them to proceed from the agricultural institute or rural engineering institute to an academic type of university or a technological university. This assumes concurrence between the educational institutions on course credits, which is not impossible if the educators would take an integral view of educational and national development needs, and are less tradition bound. It is also feasible to establish completely autonomous rural universities, when developments justify this, with the focus on rural development needs and problems.
- (c) Another feature of the proposals for coherent, parallel sub-systems of education is the provision made for teacher-training institutions both in the urban and the rural sectors, thus ensuring a supply of teachers, whose minds are adjusted to the rural environment, for the rural system of schools, colleges and institutes. The same applies to the training of rural health assistants and social workers in the agricultural institute or the teacher-training institute. There need be no hard and fast lines of institutional separation in the early stages, at least, of the training of agricultural production specialists, agricultural extension workers, community development workers, health assistants and social workers for there is much to be said for taking an inter-disciplinary view of the development of human resources.
- (d) Both the agricultural and rural engineering institutes will provide a variety of one-year, two-year and three-year diploma level courses, in accordance with the high-level and middle-level skill requirements of the rural development plan. It is intended that the attention to the basic agricultural sciences, as distinct from their applications to production, will encourage some young men and women to continue their studies with a view to engaging in pure or applied research of relevance to agricultural production, e.g., plant and animal genetics, plant and animal pathology, the conservation and utilization of soil and water resources, plant and animal pests, food preservation, etc. etc. Similarly, the rural engineering institute could

provide engineering courses (civil, mechanical, electrical) of relevance to rural agricultural production as well as for the industrial processing of agricultural products. However, the needs of rapid development suggest a sharing of the curriculum time between the classroom/laboratory and the field or workshop. The field and workshop assignments can be made a real life experience if the students are allocated for appropriate periods in on-going production enterprises, very much along the same lines as the way in which teachers, nurses, doctors, lawyers and accountants, for example, are trained.

D. Adult education

Arrangements are necessary for (a) part-time education, and (b) adult education programmes, especially functional literacy programmes, for those who are employed. Continuing education services should be available in the rural sector, and reinforced through the use of mass media of communications (radio, television, films, newspapers, etc.). The emphasis of adult education will be on vocational training, on upgrading skills and on social issues to create receptivity to change. Farmer training centres, offering full-time courses of 2-12 months duration for producing farmers should be established.

Implementation

The re-organization of the rural sub-system of education so that it may become a realistic system, oriented to development needs and priorities is a long-term programme which should be, for each country, preceded by detailed surveys, studies, planning and preparation of administrative and teaching personnel. It is important to proceed cautiously, step by step, lest the whole programme founders through insufficient understanding of the new goals set for rural education on the part of the community at large and amongst the educationists themselves. It is exceptionally difficult to bring about a conceptual change in educational practice modelled for generations on alien systems, and the resistance to change comes from parents as well as the professionals themselves who are products of the traditional system. Perhaps, what ought to be done first is to stimulate a dialogue on the university and teacher-training campuses on the problems of development education. In the curriculum of teacher education provision should be made for a course on development education. It is paradoxical that such courses are more readily available in developed countries than in the universities of the developing countries. The governments of developing countries are seized with the realities of underdevelopment but it is doubtful whether the populace at large has been educated to the kind of efforts that have to be made to achieve social and economic progress, and to commit itself to those efforts.

The bottleneck in changing an educational system is not so much money as the lack of a suitably prepared teaching force. Often the mistake is made of trying to introduce changes in educational practice without having taken the necessary steps to re-train the existing teachers in regard to content, attitudes and capabilities, and to ensure the adequate preparation of the future

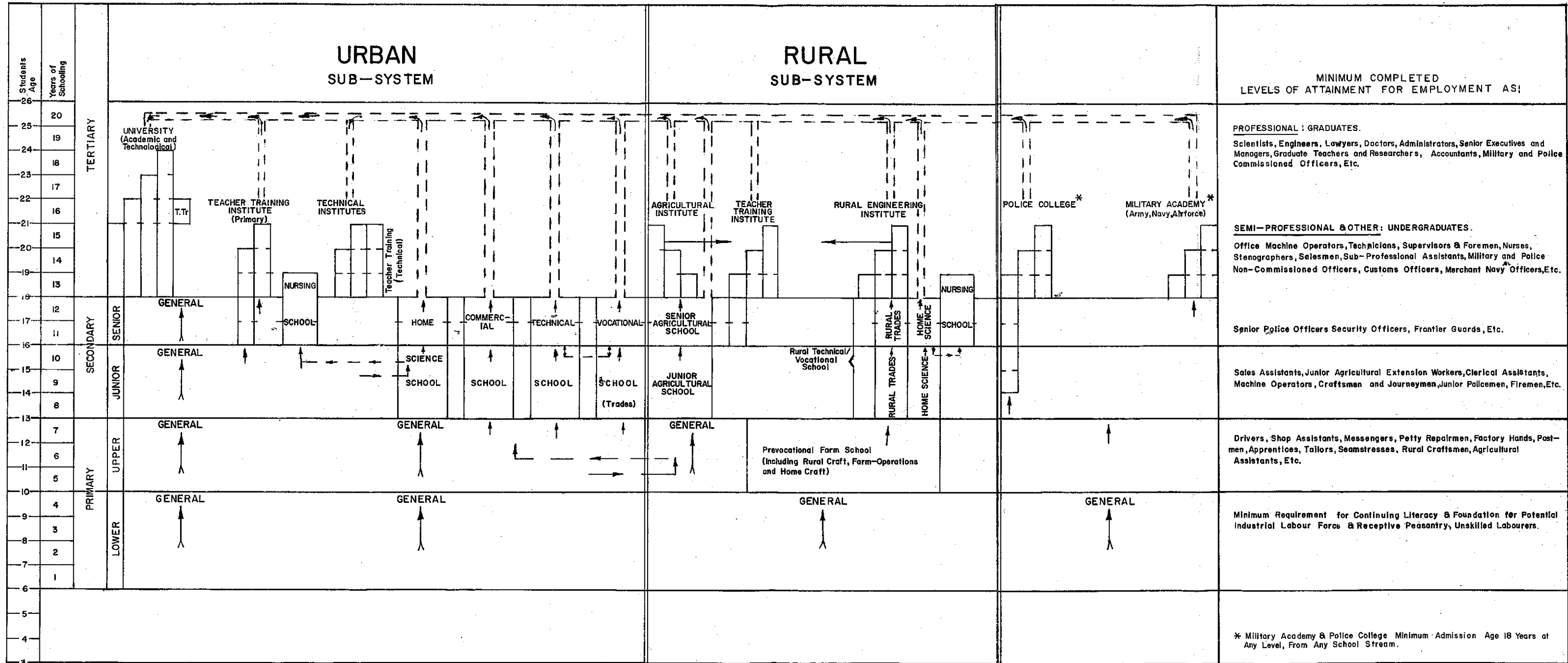
supply of teachers. It appears that because the development of the rural areas has not had the kind of deep attention it should have had, the theory and practice of rural education itself tends to be neglected. This state of affairs would have to be remedied first by the establishment in rural areas of teacher-training institutes, staffed by teacher-educators of high calibre who will train teachers for the special needs of integrated rural development and will also promote and undertake research into the specific problems of rural education. Organizationally, these teacher-training institutions should be incorporated within the framework of the rural agricultural/engineering colleges or institutes or at least be closely tied up with them. Pilot projects of this kind should be established in selected areas before expanding the system. Since the emphasis in rural education, at this stage of the socio-economic development of most developing countries, would be on practical, work-oriented training on the farms, workshops, offices, clinics, laboratories and homes, a large corps of instructors and demonstrators of vocational subjects or skills would be needed first. The gross shortage of teachers of practical trade courses is likely to be the main constraint to the development of the rural education programme. The urban technical and vocational schools and the industries themselves are competing for the services of such trained personnel. The highest priority should be given to this part of the programme. Experienced foremen, supervisors and technicians should be trained how to instruct others.

Rural secondary schools should be organized on the lines of comprehensive schools offering a variety of courses. One might also look into the possibilities of devising a core curriculum exposing boys to both agriculture and mechanical arts, the girls to home science and agriculture or clerical skills. This is a complex operation fraught with many problems, especially of location and accessibility to rural students. Schools would have to be established for their success in some central locations such as rural towns, or village complexes planned for rapid urban development. We see in this instance alone how important it is to co-ordinate the educational development programme with other social and economic development programmes, which suggests the early establishment of co-ordinating machinery at local, rural, and national levels.

The staff of secondary and tertiary educational institutions should be closely associated, as partners in development, with the design, supervision and evaluation of integrated rural development projects. In this way, the educational institution will get to know whether it is turning out the type and quality of manpower required.

Out-of-school, non-formal educational programmes appear to be the most feasible approach to upgrading the knowledge and skills and for changing the attitudes of a largely illiterate adult population. Functional literacy projects should be experimented with for farmers and industrial workers. It is recognised that extension work - both agricultural and industrial - makes an effective impact only if it is directed to a literate population. Some countries are finding that training of active farmers - men and women - at farmers' centres, for short duration, yields results in the way of increased farm production, the demonstration effect of which is utilized in promoting

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improved farming. Young school leavers may also be enrolled at these centres and taught agricultural vocational skills, including some mechanical skills. The possibilities of the mass media of communication (newspapers, radio, films and television) in the educational strategies for developing countries are just beginning to be explored and more systematic work needs to be encouraged.

In conclusion, it should be stressed that unless the people are motivated ideologically and take to development as a religion, committing themselves to make the effort and the sacrifice for a future life of abundance for themselves and their children, the results attending any scheme of education or economic progress are likely to be meagre.

IV. THE UNIVERSITY IN AFRICA*

Introduction

I welcome the opportunity to address the Association of African Universities; and I recognize the honour thus afforded to me. I have gladly responded to the invitation mainly because the very existence of the Association which issued it bears testimony to the rapidity and extent of one very important line of African advancement. In my youth, nothing was heard of fully-fledged universities, except in Egypt and South Africa; and, in Africa south of the Sahara, the nearest and solitary approximation to a university was Fourah Bay College in Sierra Leone. Even in the 1940s and 1950s many of the institutions, now members of the Association, were then non-existent; and, others were merest embryos. Today, more than 40 African universities are established; and the number of African teaching, research and administrative personnel is a measure of the creditable progress which has been made in recent years.

The founders of the Association have identified and emphasized two essential aspects of the University: the scope and content of its activities implied in the notion of "universitas studiorum"; and, the catholicity of the university community. This is an appropriate emphasis, and it helps to underline the particular aptness of the collective consideration of African university needs. Such collective consideration is most apposite at this time, particularly if it is accepted that African universities should be an intimate part of the African social fabric. I recognize that there is not much agreement on the directions in which African societies should evolve; and, that there is much debate on the preferred means of achieving the desired evolution, but African universities are well placed to contribute much to the definition of African social goals and to the specification of means to achieve these goals. The universities are sufficiently established to be experienced, and sufficiently young to be flexible, both in ordering their own activities and in thinking about wider African problems.

In keeping with my belief that universities have a critical role to play in the improvement of the African social fabric, I propose to examine some of the more important elements in this role. In doing this, I should like to emphasize that there is no necessary conflict between scholarly and social concern. Indeed, there should be very substantial community of interest if scholars accept that the purposes of research and deep reflection should be weightier than the satisfaction of what has been called 'sinister personal pleasure', and if governments recognize that independent enquiry, fearlessly pursued, is in the long run one of the greatest strengths and most powerful guarantees an open society can possess. If scholars display a basic sense of social responsibility, critical comment on the conduct of public affairs ought always to be met by something more reasoned than force or repression. In this spirit, I should like to offer some thoughts

* Keynote Address by R.K.A. Gardiner, Executive Secretary, United Nations Economic Commission for Africa to the Meeting of Association of African Universities, Kinshasa, Zaire 19-21 November 1969.

on the university and society; on some specific tasks to which African universities ought now to be addressing themselves; and, on some specific problems that are raised by consideration of university development in Africa. I have chosen to divide my thoughts in this way for convenience of exposition; but I recognize, of course, that my topics are all inter-related.

The University and Society

A characteristic of modern societies is their interdependence. Important institutions cannot hope to conduct their affairs in a vacuum; and, governments cannot be expected to remain indifferent to the impact of even ostensibly independent institutions on political and social processes. In the contemporary context, the only question worth discussing is not whether the university is part of society at large, but the respective limits of academic freedom and political interference. As a general principle, this question will lie lightly on any society which is willing to accept that the limits should be determined in such a way as to maximize opportunities for free, critical enquiry and the rational, social application of the fruits of such enquiry.

The problem of maintaining the balance between scholarly freedom and political authority which arises from the necessary involvement of the university in society is not, of course, peculiar to Africa. Indeed in some ways the problem has been manifest in its sharpest form in recent years in the so-called developed societies. An example of the magnitude and complexity that the question can attain is provided by the characteristics and recent history of the University of California. In 1962, according to its then President, the University of California had an operating budget of nearly US\$500 million and carried a capital budget of a further US\$100 million; and the university was "operating in over 100 locations, campuses; experimental stations, agricultural extension centres and projects abroad, involving more than 50 countries, with nearly 10,000 courses in its catalogue, with almost every form of contact with nearly every industry, nearly every level of Government". In subsequent years, there has been continuing and serious academic unrest; and this unrest has in turn provoked political reaction in such a way as to lead to a sharp confrontation between members of the university and the political powers of the State. There are, no doubt, particular factors which help to explain the California conflict -- the size of the university and the political ethos of California. There are, however, also important general elements in the origins of the conflict which would repay careful study by persons and institutions concerned with the welfare of universities and the general social good.

Among these elements are a confusion as to purpose on the part of the university itself; and an altogether too narrow view of the university on the part of political authority. The very range of the university's interests and activities makes any coherent view of its functions difficult. At the one extreme, the view that the university should be primarily concerned with the training of young persons for sober and responsible careers is at once timid and dangerous. On the other hand, unimaginative,

acquiescent sobriety is incompatible with any serious intellectual adventure; and it is wrong to attempt to secure such sobriety by forceful maintenance of "law and order" and financial inducement of respectable behaviour.

Thus a lesson of the California experience is that the State ought to have as clear a view as possible of the nature and functions of the university. There is, of course, a wealth of definitions regarding the functions of a university. Its principal aim is often seen as "the preservation and transmission of man's cultural heritage"; and the university has been described as "the protecting power of all knowledge and science, of facts and principles, of enquiry and discovery, of experiment and speculation,....". Such definitions are acceptable as far as they go: but they do not go far enough, being at once too general and too narrow. They fail, on the one hand, to make it clear that modern universities are rooted in the contemporary social setting which must be their concern; and, on the other hand, they fail to provide any detailed account of the diverse functions which the modern university now embraces. A more detailed definition would certainly include the transmission and extension of man's cultural and scientific heritage, as well as the need to exemplify the highest standards of intellectual integrity. It would certainly emphasize the need to conduct these tasks in an explicitly social way; and would recognize that exacting professional training, if it does not by any means exhaust the functions of the university, is at least a creditable part of the university purpose.

Universities are, of course, ancient institutions which, in the course of their long history, have exhibited continuity and change. Centuries ago, mathematical developments in the Islamic world were examples of scholarly advance; and, the Chinese invention of gunpowder was an instance of early technological progress. In more recent times, the advance of scholarship and scientific and technical thought has been largely determined by western Europe; and, as Professor Kuznets has put it, "the epochal innovation that distinguishes the modern economic epoch is the extended application of science to problems of economic production". The baldness of this statement should not be allowed to obscure the complexity of the underlying process it describes. Technological and economic advances have been related to sweeping changes in the social and political framework of societies; and the consequent material capacity of the European powers made it possible for them to spread their mandate throughout the world and to dominate numerically superior communities. Spectacular material advances further encourage notions of secularism which are most graphically embodied in the view that man can, by the application of science, control nature. Some countries, in recognition of the Western-imposed standard that modern nations should be classified primarily in terms of technological capacity, have, like Japan, given emphasis in the recent development of their educational systems to technological institutions.

Just as the civilization of Athens in the age of Pericles was deeply tarnished by the institutions of slavery, so the recent epoch-making innovations of western Europe have been, and indeed remain, deeply compromised by the colonial experience, with its degrading racial distinctions

and its economic neglect of the subject nations. As a consequence of this experience, African countries are, in world terms, very far removed from possessing the kinds of economies that "the extended application of science to the problems of economic production" has produced elsewhere. In this circumstance, with all that it means in terms of human misery, the first task of African governments must be the most rapid attainment possible of modern economies; and the first general task which must fall on important -- and, let us not forget, costly -- institutions like universities is to assist in this attainment. Since, as European experience shows, the task involves the establishment of vigorous scientific and technological capacities, as well as the widespread adaptation of social and political institutions, it is surely an inescapable obligation that the humane and enquiring intellect should play an active part in tackling it.

I am aware that there are some who, with Veblen in his Higher Learning in America, see idle curiosity as the only proper academic motive. I fail to see anything particularly noble in such a motive. Curiosity is indeed a basic human instinct, but it needs to be sublimated. The sort of curiosity that leads men to take an Asmodean interest in tearing off their neighbours' roofs to see what is going on beneath is reprehensible and indeed idle. Idle curiosity is, after all, what leads men to stop and watch a brawl or any fleeting diversion, and it seems to me that those who would base academic activity on this trivial impulse are seriously confusing motive with method. It is surely more honourable to work at the full stretch of one's intellectual powers and integrity for social betterment, than to boast that one shares with man and beast alike a fairly common, and often frivolous, instinct to be curious.

In African conditions above all, there is ample scope for common ground between the aims of government and the claims of the academician, and if the political authority ought to respect the honest, if necessary the courageous, opinion of the scholar, the scholar ought equally to recognize that he cannot escape his social responsibilities. Even if the scholar is unwilling to acknowledge his social obligations explicitly, he cannot escape from the implications of the terrible question of the Irish poet who, in the course of an earlier tribal struggle, pondered: "Did those words of mine send forth men the English killed?"; or Lord Keynes' observations that "Mad men in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back."

I do not wish, of course, to be understood as decrying any merit in intellectual curiosity. The desire for social betterment, like the desire to cross a busy thoroughfare, has to be rationally organized; and, it is important that scholars should not be easily satisfied with either a narrow range of concerns or relatively facile solutions. Indeed, the challenge that now presents itself to African citizens and scholars is to develop African universities which will imitate none uncritically, but which will be designed to give distinguished service to the societies in which they are located at the same time as they preserve to the full the universal hallmarks of the university institution. Such hallmarks certainly include intellectual liveliness and stamina; and it is my strong

hope that these characteristics will be very much in evidence in African universities. I am sure that common involvement in the painful, but exciting, problems of a far-reaching social transformation and a modicum of mutual understanding between State and university will mean that the more powerful and the more persistent the academic intellect, the greater the benefits to society at large.

Some Specific Tasks

Having spoken of modernity, I now wish to say that one of the most encouraging features of recent scholarship has been the light it has thrown on the African past. Hitherto, it has been thought that Chinese, Islamic and Western societies were alone in possessing the university as the apex of their civilizations. It is now known that the university existed in Africa also in the Middle Ages. "In Timbuctu, then a city of perhaps 100,000 inhabitants, the University of Sankore was famous throughout the Arabic-speaking world for the study of law and surgery; and in a community with many doctors, judges and other learned persons, manuscripts and books were often the most valuable of merchandise". I am aware that there are some -- perhaps in this audience -- who would argue that there is no continuing link between the earlier achievements in Timbuctu, and the circumstances of contemporary Africa; and that, therefore, to dwell on past history like this is to indulge in useless sentimentality. I cannot agree. It is important to recognize that one of the more disabling features of our present situation is that we have sometimes been driven to ask whether intellectual endeavour is not alien to the nature of the African; and, we have been forced to accept "the status of a native" which Franz Fanon rightly observes "is a state of nervousness induced by oppressors". It is necessary to assert that what Africans did in the past, they are capable of doing again; and, it is good for the morale of our scholars to know that they work in institutions which have roots in their own culture and history. For these reasons, I think it important that critical and comprehensive study of African history should be a strong feature of African universities. I thus agree with President Nyerere; and, I would certainly endorse his view that it is natural and right for our new universities to play a leading part in African historical studies because the primary interest is not really other people's desire to understand us, but our own desire to understand ourselves and our societies in order that we can build the future on firm foundations.

Reverting to more explicitly modern concerns, many studies -- and indeed casual inspection -- reveal that lack of skills is the single most important constraint of African economic advancement. Given what has been said earlier, this skills constraint is clearly something which universities ought vigorously to seek to reduce. At one -- and the most obvious -- level, this involves the universities in the production of high level talent. The timing and pattern of the contribution that universities can make in this respect are by no means easy to determine. The importance of the contribution cannot, however, be gainsaid. It has, moreover, to be remembered that expatriates still account for a high proportion of all persons working in Africa with high level skills. In these circumstances, it is evident that increasing the stock of Africans with high level skills

must rank high among the tasks now to be undertaken by African universities. The skills constraint does not refer merely to high academic qualifications. It is, in fact, to be observed at many levels; and the removal of this constraint has implications for the entire system of formal and informal education. It is, therefore, important that universities should become involved in the design and operation of the educational system at large. In part, this requires that the universities should accept the challenge to combine realistic entrance qualifications, which will maximize higher educational opportunities, with the need to preserve academic standards, which ought to be high -- not in deference to any foreign judgements, but because of national integrity and needs. More generally, the universities ought to take educational planning and performance very seriously. Where skills are limited, it would be wrong to expect that Ministries of Education can alone produce viable educational plans; and where the whole public interest is involved, it would be imprudent to leave the determination of such plans to educational specialists narrowly construed.

Thus, the universities might mobilize teams of specialists drawn from different disciplines -- education, economics, psychology, natural, biological and computer sciences -- who would analyze sets of options and formulate plans for national action. Such action might include the revision of curricula, the formulation of courses and qualifying examinations for different types and levels of institutions, and ensure that the products of the educational system at its various levels can be usefully absorbed by the economy and by society.

At the primary school level, for example, it is argued that some elements of rural science in agriculture should be introduced into the curriculum for the benefit of children who are to live in predominantly agricultural communities, but agriculture, especially when productivity is increased, is not likely to absorb all children who attend schools in rural areas. Neither is it reasonable to expect all children from these areas to take to agriculture as a vocation. There should be linkages to give children the option to advance to technical, commercial, secretarial and other courses, whether they start from rural or urban primary schools. Another aspect of this question concerns facilities for technicians to take professional courses. In Africa where people with minimum qualifications are in short supply, very few people are willing to enter specialist training courses which will limit their opportunities for advancement when professional salaries and conditions of service are higher and better than those for technical personnel. The universities should set up special entrance arrangements for mature students, including experienced technicians.

In effect, the foregoing arguments suggest that African universities should conduct serious research into African educational problems and contrive to make the results of this research widely known. There is no lack of other problems which in the development context require careful elucidation: the effect of climate and different types of soil on agricultural crops; the economic responsiveness of the peasantry; the economic implications of particular social structures and institutions; the relevance of commodity agreements to African trade problems; and the optimum strategy for the

dissemination of modern technology in African conditions, to mention a few of the more obvious. Whether within the normal departmental structure, or by means of special research institutes, it is important that African scholars address themselves critically to such problems and that they have sufficient working contact with policy-making and executing agencies in order to ensure that their academic findings will influence practical events.

In tackling the developmental problems of the continent, African universities will inevitably have to confront the fact that they are multi-purpose institutions; and they will necessarily therefore have to face the problem of maintaining the balance among their various pursuits -- worrying here about the relationship between the traditional single honours course and the manpower needs of the economy, and being concerned there to ensure that research is undertaken in a way that is consistent with the requirements of general and professional education and the exacting demands of undergraduate life. African universities should also seek balance in their time perspective and in their breadth of vision. Even the most pressing contemporary problems can sometimes be greatly illuminated by an ability to take the longer view; and African scholars have perhaps a unique opportunity to contain the consequences of excessive specialization which now mark the more developed societies and to present a reasoned sketch of African possibilities.

Africa's image of herself and her ideas about other continents have been distorted by the colonial experience. Area studies of, for instance, the Arab World, the Caribbean, Asia and the Far East could therefore be given a place in the university programme. I see no conflict between a proper internationalism and natural interest in the problems nearest to one's door. Moreover, the membership of African States in bodies like the United Nations makes it imperative that the universities should help, not only in the training of diplomats and public leaders but also in fostering a modern world outlook.

Some Specific Problems

African countries are among the least developed economically in the world. This fact raises some particular problems in connexion with African universities. Not surprisingly, the most evident of these problems relate to cost and cost effectiveness. As Sir Arthur Lewis and others have pointed out, the cost of educating a student in Africa is higher than the cost of educating the same student in a European or American university. Among the reasons for this is the fact that the market for academic skills is increasingly an international one; and in order to retain African staff and attract expatriates, African universities must pay salaries which will enable them to compete with the salaries and relatively attractive conditions prevailing elsewhere. Present pressures on universities elsewhere are now such that salaries there are tending to increase at a rate which is higher than the general rate of economic progress in African countries. The real cost of university education in Africa is thus tending to rise from an already high level.

In considering the cost of university education one cannot avoid the cost of waste or drop-outs. My attention was drawn to this phenomenon forcibly by the following extract from a Ghana newspaper: "Out of 280 students presented for the degree examination in science this year only 62 passed! That is, about 21 per cent passed the exam after at least four years of study". The case I have cited concerns a university in Ghana but some research is needed to throw light on the situation in other universities and at other levels of education in each African country. An equally important question is what use does society make of these failures or drop-outs.

In our predominantly illiterate and unskilled countries we should contrive to make use of every person who has spent even one year in a primary school. Apart from the fact that university entry requirements are in some cases conventionally copied from metropolitan countries and unrealistic, it is shocking to think that the resources of very poor countries can be wasted on over 200 students without any tangible results. One is inclined to ask: Are these failures allowed to resist their examination without having to wait a whole year? Are there facilities for career guidance which can help these unfortunate students to choose careers for which they show an aptitude, and for which the training they have already acquired fits them? In other countries such cases often find openings in librarianship, accountancy, banking, hotel management, junior executive posts in business and industry, and teaching at various educational levels. It is also a task of universities in Africa to study this type of waste, and to help to devise service and career systems which can make use of all skills.

The high cost of African education suggests that such education requires special justification and confers special privileges which ought to carry correspondingly special responsibilities. The justification can be found in areas already discussed: basically in the need for original work on African historical and developmental problems, and in the desirability of maintaining close links between research and teaching. The proliferation of institutes of development studies notwithstanding, it is evident that the major concern of extra-African universities is the extra-African world; and a proper attention to African problems can only be achieved by African universities. This said, however, it should be remembered that in poor societies university education is a rare privilege; and that therefore African students and their mentors should consequently be imbued with a marked sense of social obligation.

The high cost of universities underlines the reasonableness of government concern to see that the choice of university curricula reflects national needs. To say this, however, is not the same as saying that governments should have the right to insist that universities should confine their attention to narrowly practical matters. It is nevertheless to say that due attention should be paid to the supply of scientists, economists, engineers, etc. I do not see any objection to a government scholarship policy which gives preference to candidates in these fields and less consideration to those who select liberal arts, law, and sociology. Here as elsewhere, the

important problem does not lie in any intractable conflict between the universities and the political authorities, but in preserving the balance between practical requirements and those of intellectual enquiry.

That there is a strong case for having African universities does not mean that all African universities should be established as highly independent and individualistic institutions. On the other hand, it should be borne in mind that rigid and unthinking demands to avoid duplication in academic work can be seriously self-defeating and dangerous. Professor Galbraith has put a label on modern society and called it "Industrial Society", but the pivot of an industrial society is knowledge and that is why there is a growing tendency to describe a modern society as a "knowledge society". For this reason, it can be accepted that every African State — however small — will seek to have its own university college or "knowledge centre". The importance of having such a centre is further emphasized by the trend which has resulted in America of having a larger proportion of the total population engaged in the "knowledge industry" — teachers, professors, researchers, pupils and students — than in agriculture. But the high cost of African universities and the cosmopolitan, international features of academic institutions lend strength to the proposition that teaching and research should be organized where possible on a multinational basis. Such co-operative effort is important both because it provides economies of scale and because it permits larger scale effort than would otherwise be possible and thus increases the liveliness of teaching and research. Co-operative effort should not be confined to any particular discipline, but — both because of cost and because of the nature of the subject — it is perhaps particularly important to consider it in the case of the natural sciences and engineering.

There has been talk for some years now about the development of "centres of excellence" in Africa. The idea behind this has been that African countries would band together to establish centres for advanced training and research. Naturally, a programme based on this idea is not going to be easy to establish. On the other hand, there are developments which show that some such centres are already developing in Africa. I have in mind the International Institute for Tropical Agriculture, which is being established with a budget of some US\$17 million. I have no doubt that if such an institute lives up to the hopes of its founders, African universities will turn to it voluntarily. In fact, it is expected that the Institute will be one of a series of world agricultural research centres and so scholars from all continents may seek its services and contribute to its research programme. It seems, therefore, that countries which concentrate on developing advanced facilities will provide centres of attraction for other African countries. This may be a much quicker way of developing "centres of excellence" than the interminable negotiations which show no sign of coming to an end.

Up to now I have not referred to the many types of non-formal education which have been described as the "catch up, keep up and get ahead" process. This, of course, cannot be neglected by any university in Africa. Since the days when a start was made with Extra-Mural and External courses, one wonders whether the use to which the physical plant, equipment and staff

of universities can be put during the long vacations has been fully realized. Neither have I touched on the question of academic and professional associations, the publication of learned and scientific journals and the place of specialized research institutes. To discuss these subjects will require at least a separate lecture. Africa's struggle to acquire modern knowledge and skills calls for extra-mural and extra-curricular activities and some unconventional approaches.

African universities face formidable difficulties but they can take comfort from the fact that the modern university is a recent development. The names of Napoleon and Wilhelm von Humbolt are associated with the modernization which took place in France and Germany in the Nineteenth century. In the United States we learn that "it was not until the 1900s that anything like a modern university really took shape there". And in the USSR the 1917 revolution marked the beginning of university modernization. The experience of Japan is particularly significant because she adapted a foreign system and used it successfully in very recent times. African countries do not possess capital resources -- they cannot rely on easily assimilable immigrants, but they can take courage from the fact that in the field of higher education, resolution and constructive effort count as much as time and can make up for other ancillary advantages. We do not therefore need to resign ourselves to centuries of painfully slow growth.

V. ADULT EDUCATION AND NATIONAL DEVELOPMENT*

I bring you the greetings of Mr. Robert Gardiner, Executive Secretary of the United Nations Economic Commission for Africa and his good wishes for a successful Conference. The Chairman of your Association had graciously invited him to deliver the address at this session of the Conference but unfortunately owing to prior commitments he could not be here, today, and so, with the consent of the Chairman, he designated me to represent the secretariat of the Commission as an indication of the great importance the Commission attaches to the role of education and training in African development and of its support to the African Adult Education Association which has been formed to provide the necessary professional leadership in this field. The interest of the Commission in the substantive side of the work of your Association is derived from its Terms of Reference whereby it is charged in the scope of its activity for the promotion of economic development to include its "social aspects".

The theme of this Conference is concerned with the role of education, in particular adult education, in promoting national development, and with making the contribution of education more effective. We start with the firm conviction and faith that education can make such a contribution. This paper will endeavour to present for your consideration, first, the outlines of a conceptual framework for the discussion of the theme and then conclude with some observations on its relevance and applicability to the African situation. The eminent list of speakers who are scheduled to follow will assist in analysing the subject in depth and filling out this outline with data and information gathered from their specialized experience.

It would be helpful to begin by seeking clarification and understanding on the meaning of the concept of development. The practice of the science and art of the development of human societies has often run into difficulties and impediments for the lack of a common understanding of the conceptual framework. This is not surprising for the passion for development which has seized the world is something new; and, it is coincident with the establishment of the United Nations system on the conclusion of the last World War (1939-1945), and with the collapse of the colonial era which led to the emancipation of many dependent territories mainly in Africa, Asia and the Caribbean area. Though the United Nations is by far the foremost proponent and supported of international development it has not adopted an official development doctrine. Perhaps, this is just as well in the state of our knowledge and the constantly shifting frontiers of what is, and what ought to be.

* Keynote Address by Mr. R. K. A. Gardiner to the Third Conference of the African Adult Education Association 20 April 1971, Dar-es-Salaam, Tanzania, read by Dr. S. Cooppan, ECA Secretariat.

However, there are some guideposts to our thinking achieved over the past quarter of a century, and Mr. Malcolm Adiseshiah, the retired Deputy Director-General of UNESCO has rendered a valuable service by identifying and succinctly stating the elements of what he regards is an "implicit doctrine" in the various and separate decisions taken by the United Nations bodies. 1/

Seven elements may be identified in the evolving United Nations concept of development, but the fundamental proposition on which these elements hang is that development means progress, the movement to a more optimal condition or state of human welfare. I shall simply state these elements first as enunciated by Adiseshiah, and then return to an elaboration of each. Development means growth; change; growth plus change; it is global in scope; it is peace; resource-demanding; and, for man in society, it is redemptive and a call to redemption.

- (i) Development means first growth : growth which is primarily quantitative, essentially economic, and basically measureable. The economic growth element makes development both the cause and consequence, "the source and symbol of other social signposts". A country whose standard of living is not rising, whose annual per capita income is not increasing, is not developing; it is not meeting the first test of development.

Adiseshiah points out clearly, even as Dudley Seers did somewhat forcefully recently 2/, that the per capita income yardstick has only a tenuous if important relationship to the full scope and real meaning of economic development. 3/ Conceived in real terms economic development means an improvement in the levels of living, which the United Nations has defined as comprising nine components: health, food consumption and nutrition, education, employment and conditions of work, housing, social security, clothing, recreation and human freedom. A growth in national income provides only the potential for economic development as defined here, and may be actualized only by income distribution to enable families to purchase these essential components (except the last which is not sold in the market place). It is suggested that in the developing countries the measure of poverty and prosperity is in these real terms. 4/

1/ Adiseshiah, M.S. Let my country awake. Sub-title: The human role in development: thoughts on the next ten years. UNESCO, Paris, 1970. pp. 42-48.

2/ Seers, Dudley. The Meaning of Development. A paper presented at the Eleventh World Conference of the Society for International Development, New Delhi, 14-17 November 1969. Reprint Series, September 1970, Agricultural Development Council, Inc., New York.

3/ Adiseshiah, M.S. : Op.Cit., page 39.

4/ Seers, Dudley. Op. cit.

- (ii) Development means change : change from a pastoral, nomadic to an agricultural economy, from a subsistence to a cash economy, from a single crop to a diversified agro-industrial system. This means applications of science and technology; searching and seeking, and being open to innovation and experimentation; developing intellectual flexibility and creativity; revising, discarding and/or adapting traditional customs and accepted hypotheses. It means that all the causes and consequences of change must be placed firmly within the framework of universal values and their particular national and local expression. The element of change, however, is in its totality non-measurable, non-quantitative, and stems from the qualitative, moral and spiritual strivings and characteristics of man; it reflects his effort to achieve a society in which he can live creatively and peacefully.

In other words, change involves a deep structural change in the economy; a psychological change in attitudes and motivations; and, socio-cultural changes in value systems and institutions.

- (iii) Development is growth plus change : not growth first; and change second, in some kind of chronological order. For growth also takes place through mutation and change, just as change is a consequence of growth.

Thus, the process is identified as one of inter-action, of forward and backward linkages, and spread effects. It is clearly established that development is for man, and that in the process man himself is developed. Development is synonymous with dynamic living.

- (iv) Development is global. There is no development if one part of the world is developed and the other remains underdeveloped. The equity that is called for is equalization of high standards, not the sharing of poverty. Development places obligations on the individual citizen and the State, in the underdeveloped as well as the developed world, to make hard, difficult and unpleasant decisions and sacrifices to promote development.

This element re-affirms the principle of human inter-dependence and the imperatives of co-operation. The truth of the matter is that mankind is one and there is an identity of interests in maintaining and advancing human civilization. This rings a warning bell to those who see their salvation in the isolation of national development. Multinational co-operation is a surer way of achieving national development. The re-titling of the Pearson Report as "Partners in Development" is no journalistic catchphrase; it is the expression of a fact of the development process. 5/

5/ Partners in Development : Report of the Commission on International Development (Chairman : Lester B. Pearson). Praeger, New York, 1969.

- (v) Development is peace : to work for development is to work for peace. The threat to peace is not just poverty. It is inequity, injustice and the denial of basic human rights to one part of mankind, and its awareness of it, that endangers peace. Peace, security, development, human rights and international understanding are all one and indivisible.

Peace is as much an end for its own sake as it is an indispensable condition for the implementation of development tasks. What is stressed in the above statement, however, is that peace is not an abstraction of the mind but something which has a social content. Building for peace gives development its political content.

- (vi) Development is resource demanding. There can be no development outputs without resource inputs. Today, it is decision which creates resources and not resources which enable decision-making. Decisions must be made to use existing resources, and not waste them.

Warfare and arming for warfare is a wasteful use of resources. The more affluent nations grudge the deployment of the modest one per cent of their national income for the promotion of development in the poorer countries, and the poorer countries are hard put to find extra resources. Both are responsible for this state of affairs by taking decisions to devote approximately \$150,000 million annually to expenditure on arms in the world. The decision to re-deploy resources to development is a test of the effective commitment to development.

- (vii) For man in society, development is both redemptive and a call for redemption. It is redemptive because through it man can choose desirable change and avoid the undesirable. It is a call to redemption for, paradoxically, development itself is in need of redemption of the disorder, inharmony, suffering and disruption it has brought with it.

This is a reminder that development could be a mixed blessing if it is not properly planned and implemented with due regard for the optimal welfare of humanity. "Development is, in the end", as Adiseshiah puts it, "a form of humanism, for its finality is the service of man. It is moral and spiritual as well as material and practical".^{6/} Cities, factories, shops, skyscrapers, automobiles and highways are the outward concrete symbols of development, but there is much disillusionment about this kind of progress. When the negative outcomes of economic development are considered, such as environmental pollution, rising rates of crime, the fatalities on the highways, the congested and depressing slums, the urban sprawl and the daily struggle

^{6/} Op. cit., page 44.

to get to work and back, and so on, there must be a heavy discount in the final social accounting. From this point of view one may ask whether the African, who still has the opportunity and leisure to enjoy the beauties of unspoilt nature; who can still breathe pure air and feel the sunshine on his back; and, who does not live in daily fear of a nuclear device suddenly bursting upon his city, is after all that poor and deprived of the good things of life? Development calls for a renewal and balancing of our values. African nations would do well to use the time lag that faces them in acquiring these material signposts of development to reflect how they may avoid the same pitfalls and disasters into which the richer countries have slipped.

From the foregoing statement it would be gathered that the development of nations is a very complex matter, sometimes comprising a very wide range of practical activities, and at other times providing supporting structures and a favourable mental and social climate for the operations. For various historical reasons, the bench mark position from which any one country starts is different and no two countries have exactly the same development profile. On most conventional counts, however, African countries have a low starting position, even compared with the developing regions of Latin America and Asia. 7/ Development calls for a strategy of selective, co-ordinated action, and this was the approach recommended to the member States at the Tenth Session of the Economic Commission for Africa held in Tunis in February this year. 8/ The point of interest and concern to this Conference is the extent to which the push to the development process is dependent upon the human agent. Man is not only the beneficiary of properly planned development but he is at the same time the instrumental factor, the most important factor, in the process. The aforementioned Tunis session of the Economic Commission for Africa rather explicitly acknowledged this fact by including human resources development as one of the selective areas of activity for concentration as part of the strategy of development. What is understood by this term is that human energies, human ingenuity and creativity, human skills and human motivations are the springs of development action. Apart from the physical quantum of food, clothing and shelter that is necessary to keep a person in good health and optimal level of productive energy, the rest is a product of careful nurture through the process of education and training. It is true that the maintenance of health and hygiene, personal and environmental, is also an outcome of education and training. Indeed, the major component of a human resources development programme is the programme of education and training.

That the educative and training process enables human potentials to be nurtured and brought to their full development, refinement and maturity has

7/ A Survey of Economic Conditions in Africa, 1961 : Part II. A Typology of African Economies, UNECA, Addis Ababa, 1971. Chapter II especially.

8/ Africa's Strategy for Development in the 1970s. ECA document E/CN.14/493/Rev.3.

never been in doubt. Learning and teaching are as old as man, and will continue for as long as man survives. Not only have they been the means of his survival and ascendancy over all other creatures but the fundamental curiosity of man and the drive to creativity makes the learning process an inseparable part of the satisfactions of human life. In so far as education and training is directed to the ends of personal culture and satisfaction, it is regarded as an item of consumption expenditure and, therefore, the charge upon society to be kept to minimal levels, within the limits of political acceptability. Education services thus continued to be provided and expanded under the pressures of social demand, that is, because it was the way to the attainment of social status through culture. There was a shift in the basis of the demand for education when the industrial revolution burst upon the world and brought about a radical economic and social transformation of the Western world. The lesson was quickly learnt that production, trade, national incomes and levels of living could be sustained and increased on the basis of expanding knowledge, new skills, inventiveness and adaptability, widely spread in the population. The new opportunities for exercising greater competence and earning higher incomes stimulated the economic demand for education and training. The political enfranchisement of the masses capped all this with the political demand for education as a fundamental human right to be literate and to be informed of what is going on.

The period following the termination of the last World War (1939-1945) brought on another great transformation on the world scene with the emergence of a large number of erstwhile dependent territories in Africa, Asia and the Caribbean area to national sovereignty status. By and large these were low income, stagnant economies, steeped in the inertia of age-old traditions and customs. But the peoples of these countries had become aware of their wants, and comparisons with the standards of living in Europe and North America increased their expectations of their Governments to lead them rapidly away from what they now began to see as poverty, unemployment and social injustices. Thus, was born the revolution of rising expectations and the development fever. It is not difficult to see how rightly these new nations perceived that education and training was one of the key levers to economic development. The African States, for their part, assembled in Addis Ababa in 1961 to declare their faith in education in these worlds: "... that economic and social progress is indissolubly linked with the development of education"; and, then went on to adopt the Outline of a Plan for African Educational Development.^{9/} Several such conferences were held since then, pursuing the same faith and conviction, defining needs and requirements a little more exactly each time. This Conference is continuing the same search but in a different sector, a rather neglected sector of educational activity.

^{9/} Report of the Conference African States on the Development of Education in Africa, Addis Ababa, 15-25 May 1961, UNESCO, Paris, 1961.

Upon what foundations is this solid faith in the role of education in economic development based? I shall state the conclusions for education in general and then touch upon the specific case of adult education, for this Conference is undoubtedly trying to catch the ears of Government leaders for a better deal for African adult education.

Firstly, education, through its vocational, training aspects, provides specific skills to the labour force, which are needed for the proper performance of a number of jobs. Investment in education, training and research (which is undertaken by educated and trained personnel), in schools and universities, through adult education, literacy and vocational programmes, enables men and women to acquire knowledge and techniques by which they can produce more and earn more.^{10/} The economic returns from education and training is thus established by relating it closely to production and incomes, though the calculation of the returns is fraught with methodological difficulties. The application of science and technology to development, mentioned under the second element of change, is possible only through preparation of men and women in the specific skills of the sciences and the technologies. Change also means a change in the levels and patterns of skills acquired through the educational and training process.

Second, it was noted earlier the extent to which the change element in the development process was a matter of social psychological changes in values and attitudes. Education is the means by which the socio-cultural infrastructure is changed over a period of time, and the impediments to development from this source reduced and eliminated. Most important for development is that education increases social and occupational mobility by providing access to education and training and thereby the acquisition of new skills and possibilities of higher incomes to classes in society which were previously disadvantaged.

Having stated these two broad ways in which education and training (conceived in its broadest connotation and including the formal and informal approach) is deemed to contribute to economic development, it should be observed that a strict dichotomy between the vocational and the cultural aspects is not as valid as once thought to be for economic development. Consider, for example, a developing country where dedication, integrity, industriousness, readiness to make personal sacrifices, mutual helpfulness and concern for the welfare of all the people, and empathy are the moral-spiritual qualities so essential to development but where self-seeking, hankering for easy ways to affluence, and corruption are rife. Is it still possible to deny the economic and social value of these non-measurable qualities? Yet again, fluency of expression and clarity in communication, which are sought to be developed through language teaching, are so often deemed to have only a personal, cultural value. Consider the growing number of occupations and economic circumstances in which communications skills, both oral and written, are of direct economic and social value. The compartmentalization of general from vocational education is equally not valid, nor useful when the learning and management of complex technical operations are dependent upon prior preparation through generalized,

^{10/} Adiseshiah, M.S. op.cit., p.65. There is a growing and extensive literature on the economic value of education. See for example, "Readings in the Economics Education", UNESCO, Paris, 1968; and, Economics of Education - Selected Readings, Two volumes, M.Blaug (editor), Penguin Modern Economics Series, London, 1968 and 1969.

theoretical education. The readiness to adapt, experiment and innovate, at all levels of production, is a mind alerted and informed through general education. The sum and substance of this argument is that in the modernization process there are no such simple dichotomies and choices in education. It is not a question of theoretical or applied studies, of fundamental or applied research, but one of choice of proportions in the national education mix. We lack the knowledge to prescribe exactly what that should be. Adiseshiah poses the problem for education thus:

"We are entering a world where no one knows what the morrow will bring. And so we must equip every man every day, in every way and in fact in every moment of his life to be the master of his fate, for he too is changing and must change, not simply the society around him".^{11/}

The dilemma of the educational planner, the politician and the consumers of education and training may now be resolved by the general acceptance of a new conceptual framework for education, namely, "lifelong education" (also sometimes described as "permanent" or "continued" education). The concept has been defined and elaborated in different but mutually re-inforcing ways. The International Conference on Educational Planning made this declaration:

"Educational planning can only be an effective instrument of comprehensive development if it contributes, through the choices which it makes possible, to a renewal of the education process. The latter should be conceived as a permanent - lifelong - process, and the confusion arising out of traditional identifications between education and school education, between school and presence of the teacher, between teacher and salaried official should be resolved. Thus, for instance, participation in non-school education tends to increase, both in developing countries where certain types of community action can profitably replace formal education and in developed countries where the potentialities of individualized education - particularly programmed learning - are being offered to increasing numbers. Further, education shall be comprehensive, reflecting the many aspects of development which it is called upon to serve".^{12/}

The fifteenth session of General Conference of UNESCO which met in 1968 subsequently also adopted this declaration thereby making it a directive for the future, in the following words:

^{11/} Adiseshiah, M.S., op.cit. page 170.

^{12/} Final Report of International Conference on Educational Planning, Paris, 6-14 August 1968. UNESCO, page 17. See also page 19 under the sub-heading "New Approaches to Education".

"In industrialized and developing regions alike, the basic concept should be that of lifelong education embracing all levels of the educational systems, all forms of out-of-school education, and even all policies for cultural development Lifelong education, the planning of which should be integrated into overall economic and social planning and which should be inspired by a spirit of participation should contribute to the implementation of the Declaration of the Principles of International Cultural Co-operation".^{13/}

René Dumont, writing on the essential requirements for agricultural development and on the needs of peasants and craftsmen, also lends support to this approach in the following unambiguous statement and call for innovations in education:

"Education is not necessarily very economically profitable, in itself, in the short run; and although this is too often forgotten, some systems are more profitable than others; it is these that we must set about establishing, which will call for serious studies free from any form of academic prejudice." The roundabout path of European humanistic teaching, when slavishly followed in poorer countries, leads mainly to restricting the numbers taught so much that the net economic results are not sufficient to justify the cost, particularly as most of the knowledge acquired through this type of education is not of immediate use and, in many cases, even its indirect usefulness may be questioned. In my view, it is now necessary in these young countries, particularly if they hope (legitimately) to catch up with Europe by quicker development to train each individual exactly in accordance with the needs of his future profession without anything "fancy" at the start. As education is now continued throughout life (an idea which must always be borne in mind), it can later on be usefully supplemented, improved, diversified and indeed have "trimmings" added with the help of the radio, books, newspapers and magazines, evenings courses, etc."^{14/}

Adisesiah elaborating on this concept of education for the future, re-affirms a truth long recognized by educators but which they have to date not succeeded in writing into as a comprehensive national educational policy. From the following statement of his one may discern the very wide scope of lifelong education, the variety of situations and the forms in which learning takes place, and the range of social agencies involved in providing it:

^{13/} Adisesiah, M.S. op.cit., page 171.

^{14/} Readings in the Economics of Education, UNESCO, Paris, 1968. Chapter on Agricultural Education and Development by René Dumont, page 667. The whole chapter is worth reading for its penetrative insight and constructive approach to education for rural development.

"There is no sector of life - whether it be the family, the school, the university, the business, the office, the club, the farm, the factory, the temple, mosque or church, the hospital, the cinema, or the recreation hall - where the effort to learn and train and develop the part of the individual involved in that sector is not possible. For all around us everywhere are lessons to be learned, knowledge to be garnered, information to be culled and opportunities to be seized for the personality to be developed in some subtle or obvious way". 15/

The Economic Commission for Africa, interested in promoting development-oriented education, convened an expert group meeting to consider the design of education for the rural areas and for industrialization. In the same conviction and spirit, the experts recommended the adoption of the following broad principles as a guideline for structural modification of the system of educational facilities, programmes and courses, which though expressed for rural development is equally applicable to the urban areas, and, therefore, to the national system:

- "(i) The scope of the educational services should be comprehensive in that it should provide for all ages and functional groups in the population, and, therefore, formal education should be available from the primary to the tertiary levels; and non-formal out-of-school educational opportunities must also be made available;
- (ii) The programmes and courses offered should be diversified to accord with the aptitudes and growing interests and proficiencies of individuals; and should be oriented to the environment in which education is given;
- (iii) The entrance or admission arrangements should be flexible and allow for multiple entry points at different stages in the individual's career, and permit transfer from one type or field of theoretical or applied study or training to another, so that opportunity is provided for the realization of the objective of lifelong education which is a sure way of ensuring that education serves the purpose of economic and social development." 16/

Before concluding this address, which up to now attempted to outline a conceptual framework for the discussions of the theme of the Conference, one should consider briefly how all this is applicable to the African situation. From the list of major topics and the eminent speakers assigned

15/ Ibid, page 170.

16/ Report of the Expert Group Meeting on Education and Training, for Development in Africa, Addis Ababa, 7-11 December 1970, (E/CN.14/515), paragraph 23.

to them, it is clear that Conference is being called upon to take a comprehensive view of national development. It is intended to review the relationship between adult education and political development, rural development, industrialization and social change; and, the means for achieving them. I have suggested that the conceptual framework of lifelong education offers the most useful approach to educational planning, and for relating education to comprehensive national development. This has considerable support from the aforementioned International Conference on Educational Planning.

In so far as Africa is concerned there appear to be some cogent and pressing reasons for adopting this approach. Africa is a later starter in development. It is only recently that Africans have begun to regain control of events and the natural resources on their continent. Before 1950 only three countries were independent and today there are 41 independent Black African States, and most of these attained to sovereign status only after 1955, barely fifteen years ago. The responsibilities of managing a modern state have been assumed by men and women who under the previous colonial regimes were denied the opportunity of gaining such experience. They have done remarkably well in the circumstances but there is a case for upgrading the knowledge and the skills of the existing cadre of legislators and administrators to cope with the peculiar problems of developing countries. Since they are adults of many years standing and already in their jobs, this may be achieved mainly by the processes of adult education provided chiefly through non-formal programmes, as a lifelong business of living and learning.

Nationhood is also a new experience, for narrower tribal loyalties were deliberately fostered by colonial regimes. Problems of national unity and cohesion are likely to loom large for some years to come. Furthermore, the strategy of economic development demands popular participation in decision-making, in implementing development projects and in sharing the fruits of development.^{17/} The achievement of the required degree of cohesion amongst the various functional and ethnic groups entails a sustained programme of adult re-education, carried out over the lifetime of the adult, and over successive generations.

The strategy of economic development in Africa dictates multinational economic co-operation, and ideally economic integration, because of the low purchasing power of the African masses, the small size of national markets, the difficulties of securing a share of the export markets in the developed countries, and the scarcity of trained manpower and investment resources. In spite of these pressing reasons there are political obstacles to economic co-operation. One suspects that apart from the problems of securing fair and mutually profitable trading arrangements, the postponement of decisions are often due to doubts of public support of the measures. This is an area where only adult education programmes are likely to be effective.

^{17/} See for example, Max Millikan: A Strategy of Development. Executive Briefing Paper No. 1, United Nations Centre for Economic and Social Information, New York, 1970, pages 6-7.

The economic backwardness of the African continent is fairly well documented ^{18/} and the outstanding features are well known to you. The speakers on this topic will no doubt provide more details. For the modernization of the national economies, especially of the large subsistence sector in which three-quarters of the population lives, the major constraints are quantitative and qualitative deficiencies in manpower.^{19/} At the same time there is generally underutilization of human resources, resulting in waste, frustration and further slowing-down of economic development.

The strategy document presented by the ECA Technical Committee of Experts to the Tunis session of the Economic Commission for Africa points out the failure of the educational system in dealing with the manpower requirements of development. To quote:

"In spite of noteworthy expansion in educational facilities and school enrolment, since the 1950s, the region is far from reaching those minimum levels of manpower requirements and capability in the management of its economies. Paradoxically, this educational effort has brought with it new problems of the educated unemployed, whilst there is a grave shortage of essential skills in many fields. The inadequate supply of competent trained manpower is felt in the managerial, professional, scientific, technical and artisan categories."

"Curricula structure and educational orientation are not geared to economic transformation, and the output of the school system does not, in respect of skills and attitudes, match the available jobs. Development implies the acquisition of skills by the people".^{20/}

The Committee then goes on to recommend the following strategy for the development and utilization of human resources in the 1970s:

"..... It must, in particular, be closely related to national policies on population, employment and income distribution. Measures must be taken during the 1970s to:

- (i) Realign the educational and training system with the needs and demands of a progressively developing economy and society, bearing particularly in mind the necessity to give education an employment orientation;
- (ii) Expand training programmes in science and mathematics-based professions and skills;
- (iii) Establish efficient machinery for a systematic, planned and co-ordinated approach to the questions of manpower development and utilization;

^{18/} See the ECA annual series: A Survey of Economic Conditions in Africa.

^{19/} Africa's Strategy for Development in the 1970s. (E/CN.14/493/Rev.3), paras 52-58.

^{20/} Ibid, paras 55 and 56.

- (iv) Eliminate waste in the utilization of currently available educational and training resources;
- (v) Develop national and multinational institutional facilities for research into human constraints in the development process, for the training of personnel in the assessment of manpower requirements, and for the formulation of appropriate policies and programmes."21/

Now in the African situation the broad educational profile of the population that emerges is this:

- (i) Some youths and adult men and women have had a complete cycle of formal education; others a partial formal education in the first cycle (primary dropouts); and, the majority none at all;
- (ii) much of the formal education has been irrelevant to economic and social development, especially in the rural areas.

This is the quality of manpower on which national development must be undertaken. Under-prepared or ill-prepared, their energies must be mobilized and utilized now for development cannot be halted until the outputs emerge from a reformed educational and training system a decade or more from now. Therefore, a vast programme of educational re-conversion and re-training is indicated to make people employable or more capable of doing the jobs they are doing now or to do new kinds of jobs. Since it is not feasible nor desirable to send them back to full-time schooling, the change must be effected through out-of-school, part-time education, which is the field of adult education. In other words, the planning of the national educational system must be undertaken in the conceptual framework of lifelong education to cope with the huge backlog of illiteracy (80 per cent) and ill-prepared candidates for work, for parenthood and for the polling booth. The nature of the programmes will range from functional literacy to raise immediately farm and industrial production to non-diploma and diploma courses conducted by nursing schools, co-operative colleges, public administration and management institutes, technical colleges, and universities, including the "open universities of the air".

If one took the view, which prevails amongst large sections of the population in various parts of the world, that all the education and training an individual requires for his lifetime is obtained in the few years of schooling, then the last two categories of persons mentioned above (dropouts and illiterates) have no hope of economic or any other redemption. Even the first category will find it necessary, as the nation advances, to update their knowledge and upgrade the skills to move on to positions of greater responsibility, interest and remuneration. Those who had completed

21/ Ibid, para 57.

only the primary cycle (generally six years) may find it even more necessary than the graduates of secondary and post-secondary institutions. The situation, therefore, calls for opportunities for all three categories of persons to continue their education and training, in their own time, at their own pace, in the fields of their interest, at the place and by the methods of learning of their own choice, at their own expense.

This approach, which in fact spreads education and training over a longer time span is in the long run likely to provide a greater volume of educational services, to a greater number of persons, at greater overall expenditure but the unit costs promise to be lower especially with the employment of new educational technology like the radio and television. In the short run, it has the advantage of relieving the pressure on resources for expanding expensive full-time education and training facilities for ever increasing numbers, which is a waste of resources if the type of education offered suffers from the deficiencies already noted. Above all, out of school education and training programmes clear the way to concentrate more resources on up-grading the knowledge and skills of the presently actively employed producers of wealth: on the farms, in the factories, shops, offices, medical centres, and so on. Thus, work and learning can proceed simultaneously, not in successive stages. African countries have reached near-budgetary ceilings to the expenditure on education and have to use their meagre resources more effectively. New strategies of education and training, like that embodied in the concept of lifelong education, are indicated. Obviously hard choices have to be made. The choice is not between full-time formal or part-time non-formal education and training, but once again of proportions, for the individual as well as the nation. It is a question of how much to invest on the education and training of future supplies of labour (available from eight to eighteen years from now) and on the re-education and further training of active workers and peasants. That would depend upon the educational profile of each country, its level of economic development, and the availability of total resources.

One is reminded of the comprehensive study of adult education made by the 1961 Addis Ababa conference on education and the strong recommendations forwarded to African member States^{22/}. More recently vigorous support for non-formal education ("that motley assortment of out-of-school training and educational activities") comes from the eminent economist-educationist, Philip Coombs, in his discussion of a new strategy of educational development. To quote:

"Most observers agree that non-formal education has a vital role to play, whether in continuing the education of already educated persons, especially in developed countries, or in bringing literacy and useful skills to masses of people in the developing nations who were deprived of formal schooling. Most would also agree, however, that non-formal education has thus far been seriously short-changed and under-developed.

^{22/} Final Report, op.cit Chapter VII. UNESCO, Paris. 1961.

In most countries, ministries of education and educational planning have been blind to non-formal education. Formal education has its own ministry (by whatever name) to watch over it and fight its battles, but non-formal education has been everybody's business and therefore nobody's. There is a clear need to develop a better division of labour and better integration between the two, and to stop short-changing non-formal education".^{23/}

I should like to conclude with a brief look at the challenges and the main task for education in general in the Second Development Decade. We can agree with Coombs that the most important educational targets for the 1970s cannot be defined in simple numerical terms; that the Second Development Decade cannot be "a mere numbers game" if education throughout the world, no less in Africa, is to overcome the crisis it faces. The toughest educational challenges of the 1970s are primarily qualitative in nature and this has been affirmed by African member States at the 1968 UNESCO/OAU-sponsored Conference on Education and Scientific and Technical Training in Relation to Development in Africa held in Nairobi.^{24/} In the last analysis this calls for radical innovation on a massive scale. To quote the words of Coombs again:

"But innovation is not something new. The world has so far survived and benefited from a succession of revolutionary innovations in agriculture, industry, medicine, transportation and communications. A corresponding educational revolution is long overdue, and for lack of it the whole world is paying a heavy price. To help get this needed educational revolution rapidly underway should be the over-arching aim of the international strategy and targets of educational development in the coming decade".^{25/}

I believe that this educational revolution will come first in the area of out-of-school adult education. It is in bringing this about that there is meaning and significance to the work of your Association. I wish you every success. Thank you.

^{23/} Coombs, Philip. H: The Need for a New Strategy of Educational Development. Chapter 6, pages 143-144 in International Targets for Development, Richard Symond (Editor). Harper Colophon Books, New York, 1970.

^{24/} Vide the Final Report, Resolution II, 6(a), page 18, UNESCO, Paris, 1968.

^{25/} Coombs, Philip, H. op cit, page 153.

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VI. MEMORANDUM ON
PRACTICAL TRAINING IN THE EDUCATION OF SCIENTIFIC
AND TECHNICAL PERSONNEL IN AFRICA

Both developed and developing countries today realize the importance of technical education and training in fostering economic and social development and are increasing their facilities for the production of national technical personnel. This realization has prompted many developed countries to establish new colleges of technology and research institutes, and some of them have enacted industrial training acts. Some developing countries have launched special crash programmes designed to produce large numbers of technicians needed for the implementation of industrial programmes as has been the case in Brazil since 1942. These special programmes have usually consisted of two to three years training, combining class-room lectures with supervised practical in-plant training. Students who have had the benefit of such balanced education inculcating genuine interest in, and appreciation of the practical application of knowledge usually do not feel reluctant to engage in non-clerical jobs.

In some developed countries undergraduate education is oriented to general education and the acquisition of knowledge and skill that are designed for practical application such as the education provided by the Land-Grant Colleges of the United States of America. In such communities the environmental setting accords appropriate status and occupational values to engagement in work requiring the application of technical and manual skills. In a developing country it is men who have had an education that is oriented towards development needs and who have been trained to apply their knowledge to bring about structural change that are best placed to pioneer innovation and development in their countries. Unfortunately, education in developing countries is usually oriented to interest in status-earning clerical occupations; and, highly educated technical and professional men tend to dislike soiling their hands by working in the field or the factory floor.

In Africa the training of technical and scientific personnel is undertaken primarily at three levels of the educational system, namely,

- (i) Middle Technical Schools, Trade Centres and "Ecoles professionnelles" with three to four years' courses for the training of skilled workers;
- (ii) Secondary Technical Schools or technical lycées running 5-6 years' courses for the training of technicians;
- (iii) Higher Technical Schools, Colleges of Technology and Universities, offering courses of three or more years for the training of professional personnel, technologists or scientists.

* Prepared for the ECA Training Information Notice, 1968. (Document Reference ECA/MPTR 10/68).

In terms of educational orientation the pattern of training in Africa at all three levels is fairly similar. Instruction programmes emphasize literary education and academic attainments and interest in the productive application of skill and knowledge is relegated to the background. For scientists and technicians, practical training is commonly confined to laboratory and workshop tests, and pre-employment technical experience in the real world of agriculture, industry or business is generally absent. Most instructors and lecturers in institutions offering technical and professional training have themselves not had practical experience in industry or business in fields pertaining to their specialization. They therefore do not see the necessity for their students to supplement their theoretical training with practical technical experience. One university professor observed with great conviction, "The faculty of science provides to its students a higher classical education aiming solely at fundamental research and the training of teaching personnel. Students interested in industrial future are exceptions".^{1/}

In face of the prevailing challenge of African development, the view is no longer tenable that education at the higher level should maintain established standards set by Western educational systems and should continue to produce intellectuals able to hold their academic merits anywhere in the world. Rather, the new orientation is for educational programmes that will produce development pioneers such as technicians, engineers, scientists and agronomists able to apply their acquired skills to the actual operation of development processes. The challenge of industrialization and agricultural modernization has no need for the professional engineers or scientists who glorify academic distinctions and whose vocational values are deeply ingrained in high-status administrative posts. Regrettably the new educational orientation in favour of development needs has not yet gained wide currency among educationists and teachers in Africa. One excuse commonly heard is that there are no local facilities and funds for broadening the educational programme to include supplementary practical training.

Africa's requirements of scientists and technical men call for people able to use both "brain" and "hands", to apply laboratory results and acquired knowledge in solving the practical problems of industry and agriculture, and for teachers able to give reality to their subjects by drawing on their own practical industrial or business experience for the applicability of theory and principles.

It has been recognized that, taking into account the type of student and his skill or technical occupation, it is a great advantage that he should gain experience in industry concurrently with attendance at college. Most technical college students have neither the academic interest nor ability which would lead them to deal effectively with abstract concepts unrelated to practical application. Experience on the job thus illuminates and makes

^{1/} ECA Report on "Interest in Supplementary Practical Training in Industry for Students of Science and Technology in African Countries", MPTR/9/67, Annex page 1.

more efficient the learning and understanding provided through technical college.^{2/} The continuance of theoretical education divorced from practical experience breeds only misfits. Those who have had the opportunity of this type of education consider themselves only as the élite and are rather reluctant to enter occupations involving manual work. Furthermore, there is a tendency for many technical school graduates to seek employment in the better-paying high-status clerical occupations. Such an attitude of mind and flight from vocational training derive from the fact that the environmental setting in which they live has failed to accord adequate recognition and pay to technical vocations. Due recognition has to be given to induce technicians to remain in their vocations.

Technical personnel may be trained either through the actual working process, from apprentice to engineer on the factory floor or through formal schooling at secondary or higher educational levels. For effective training "higher education of scientists and engineers, in a more advanced technological world, calls for closer co-ordination of theory and practice. Higher productivity through industrial development cannot come about without well-trained scientists, engineers and technicians. Industrial training of responsible personnel has to start at an early stage of higher education to supplement the university syllabi and to make engineering and science education meaningful with a view to successful future industrial management".^{3/} This co-ordination of theory and practice forms the basis for the training of scientific personnel in most industrialized countries and has made possible great advances in the application of scientific knowledge in these countries.

The advantage of early exposure to practical work experience is twofold: it facilitates the theoretical comprehension of some abstract subjects. Graduates, once they have finished school, will need less time to adapt themselves to the real world of work and will not belittle manual work when entering employment for the first time. As H. S. Williams remarked, no system of technical education is sufficient on its own to create an adequate and efficiently trained work force. A system of technical education must be supplemented by a strong system of industrial training as there are many aspects for which no formal education system can provide the most suitable and effective circumstances for training.^{4/}

The new approach is steadily gaining recognition in Africa. The Conference on Engineering Education in Africa, held in Kumasi (Ghana) 9-14 July 1967, recommended, among other things, that close co-operation with industry is also needed in the planning of educational curricula and job training of engineering graduates. This requirement is equally important in the training of technicians and skilled workers. Increasing number of schools are sharing these views. As a respondent to a questionnaire on interest in practical training indicated, "The policy of the faculty is that

2/ Hugh King: "The Administration and Organization of Australian Technical Education" in C. Sanders, Technical Education for Development, London 1966, page 95.

3/ Training in Industry Abroad for Students of Science and Technology. A study undertaken by the International Association for the Exchange of Students for Technical Experience, October 1966, Germany (FR), page 11.

4/ H.S. Williams in "Technical Education for Development", op.cit.

students should receive practical training during each long vacation".^{5/} However, this expression of intention has not yet been translated into revised curricula and into operational programmes in many institutions.

At both secondary and post-secondary levels, the curricula for the training of engineers, technicians or skilled workers in most African countries bear the same characteristics. They are normally composed of formal lectures, workshops and examinations. After leaving formal training, graduates of these schools take upwards of five or more years to acquire work experience before being able to cope with the more difficult and practical problems in their fields. A re-thinking must therefore be made regarding their training. Schools must produce people who will be more readily adapted to the industrial and business world. This can be done only by co-ordinating their training with the real world. In a training period of three years, the equivalent of 'two terms' work ought to be devoted to practical work in the field, in industry or establishment, and the award of the final diploma ought to require not only successful theoretical examination results but also the possession of relevant practical industrial work experience. To achieve this objective there is therefore a great need for co-operation between the educational system and industries in organizing and supervising the practical section of the syllabus. It needs to be borne in mind that training for specific occupations in industry has become a co-operative enterprise between technical colleges and industrial undertakings.^{6/}

Local training opportunities

The argument that there are very limited local opportunities for industrial training and technical experience is not a very convincing reason why technical students should not have practical training. Potentials exist. What is often lacking is the initiative and organizational ability to foster co-operation with employers with a view to taking advantage of local potentials for practical training. Industrial enterprises in big towns, and government technical ministries such as agriculture, power, public works, transport, etc., provide useful opportunities. Large contract works financed by governments could offer valuable practical training opportunities. Some institutions are already organizing local programmes for their students, although few make it a requirement for their degree courses.

Even where local opportunities for practical training are on the increase, the appropriate machinery may not exist locally for taking cognizance of these opportunities, mobilizing the support of employers and the interest of students and seeking the funds and other means for giving reality to an organized programme of supplementary practical training. The organization for fostering practical training among students must itself have adequate contacts with men of business and industry to be able to gain the right type of information needed to acquaint students of local opportunities in the various trades in which they seek practical experience. In most African countries

^{5/} ECA Report on "Interest in Supplementary Practical Training in Industry for Students of Science and Technology in African Countries", op.cit.

^{6/} Hugh King, Technical Education for Development, op.cit. page 95.

vocational guidance services do not exist, let alone information on where and when to gain practical training experience relevant to a student's chosen field of formal education.

The training of technical workers on the job is costly. Industries providing such training expect the investment to pay off after a long term of employment. Taking students on for employment and training over a period of 2 to 3 months and then releasing them is usually a costly undertaking that many private industrialists and employers may not want to consider. This ought not to be a deterrent to action altogether. The educator can still approach private employers to arrange training programmes for some of their students, at least. The wage payment should be regarded as secondary in importance if only students realize that while they work and get some pay they are also undertaking an essential training. Students' rate of pay might be set a little lower than that for qualified workers doing the same job. A country, with the government taking the initiative, might work out and operate an institutionalized scheme of "Industrial Training Fellowship" for technical students.

A few institutions have realized the necessity of providing practical training opportunities for their students, and some have integrated this requirement into their training policy on the acquisition of degrees and diplomas. For instance, at the Building College of the Haile Selassie I University, the four-year diploma programme is divided into (a) a two-and-a-half year course of theoretical studies, and (b) a one-and-a-half year course of practical training. All summer vacations are used for practical training in industry and placement is organized by the College in close collaboration with employers. On an experimental basis the University College, Nairobi, has set up a scholarship programme with the assistance of Ford Foundation to support the vacation training of some of its students. In either case, the major problem does seem to be that of finding enough suitable offers of employment with reasonable wages and the efficient supervision of the students' work.

With the mounting of annual programmes employers gradually come to accept the responsibility and are prepared to make a contribution; students begin to enjoy the change; lectures become more meaningful and the nation ultimately gains by employing better-qualified manpower. Once a programme is started, industries and employers can be induced to indicate in advance each year what jobs they have available for students during the coming vacation. What all this requires is not so much of money; there is very little administrative cost involved. The requirement is initiative, tremendous organizational ability and contacts. Every university and every technical institution should be interested in such a programme and should consider operating one, if they are not already doing so. It is part of their function of developing manpower for nation building. Africa needs scientists and technical personnel who can apply science for development and engineers who can practice their profession as qualified technical men, and local institutions have the responsibility to produce them.

Besides the opportunities offered during the long vacations for students to gain practical technical experience, well-designed and suitably oriented undergraduate programmes could enable students of agriculture, engineering or business to undertake their courses, sandwiched between university classrooms for theory and the world of industry, business or agriculture for the practical application of theoretical knowledge. In this regard, African universities and higher technical institutes definitely have something to learn and apply from the type of orientation and training offered by the Land-Grant Colleges of the USA. The task in this case may be largely that of designing a suitable programme, getting the co-operation of industry and finding money for the experimental and demonstration work involved. Faculties of agriculture, for example, should find it not too insurmountable a problem to secure land, research projects and funds, through collaboration with the ministry of agriculture, in establishing a demonstration farm, and run as a paying project to convince agricultural students that farming is both an honourable and a rewarding vocation.

International exchange

Opportunities for the acquisition of practical training for students of science and technology are not restricted to national frontiers. Some countries possess adequate facilities which could give most useful experience to students from other countries. In this regard, experience in industrialized countries is of particular importance to students from developing countries in view of the frequent lack of opportunities for suitable in-plant experience in their home countries.^{7/}

At the international level there exists the International Association for the Exchange of Students for Technical Experience (IAESTE), a non-governmental, non-profit making organization which fosters the exchange of students for the purpose of gaining practical experience abroad in industry during the long vacation. Through its programme, thousands of students from developed and developing countries have secured the opportunity to gain adequate practical experience related to their fields of study, see other people at work and play, develop interest in their future vocations and cultivate a mutually beneficial international understanding and goodwill. Between 1966 and 1967 well over 18,000 students participated in its exchange programmes. At present only the UAR, Tunisia, South Africa, Sudan and Nigeria are either full or associate members of the IAESTE. Some other African countries have participated in the programme on an interest-creating basis.

The IAESTE welcomes all nations and it co-operates with organizations fostering similar objectives. Since 1965, the ECA has entered into co-operation with the IAESTE with a view to promoting among African institutions interest in the IAESTE programme and in local practical training programmes.

^{7/} C. Sanders: Technical Education for Development, op.cit. page 56.

At its 21st General Conference held in Athens in January 1968, the Association expressed its readiness to continue collaboration with the ECA in order to foster African interest in student exchange. It has consequently made available to African countries this year several offers of vacation jobs for practical training on a promotional basis, by waving any obligation for African countries to reciprocate with offers of opportunities for European, American, or Asian students to be offered vacation jobs in Africa.

Through membership of the IAESTE virtually the whole world makes available opportunities for students of science and technology to acquire practical technical experience at little cost to the students themselves and little or no direct costs to their home government or sponsors. For African students, not only will membership of the Association make it possible for them to gain experience in Europe, the Americas, Asia and the Far East, but also to learn from neighbouring African countries. In the field of agriculture, transportation, civil and mining engineering, public works, etc., several African countries have some experience to offer not only to European or Asian students but also to African students, too, taking into account the diversities in African economies and development programmes.

A major hurdle to African students taking advantage of the IAESTE offers is the problem of international travel costs. Under the programme, students pay their own fare, but they receive wages while they work and learn. The level of wages is sufficient to cover living expenses, provide some pocket money and sometimes a surplus to buy much-needed textbooks. Unfortunately, most African students come from low-income homes and they find it really difficult to afford the high cost of international travel for the purpose of gaining job experience.

Some of the more deserving students in the initial years of fostering interest in practical training could be assisted in a number of ways, such as:

- Partial grants by the University;
- Partial grants by the Students Union;
- Partial grants by the Government;
- Part-grants and part-loans to students;
- Interest-free loan fund providing loans repayable after graduation;
- Grants by private foundations or industry;
- UNESCO Travel Grants;
- Self-help by the students themselves through savings and earnings from vacation jobs.

The need for students to have practical training has generally been recognized by educators, governments and employers. But hardly anything has been done to provide the opportunities. Action can, however, be taken through:

- (a) The organization of local training programmes for students during the long vacations. Governments need not be directly involved in these programmes. It should really be the result of a joint effort between the university authorities, students union and industry or employers. The institutions responsible for the training of students in collaboration with the students union should initiate contacts and negotiation with employers. When contacts prove fruitful, the three parties interested in the programme could inaugurate an appropriate committee to promote practical training for students, seek financial assistance for their programmes and interest local employers to offer more vacation jobs;
- (b) Success in developing local practical training programmes and in evolving a national machinery to foster interest in technical experience, will prepare industries and students to participate in international students exchange. This is the stage to introduce students to the IAESTE exchange programme on a fully reciprocal basis when the country can receive and offer vacation training jobs.

The home programme and the IAESTE programme are therefore complementary. Action in promoting interest in both programmes may be taken one after the other, or simultaneously. Institutions interested in the IAESTE exchange programme and wishing to know more about the Association's aims and objectives and how it operates may direct their enquiries to:

The International Association for the
Exchange of Students for Technical Experience
532 Bad Godesberg
Kennedy-Allee 50
Austria

External opportunities for gaining practical experience in industry and in other technical fields can be most helpful to students in developing countries where the experience gained abroad eventually enables them to apply themselves efficiently in finding solutions to their countries' development problems. In practice, only the privileged few or the more fortunate students are either able to train abroad or find the travel funds for participating in international students exchange such as that of the IAESTE programme. Consequently, the several thousands of high- and middle-level scientific and technical students training locally to meet national requirements of scientists, engineers and technicians have practical training needs which must be met if they are to have a well-grounded education and training for their future career. To meet this mass requirement, action must be taken at the local and national levels by the interested parties mentioned earlier to organize practical training programmes, whether as vacation training jobs or as an integral part of formal education, to search for moral and financial support for operating vacation training job programmes and to evolve an effective national machinery for taking the desired action. For this action co-operation between employers, university and college authorities and the students unions must be secured.

Equally, national action is necessary to give the content of formal educational programmes the right orientation to the needs of economic and social development, in terms of the supply of trained manpower, in particular men able to apply their acquired knowledge and skills in solving development problems and in pioneering development innovations. This also applies to any action designed to foster the right environmental setting in which engagement in manual and technical vocations is accorded the status and remuneration it justifiably deserves.

VII. EDUCATIONAL INNOVATION: AN ANALYTICAL FRAMEWORK*

Aim

The aim of this paper is to suggest an analytical framework that can be used in the study of 'educational innovations' in general and innovations in agricultural education and training in particular. It does not claim to be comprehensive. It only attempts to mention some of the points worth considering in a systematic and methodical study of educational innovations.

Rationale

One might ask what the rationale is for designing such a framework. The author thinks:

1. Increased clarity in our conceptualization of educational innovation can lead to less confusion in grasping the process of change and to its more intelligent control and direction.
2. Innovations in education are taking place everywhere, now-a-days, more so than in the past and are getting to be more expensive, like educational television, for example. They warrant a systematic study and analysis, if they are to be effectively used at a minimum cost in a planned change of an educational system.
3. The present climate is favourable for change and alteration of educational systems everywhere. People are questioning the bases for the various practices and beliefs in the on-going educational establishments and systems. There is not only a sense of impatience with the existing educational establishment as seen in the various students' riots and strikes everywhere, but also a desire and willingness to modify and even alter it, and to adapt it to local and prevailing needs and conditions as evidenced by the various education reforms taking place. Given an increased understanding of the process of innovation we would be favourably placed to manage the educational system more effectively and to direct it smoothly and efficiently to meet the changing needs of the individual and the society.
4. The need for agricultural modernization is great due to the rapidly increasing population:
 - (i) who certainly need to be fed or feed themselves, and
 - (ii) which in Africa is largely rural and without any means of earning a living other than agricultural. And, therefore,

* This framework has been designed with the aim of providing a guideline for the secretariat to carry out a series of case studies on innovations in agricultural education and training. It was also presented as an information paper to the ISS/ECA Symposium on Educational Innovations: Policies and Administration in Africa, Addis Ababa, 1-10 September 1971.

Some of the ideas contained in the formulation of the framework have been derived from a variety of sources too numerous to list.

the study of innovations in agricultural education and training may help accelerate the modernization process of this important sector, if development in terms of self-reliance in food production has to make sense.

Definition

What, then, is 'educational innovation'? It is, perhaps, difficult to give a comprehensive definition but an attempt might be made in this direction by giving a general definition of the term and outlining the main elements that characterize the subject.

Educational innovation could be broadly described as a dynamic policy, a programme, a project, a method, a technique, a pattern or a design formulated, planned, devised, created or invented to bring about a change in the educational policy, programme, structure and operation in a given system of education so that the system:

(a) meets the changing needs of the individuals and the society at large effectively, and/or

(b) increases the efficiency of the various resources it employs in the performance of its task.

It is deliberate and purposeful in character for it is meant to bring about a change of some sort in the system of education thereby enabling the system to adequately function. A system is generally defined to mean "a bounded collection of interdependent parts, devoted to the accomplishment of some goal or goals, with the parts maintained in a steady state in relation to each other and the environment by means of:

(i) standard modes of operation, and

(ii) feedback from the environment about the consequences of system actions".^{1/}

Education could be viewed as a complex system having a certain number of interdependent parts:

(a) - people: pupils, teachers, inspectors, supervisors, researchers, examiners and evaluators, counsellors and guidance officers, administrators, janitors or service personnel, policy-makers, pressure groups, and parents;

^{1/} Mathew B. Miles (ed); Innovation In Education, Teachers College, Columbia University, 1964, p.13.

(b) - physical and material resources: school plants and classrooms, laboratories, libraries, textbooks, instructional aids, equipment and materials, finance;

(c) - activities and processes: courses and studies, seminars, workshop; field visits; conferences; games and festivals; teaching methods and techniques including correspondence education; organizational, administrative, and planning procedure; supervising, examining, evaluating, counselling, researching and storing information, consulting, etc.;

(d) - a, b, and c would be the in-puts in the educational system. Their working smoothly and interdependently makes possible the realization of (a) which is the out-put of the system.

Educational innovations could be classified as:

(i) within-system innovations, and,

(ii) outside-system innovations.

The within-system innovation is that type of innovation which originates and takes place within the system of education itself and is directly affecting the system or its units or parts, such as an in-service programme for teachers. The outside-system innovation on the other hand is that type of innovation which originates and occurs outside the education system itself, such as typing machines, and is - (1) meant or intended to bring about a change or, (2) have gradually a bearing in the complex system of education, such as in science and technology (e.g. satellites), and various institutions for the promotion and advancement of learning. The within-system type of innovation would appear to be easily assimilable and less dramatic while the outside-system type of innovation appears to be rather drastic and up-setting as well as slowly assimilable and more costly. A systematic study of educational innovations would thus require an understanding of the system of education as a sub-system of the societal activities as a whole and its great susceptibility to requirements and changes in other societal sub-systems such as politics, economics, religion, etc.; and an analysis of the various components and their inter-relations of a system of education, through which the innovations could be easily identified and be classified.

Components of a System of Education for the Purpose of Identifying and Evaluating Innovations

There are at least six broad areas or main components of a system of education.

One, is the content of education, i.e. the subject matter of learning/teaching like courses known as physical and social sciences, the arts, the humanities, and the various technological and professional studies, new subject-areas.

Two, is the method of education, i.e. the technology and approach used in effecting a meaningful learning/teaching of the subject-matter, like teaching aids and audio-visual techniques; method of presentation arrangement of learning/teaching sequences, play-way of learning/teaching, etc.

Three, is the structure of education, i.e. the way the educational system is organized and arranged to achieve the set individual and societal goals of education. Educational structure can be viewed horizontally or vertically. When seen horizontally it would mean like general, comprehensive, technical commercial, agricultural and other vocational secondary schools, or other establishments related to functional groupings in a society such as adults, women, youth, and other service oriented institutions, etc. And when speaking of vertical structure it would mean from pre-kindergarten, kindergarten, elementary to secondary, college and university level establishments. It is the levels of education (primary, secondary and tertiary) through which a person passes to realize certain educational goals and reach a certain level of efficiency. The educational structure might also be viewed from the formal and informal type of organization - the formal type to mean that walled, graded and certificated type of instructional organization, and the informal type to mean the wall-less, flexible and ungraded pattern of instructional organization as seen in the various forms of adult education, apprenticeship education, on-the-job training, and radio and TV programmes.

Four, is the administrative/management process of education which deals with the day-to-day decision-making process in the management, co-ordination supervision and planning of the school system. The decision-making and planning processes are exercised at every level through the hierarchies of the system from the classroom level up to the Ministry or even higher levels such as the council of ministers or the legislative body of the government. And the decisions made range from policy to routine administrative instructions.

Five, are the linkages in education. Linkages in education are of two kinds: (i) internal and (ii) external linkages. The internal linkages are those types of arrangements or establishments that serve as a link between and among institutions or units of the system itself, such as educational guidance service, examination boards, remedial classes, inter-university councils, national teachers association, elementary or secondary teachers association, inter-school athletic competition, oratorical contests among secondary schools, etc. External linkages on the other hand are those that link the system itself or its parts with the other systems in the society, like economic, political and other types of social system. One can speak of parent-teacher associations, national student service organizations, scout and girl guide movements, extension and correspondence services, alumni associations, scholarship funds, etc., as external linkages. Added to these two distinct type of linkages are also those linkages that are of the border-line type, such as student-government bodies, student placement services, national councils of education, etc. Understanding the various types of linkages in education is very important in the study of

educational innovations, since they have a direct bearing on the acceptance or rejection as well as on the rate of acceleration and effectiveness of educational innovations.

Six, is the research and evaluation aspect of education. This aspect of education is primarily concerned with the investigation and evaluation of the resource-use pattern and the processes of the system and their consequences and thereby rendering service to the relevance and efficiency of the system. Centres, units, or institutes of planning, statistics, manpower, cost-benefit analysis, audio-visual development, and other research and evaluation units are thus formed to look into the system and to feed it back with needed information, mode of operation and use of resources for its smooth running and adjustment to its changing task. One might speak of these as para-educational components of a system of education.

Steps in the Study of Educational Innovations

A. Area

Innovation can take place in any one of these broad areas, aspects or components of an educational system; or in any of their micro-parts or units. The first step in the study of educational innovation, should be, thus, the identification of the area (macro or micro) in which the innovation was introduced. This means that one should be able to tell what the particular educational innovation is about. Does it deal with the content of education? If, so, what particular type? In the case of innovations of agricultural education and training, for example, it is possible to have various types of innovations that deal with the preparation of the seed bed; the methods of sowing, weeding and pest control; the control of soil erosion; the selection of varieties of seed; the use of fertilizers and new implements, the need for artificial insemination and feeding of cattles, etc. In the study of actual innovations in education in general or in agricultural education in particular one should be able to tell the subject matter with which the particular innovation is concerned. The more we understand the various components of education in general and of agricultural education in particular the better would be its service as a tool or a framework for actual study and analysis.

B. Cause and purpose

After having identified the area of a particular educational innovation, the next step should be to try to understand its cause and its purpose. What caused the particular innovation? And what was it trying to achieve or accomplish? Educational innovations normally come about as a result of inadequacies in the system or its sub-systems and are meant to correct the prevailing ill-practices and misconceptions. The system may also be confronted with a new demand to be met, and to cope with the new demand it may need further adjustments, i.e. further innovations. There could be several and differing causes for particular or given innovations. Their objectives could as well be several and different. It is, thus important to particularize the cause or causes of a given innovation and also the

particular objective or objectives it set to accomplish; for they have a bearing on the diffusion process of that particular innovation. If, say, a proper study is to be made of CADU's innovation on the training of farmers, like the Training of Model Farmers, and consider its transferability to places other than Ethiopia, it is important to have an understanding or appreciation of the background circumstances that led to the development of such a scheme and what it was intended to do and achieve. This does not have to be detailed but the salient factors or points should be mentioned. It is when conditions are similar that innovations can be easily transferred.

C. The Innovator and his Characteristics

Behind every innovation there is an innovator. The innovator might be one who is within the system or outside the system. And this fact makes a difference to the way in which the particular innovation is adopted or rejected. It is likely that an agricultural innovation is readily accepted by farmers if the innovator is a farmer himself than a person totally or even partially unrelated to farming. Similarly, an innovation designed by a group of people or an organization is likely to be more readily accepted by the system as a whole than the one by an individual person. This is more so true in such systems like education where the main operating factors are people with varied backgrounds, prejudices, fears, preferences and habits, etc. It is thus, important that one identifies the innovator of a particular innovation in one's study of educational innovations in general and agricultural education in particular. Who is the innovator? An individual, a group of individuals, an organization or institution directly or indirectly or none at all involved in the area where innovation is introduced? What characterizes the innovator? Is he a national or an expatriate? These types of questions should be included in a framework that would be of service in the analytical study of educational innovations. The more that is known about the innovators, their role and their characteristics the more helpful it becomes to bring about a planned change.

D. The Strategy and Means Used by the Innovator/Organization

An educational innovation is meant to be installed in an on-going educational system, and usually strategies are devised and measures taken to incorporate a particular innovation successfully. Innovations that could have been a success fail because of poor strategies or wrong measures taken. The strategies involve money, time and other facilities and organizations. These are important elements to be noted when analytical studies of educational innovations are made. They are important because they play a decisive role when considering the transfer of an innovation elsewhere other than its own place of origin.

E. The Cost of the Innovation

Certain innovative ideas or programmes may be excellent in themselves but too expensive for poor countries to implement. Innovations such as a closed circuit school TV and teaching machines may be effective educationally speaking but may be beyond the present capacity of countries with limited

means to implement. On the other hand, certain innovations may be effective and also cost practically little. Such types of innovations are more likely to be adapted by countries with limited means. It is important that note be made of the financial cost of an innovation as it is an important factor in the diffusion process.

F. The Difficulties, Obstacles or Resistance met in bringing about the Innovation

It is rare that educational innovations, including those related to agricultural education get adopted and practiced without encountering difficulties, obstacles or resistance of some sort. There are many factors that inhibit change from taking place in the education system in general and in agricultural education in particular. Such factors like the rut of experience, administrative reticence, educational bureaucracy, insufficient finances, community indifference and resistance, inadequate knowledge about the process of change, inadequate teacher education programmes and in the case of agricultural education the conservative characteristic of farmers, the unpredictable nature of farming itself as well as the small return and high investment of farming enterprises, and so on, act as obstacles to innovations in education from getting adopted. Personalities also play an active role (positively or negatively) in bringing about the innovation. Who are the key figures or operators and pressure groups, who are influential in blocking or facilitating the adoption of educational innovations? Such operators are found at various levels of the educational system e.g. the decision-makers at the ministry level and at the school or programme level; the inspectorate, the regional educational officers, at the in-between level. It is thus important to take note of the particular difficulties or obstacles which a particular innovation encountered in the process of its installation, as well as the key-operators in the system.

G. The Fate

An innovation that attempts to install itself in the on-going system of education may end up as a success fully or partially, or as a failure. There might be several reasons for its success or failure. What happened to it, and what were the reasons for whatever its fate was? These are important questions to raise in the study of educational innovations. It would also be significant to note the various shapes an innovation takes when undergoing the process of adoption or installation, for there are modifications of some sort that any innovation undergoes due to the various obstacles and resistance it encounters as it passes from one stage to the other.

H. Applicability and Transferability

One of the main purposes for the study of educational innovations is to assess their applicability in places other than those of their origin. It is important and essential that countries learn from the experiences of one another. But at the same time they should know what to imitate and what not to imitate. For it is conceivable that an innovation that has been a

success say in country X might be a complete failure in country Y. Thus notes should be made of the pre-requisites essential for an innovation to be successfully applied elsewhere. What are the conditions that must be present if a particular educational innovation is to be applied successfully in a given country other than its origin. In other words, how applicable are educational innovations in America or Europe to Africa? Such questions must be answered in the study of educational innovations, if efficient and effective use is to be made of them in the overall process of planned change.

Conclusion

The steps enumerated in the previous paragraphs are not thought to be exhaustive. They should serve as guidelines in the study of actual cases of educational innovations. A case study of an educational innovation should at least give a description of what the innovation is about and where in the components of education it fits; of its history - how it came about and what factors led to its being, i.e. the sources of its motivation and encouragement; of its purpose or philosophy - whom it is intended for and what it purports to achieve, i.e. its anticipated outcomes; of its designer or innovator -- who the innovator is and what are the conditions that surround him; of the strategies, approaches and means used to implement the innovation - what methods and techniques were used initially in the planning stage and in the stage of implementation within the on-going system of education; of the cost it incurred - how much money was spent to plan it and to implement it; of what difficulties and resistance were encountered and their effects on the innovation itself - what were the types of difficulties and resistance met and who were the key-operators in the system that acted as bottlenecks or as pushers of the innovation; of what has happened to it in the end, i.e. end-result - has it failed or is it a success and in what form? of the time it took from its planning stage to the stage of its implementation; of the possibility of its transferability to other places than its place of origin and implementation - what are the essential elements or conditions that would make the innovation diffusable in other places and other system of education. These are at least important questions that need to be asked in a systematic and analytic study of educational innovations and should form part of the conceptual framework of analysis.

Appendix. A QUESTIONNAIRE ON INNOVATIONS IN AGRICULTURAL EDUCATION AND TRAINING

I. Background and Setting for the Innovation

- (a) When the innovation took place
- (b) Where the innovation took place
- (c) Why the innovation took place
- (d) What the innovation replaced
- (e) What were the anticipated consequences
- (f) What were the deciding elements:

- 1. Individuals
- 2. Institution
- 3. Authority (Political)

II. Description of the Innovation

- (a) Name of the programme
- (b) Purpose and objectives of the programme
- (c) Nature and duration of the programme
- (d) Target population of the programme
- (e) Motives and Incentive of the programme
- (f) Organization of the programme

III. The Innovator and his Characteristics

- (a) Type:
 - 1. Individual - Generator/Diffuser
 - 2. Institution/Government - Generator/Diffuser
- (b) Role and Function

IV. Cost of the Innovation - How Much

- (a) Planning cost
- (b) Implementation cost:
 - 1. Capital outlay
 - 2. Administrative - running costs
 - 3. Instructional
 - 4. Other services
- (c) Sources of finance:
 - 1. Government
 - 2. Foreign Aid
 - 3. Private
 - 4. Mixture
 - 5. Other

V. Strategy and Techniques of Implementation and Management

1. Techniques Used

(a) Consultation:

1. Interest groups
2. Pressure groups
3. Legislative authority

(b) Trial - Demonstration - Experiment

(c) Seminar - Conferences - Study Courses

(d) Hand-Outs

(e) Publicity/Advertisement - Radio, Newspapers, T.V.

(f) Timing

2. Resources Used

(a) Physical

(b) Human

(c) Financial

3. Organizations Management Established

VI. Difficulties Encountered:

1. (a) Initial problems

(b) Problems during implementation

2. Types of difficulties

(a) Technical

(b) Personnel

(c) Economic

(d) Social

(e) Other

VII. Results:

(a) Success - Reasons

(b) Failure - Reasons

(c) Modified - Type and Degree

(d) Cost-Benefit Appreciation

VIII. Transferability:

(a) Pre-requisites

(b) Precautions

(c) Possibilities

VIII. THE ROLE AND RATIONALE FOR EDUCATIONAL AID IN DEVELOPING* COUNTRIES: ECONOMIC AND SOCIAL FACTORS

The hopes entertained at the beginning of the first United Nations Development Decade in 1961 of accelerated economic development and the establishment of a base for self-sustained growth in the poorer regions of Asia, Africa and Latin America, through international co-operation for development have not been realized, and the results have been disappointing. Unless this generation succeeds in taking a long step towards banishing poverty, hunger, disease and ignorance, and enables governments to satisfy the revolution in expectations that has taken place, world peace and security is in jeopardy.

The set back is due in part to the fact that the volume of development assistance expected to be made available by the wealthier nations has not been forthcoming to the extent that this is necessary to accelerate the development process; and, in part to the composition of the assistance given and the manner in which it has been deployed. The United Nations had recommended the rate of transfer of resources from the rich to the poor countries at the minimum level of 1 per cent of the GNP of the former, annually, but this level has not been reached for the rich countries as a whole. Worse still, the rate of flow is even declining. The flow of external resources comprise private and public investment capital on commercial terms; and, what is known as official development assistance on concessional terms, in the form of grants and loans on soft terms. The developing countries are heavily dependent on the adequate flow of the latter component to assist them in building up the infrastructure of their economy on which the investments required are very heavy and the returns long delayed, such as in education and training, health, housing, transport and communications, research, etc. What is causing grave anxiety and frustration in the capitals of the developing countries is that the rate of flow of official development assistance is actually declining. The paradox of ready availability of vast resources for military expenditure in the midst of the tremendous needs of humanity for elementary necessities of life is a sad reflection on our sense of values and priorities.

The crisis in the flow of development assistance led to the appointment by the World Bank in 1968 of a high-level commission of inquiry known as the Commission for International Development under the chairmanship of the distinguished Canadian, the Rt. Hon. Lester B. Pearson. The very opening sentence of their Report ^{1/} echoes the earlier warning sounded by Gunnar Myrdal, many years ago when very few men had the breadth of understanding to view this world as a "One World". I quote:

* Paper presented to the First World Congress of Comparative Education Societies, University of Ottawa, Ottawa, Canada 17-21 August 1970 by Mr. R. K. A. Gardiner, and read on his behalf by Dr. S. Cooppan ECA Secretariat.

^{1/} Partners in Development: Report of the Commission on International Development (15 September 1968, Chairman: Lester B. Pearson). PRAEGER, N.Y. 1969. p.2. Henceforth, in this paper, this will be referred to as the Pearson Report.

"The widening gap between the developed and developing countries has become a central issue of our time"

And a few paragraphs below:

"International development is a great challenge of our age. Our response to it will show whether we understand the implications of inter-dependence or whether we prefer to delude ourselves that the poverty and deprivation of the great majority of mankind can be ignored without tragic consequences for all".

These words raise grave misgivings of an insidious growth of apartheid on a global scale. The parallel drawn is not facetious for the end results are the same; it merits deep reflection, for the basic pattern of thinking in the relations between the developed and developing countries, as identified by the Pearson, Commission, appears to be the same.

Preoccupation with the growing crisis in international development led another statesman, President Lyndon Johnson of the United States to focus attention on the crisis in a sector that is our concern here today, namely education. He was instrumental in convening at Williamsburg, Virginia, USA in October 1967 the International Conference on the World Crisis in Education. The conference underscored the apprehensions of the President in the following words:

"... there is indeed a crisis in education's ability to match performance with expectations. The crisis takes two forms. The first is the world-wide disparity between the hopes of individuals and needs of society, on the one hand, and, on the other, the capabilities of the educational system. The second is an even greater disparity between the developing countries, faced with the cruel restraints of grossly inadequate resources, and the developed countries, which are increasingly preoccupied with their own internal needs".^{2/}

This conference then went on to deplore the fact that at the very time when developing nations are most in need of it external financial aid showed signs of an eclipse.^{3/} It proposed the declaration of an International Education Year to focus the world's attention on the crisis in education and by a common effort to "mobilize energies and inspire world-wide initiatives that would give this subject the priority it deserves".^{4/} The United Nations General Assembly, for its part, convinced of the crucial role of education and training in accelerating economic, social and political development in the poor regions of the world, has declared this year, in which the First World Congress of Comparative Education Societies is meeting, as International Education Year.

^{2/} Coombs, Philip, H: The World Educational Crisis - A Systems Analysis, Oxford University Press, London, 1968, p.175.

^{3/} Ibid, p.182

^{4/} Ibid, p.183

Declining development assistance will weaken and undermine the efforts to implement the fundamental objectives of the United Nations Charter, which is "to create conditions of stability and well-being and to ensure a minimum standard of living consistent with human dignity through economic and social progress and development".^{5/} The UN Preparatory Committee appointed for drafting the strategy of development for the Second United Nations Development Decade pinpoints the major problems of the developing countries as follows:

"...the level of living of countless millions of people in the developing part of the world is still pitifully low. These people are often still undernourished, uneducated, unemployed, and wanting in many other basic amenities of life. While a part of the world lives in great comfort and even affluence, much of the larger part suffers from abject poverty, and in fact the disparity is continuing to widen. This lamentable situation has contributed to the aggravation of world tension". (para.3).

"... Youth everywhere is in ferment, and the 1970s must mark a step forward in securing the well-being and happiness not only of the present generation but also of the generations to come". (para.4).

".... development is the essential path to peace" (para.5).

"....The ultimate objective of development must be to bring about sustained improvements in the well-being of the individual and bestow benefits to all. If undue privileges, extremes of wealth and social injustices persist, then development fails in its essential purpose. This calls for a global development strategy based on joint and concentrated action by developing and developed countries in all spheres of economic and social life: in industry and agriculture, in trade and finance, in employment and education, in health and housing, in science and technology" (para.6).

The Pearson Report, too, identifies the same social and economic elements of poverty and underdevelopment, which constitute a syndrome, as it were. This Report identifies an important social psychological aspect of the situation to which due consideration should be given for it indicates at once the unusual and complex problems faced by governments in the developing countries. To quote:

"The balance of the past has been upset in many ways - by new desires, reduced mortality rates, new technology - the material

^{5/} Draft for An International Development Strategy for the Second United Nations Development Decade. Document prepared by the UN Preparatory Committee for the Second United Nations Development Decade: A/AC.141/L.25/ADD.1, 26 May 1970.

objectives find new expressions as they merge with old and varied cultures. One would not expect the ascendancy of new aspirations to be a smooth or silent process, and it has not been. In most countries development has resulted only through constant struggle between modernizing and traditional elements".^{6/}

To improve such conditions in which more than two-thirds of mankind lives the aforementioned UN Committee has stressed that international co-operation for development must be on a scale commensurate with that of the problem itself; that partial, sporadic and half-hearted gestures, however well-intentioned, will not suffice (para.8). It recognized that primary responsibility for ensuring economic and social progress rests upon the developing countries themselves, but urged that "however great their individual efforts, in order to achieve the desired development goals as expeditiously as they must, they need to be assisted through sufficient financial resources and more favourable economic and commercial policies on the part of the developed countries". (paras. 9 and 10).

The grounds for concern expressed by these independent bodies would be better appreciated if, perhaps, a few aggregate figures are quoted. By 1960, almost \$8 billion, or nearly 1 per cent of the GNP of the high-income, non-Communist nations was flowing into low-income nations; and, additional transfers were made from the Soviet Union and other centrally-planned economies.^{7/} After 1961 the total flow failed to grow as rapidly as the economies of the wealthy nations, though in fact, the absolute level did steadily increase until, by 1968, it had reached a total of \$12.8 billion in public and private resources from the non-Communist countries alone.^{7/} The contribution of the United States, by far the largest supplier of aid and investment flows, had in the mid-1950s reached a level of 2 per cent of her GNP at the height of the Marshall Plan, but in 1960 the percentage was down to 0.75 and gradually slipped further to 0.65 in 1968 of the total flow of resources (though even in 1968 its share was almost half (49.6 per cent) of the total flow^{7/}. France, the second largest supplier of resources to developing countries, still easily exceeds the 1 per cent GNP target, but her flows too, have steadily declined from 2.19 per cent of GNP in 1960 to 1.24 per cent in 1968 (her share of the total flow was 12.0 per cent in 1968). A few countries, however, increased their flow, like West Germany, for example, from 0.88 per cent of GNP in 1960 to 1.24 per cent in 1968 (which was 10.2 per cent of the total). For fifteen developed countries in the OECD group the overall average percentage of GNP flowing to the developing countries declined from 0.89 per cent in 1960 to 0.77 per cent in 1968.^{8/}

^{6/} Op.Cit., page 233.

^{7/} Pearson Report, page 3.

^{8/} See Table 7-2, in the Pearson Report, on page 145, for similar figures on the fifteen countries.

The particular aspect of the situation that has given rise to the greatest concern is the low-level of official development assistance in this total flow. Official development assistance on concessional terms is what is especially needed by the poor countries, and is what may be called "aid" proper, i.e. grants or loans on soft terms. The average flow of official development assistance was only 0.39 per cent of GNP in 1968, and the Pearson Commission recommended that it be raised to 0.70 per cent by 1975,^{9/} if the development targets of the Second Development Decade are to be achieved. The absolute level of official development assistance provided by the same fifteen developed countries in 1968 was estimated at \$6,429 million, and, if the Pearson Commission recommendation of 0.70 per cent of GNP were to have been applied for this year the figure would have read \$11,591 million; and, would read for 1975 at \$16,173 million.^{10/} On the average, the annual rate of official disbursement of assistance would have to be raised to 14.1 per cent to reach the Pearson Commission target level for 1975.^{11/}

At this point it would be reasonable to ask what the developing countries have done to help themselves, and what are the prospects for increasing self-help measures. I shall confine myself mainly to a brief outline of the situation in Africa, which would serve to illustrate the economic and social conditions which necessitate the continuance of development assistance.

Africa is a late starter in development. It is only recently that Africans have begun to regain control of events on their continent, and the political process is still not complete. Before 1950 only three countries were independent (UAR, Ethiopia and Liberia), and most attained their independence from colonial rule between 1955 and 1963. There are today 41 independent Black African states (excluding South Africa), with eleven more territories struggling towards the same goal. The preoccupation of the newly independent States during the first Development Decade was with keeping the State intact and viable against various internal divisive pressures, and so they concentrated on rapidly building up the administrative services of government, vacated by the outgoing expatriate personnel, in order to carry on with the day to day tasks of government. Considering that under colonial rule most Africans had not acquired first hand experience of managing the affairs of a modern state, the transition had taken place remarkably smoothly. The presently developed countries did not have to contend with such a situation when they began modernizing and industrializing their economies. During the Second Development Decade the African countries could be expected to give more attention to the specifics of economic and social development. If development assistance were to fall off at this stage it would, indeed, delay for decades their achievement of conditions for self-sustained growth. It is a point worth remembering that the

9/ Ibid, p.18.

10/ Ibid, Table 7-4 page 150.

11/ Ibid, Table 7-5, page 150.

governmental administrative structure and service which is presently serving the new States with reasonable efficiency, in the circumstances, has itself been made possible through timely official development assistance, especially in the form of technical assistance and intensive training in administration. There is undoubtedly a great deal more to be done in improving performance and in training additional types of high-level managerial and intermediate level personnel. The capacity of the African states to utilize more development capital, more efficiently, will need to be improved by training the appropriate kind of personnel, especially, in project identification and preparation; for undertaking negotiations with more sophisticated foreign investors; and, for co-ordinating foreign assistance with national and multi-national development plans.

Economically the African countries are amongst the poorest in the world as measured by GDP per head. Half of the independent African States are among those with the lowest GDP in the world. By another classificatory system into Least Developed Countries, it is worth noting that of the 21 LDC's in the world 19 are in Africa. In 1967 86 per cent of the African population had an average annual GDP of less than \$160 per head; and, more than half (55 per cent) of the population averaged less than \$80 per head.^{12/} Only Libya, because of its oil income, averaged a GDP of \$1,000 per head. These figures contrast sharply with those of the developed countries like the USA and USSR, and even the middle-level economically advanced countries whose average annual GDP is about \$1,200 per head. The condition of the inhabitants is actually worse because of the inequalities of income distribution, especially as between the urban and rural population, and as between those in wage-employment and those in subsistence farming.

When one looks at the rate of growth of the GDP per head, one is staggered by the time it would take Africa to reach parity with the developed countries. Between 1960 and 1967, the GDP per head grew by less than 2 per cent per annum (which is less than the 2.5 per cent average rate of population increase) in 22 countries; and, more than 3 per cent in eighteen countries. In 19 countries, containing 37 per cent of the population the GDP growth rate per head was actually less than 1 per cent.^{13/} For developing Africa as a whole the rate of growth of GDP per head actually slipped from 2.2 per cent per annum (1960-1965) to only 0.5 per cent (1965-1968).^{14/} At these rates of growth one estimate is that it would take 200 years or so to reach the present levels of the industrialized states, but by then the latter States would have progressed further and the gap would have increased.

There are many economic and social factors which interact and cumulatively tend to slow down the rate of economic growth, and perpetuate the

^{12/} Ibid, page 262.

^{13/} Ibid, page 265.

^{14/} Economic Conditions in Africa in Recent Years. A summary prepared for the 49th Session of ECOSOC by the Economic Commission for Africa. Mimeo - M.70-985, para. 7.

poverty and backwardness of the African region. The major obstacles to rapid development have been identified as follows: 15/

- (i) the general lack of infrastructure (such as, transport and communications, educational and training facilities, housing, health services, institutions for research and development, financial institutions, etc.);
- (ii) the predominance of agricultural activity at a low level of productivity (more than three-quarters of the population lives in the rural areas and is engaged on subsistence farming);
- (iii) general absence of industrial activity;
- (iv) adult illiteracy of about 80 per cent;
- (v) unemployment and underutilization of human resources whilst at the same time there is a critical shortage of trained manpower;
- (vi) small size of local markets (a legacy from the colonial past due to the division of Africa into many small States);
- (vii) excessive dependence upon commodity exports whose prices fluctuate on the world market and cause uncertainty of income;
- (viii) scarcity of capital and low level of domestic savings due to low level of personal incomes (the wage sector offers employment to less than one-fifth of the active labour force);
- (ix) inadequate knowledge of physical resources, which makes rational planning a very difficult exercise;
- (x) general absence of organized development planning and programming, resulting in ad hoc approach to development, which in turn tends to slow down economic growth;
- (xi) a rapidly expanding population.

However, Africa does not yet have a population problem of the dimensions obtaining in Asia. Its present population is estimated at 330 to 350 million, but by the end of the century this figure may rise to more than double that (770 to 860 million), which is more than twice the rate of growth in developed countries. It is the age composition of the population which is the most disturbing feature: more than two-fifths (43 per cent) of the population is under fifteen years of age, compared with a world average of 36 per cent.

15/ See also R.K.A. Gardiner: (i) Poverty, Racism and Human Rights. Address to the World Council of Churches Consultation on Christian Concern for Peace (3-9 April, 1970, Baden, Austria. Mimeo - M70-465; (ii) Developing Africa: Economic Aspects, Trends and Perspectives. Paper presented to the Conference on "Africa in World Affairs: the next thirty years" (December 1969, Makerere University College, Kampala, Uganda) - Mimeo - M69-3062.

The relative "youthfulness" of the population imposes, in the short term, heavy burdens on a low-income country, for this is a large dependant group requiring various economically non-productive services in the way of increasing educational, health and recreational services, besides investment for a high rate of employment creation in anticipation of their entry into the labour market. The developed countries have a more favourable age structure in this regard. Family planning is the eventual balancing measure and many African States have adopted national family planning programmes (e.g. Botswana, Kenya, Ghana, Mauritius, Morocco, Tunisia, the UAR), but this is a long term measure and the economic impact of the population pressure is with Governments today.

The slow growth of the economy has meant a low rate of employment creation, and a steady rise in the volume of unemployment and underemployment, especially in the rural sector. A serious problem confronting African governments is the growing army of educated primary school-leavers for whom there are just not enough jobs, and conditions in the rural areas are not at all attractive to keep most of them there.

Amongst the most serious onerous burdens of some of these States is debt servicing, that is, the payment of interest, and repayment of capital borrowed from abroad, often on hard terms. In some instances, as much as half the export earnings are swallowed in debt servicing, and, so these countries, despite their best efforts, appear to stand still.

The Pearson Commission reports on a significant, if not impressive, record of development achievements in the face of such handicaps. Contrary to widespread belief, the bulk of the investment capital in developing countries is derived from domestic savings. In the 1960s domestic savings accounted for 85 per cent of total investment. Africa raised savings to the extent of an annual average of 13.1 per cent of GNP (1960-1967), and Gross Investment on the average was 16.7 per cent of GNP. During the same period average rate of Savings was 21.7 per cent of GNP, and Gross Investment 21.2 per cent, for the fifteen developed countries in the OECD group.^{16/} The average annual rate of growth in agricultural production for the developing countries was 2.1 per cent (1960-66) (the rate in Africa at 1.4 per cent was very much below the average), as against 1.8 per cent for the industrialized countries.^{17/} The "green" revolution has made a remarkable change in the rate and volume of food production in parts of Asia and Latin America. Manufacturing output has been growing at the average annual rate of 7.3 per cent for all developing countries (Africa, 6.0 per cent), against 5.6 per cent for the industrialized countries.^{18/} Electric energy production averaged an annual rate of growth of 10.5 per cent (1948-1967) in the developing countries (Africa, 11.5 per cent), against 7.7 per cent of the industrialized countries.^{19/} These sectoral rates of growth are

^{16/} Ibid, Table 2-2, page 31.

^{17/} Ibid, Table 2-3, page 32.

^{18/} Ibid, Table 2-6, page 36.

^{19/} Ibid, Table 2-8, page 39.

indicative of the efforts being made by Africa and the other developing countries to accelerate their development, though the performances of some individual countries fall below the average. Measured against the total income of the developing countries, the external resources flowing into them have been a small fraction, amounting to about 2 per cent.^{20/} However, even this fraction has made a very significant contribution to the development noted above, for in some countries it amounted to 10 per cent of their investment, and 20-30 per cent of imports. Generally, the record of performance of the developing countries today are much better than that of the presently advanced countries when they were at the same stage of development.

Yet in spite of development assistance and their own efforts, the developing countries lag very much behind the developed countries. A factor that tends to be overlooked, when comparisons are made, is that in the contemporary world the late comer to development has new problems to face and greater obstacles to overcome than the presently advanced countries had to, at similar stages of development. To take the population 'explosion', for example: this is really the outcome of decreased mortality rates effected through improved health and educational services, which are better today than in the early years of the Industrial Revolution in Europe, and, consequently, the old balance has been upset. New corrective measures like family planning would have to be applied on a wide scale, but the world does not have the experience of applying such measures at the pre-industrial stage of development.

To take another example. The existence of industrially advanced countries with greater productive capacity, tightly organized and preserved markets, and a commitment to economic nationalism in their policies has made it extremely difficult for a new comer on the scene to break through the trade barriers or compete successfully. International trade in the past, when the presently developed countries had begun their modernization and industrialization process, was much more liberalized. On the other hand, the export goods of the mass production economies are more successful in penetrating the markets of the developing countries and change the pattern of consumption, resulting in serious balance of payments problems today. In addition labour standards are higher and trade unions stronger.

Again, take industrial technology. The technology available today is capital-intensive and labour-saving, developed to suit the conditions of the industrially advanced countries. But the developing countries, with their labour surplus and scarcity of capital need labour-intensive and capital-saving technology. The injudicious import and use of the more sophisticated and expensive technology, mainly by foreign investors, has only served to compound the problems of the developing countries.

^{20/} Ibid, page 48.

To take yet one more example. When industrialization in Europe got under way money was cheaper and was borrowed at fixed interest rates of 5 to 6 per cent, and default was not uncommon. Now almost all long-term private capital is very much dearer, taking the form of direct equity at 15 to 25 per cent pre-local tax, and 10 to 15 per cent post-local tax; and default on loans, whether private or official, is hardly ever allowed to occur. Furthermore, remittances of profits, interest and dividends aggravate the balance of payments problems of African countries, partly because of their height and partly because of inadequate re-investment.^{21/}

From this brief account of the serious impediments to the accelerated development of Africa and the other developing regions, it is evident how important even marginal assistance could be. Unless external resources continue to flow at the rate of, at least, 1 per cent of the GNP of the industrially-advanced and richer countries the future is bleak for them; and, the 6 per cent per annum overall growth rate recommended for the 1970s is not likely to be reached. The reasons for the stagnation in development assistance have been reported upon by the Pearson Commission, and, it is not necessary to detail them again, except to mention some, as we are concerned with aid at this Congress. The Commission reported that in the United States, and in some other donor countries they had encountered "a spirit of disenchantment" in aid giving and that often these attitudes have been due to misconceptions and unrealistic expectations of 'instant development'," when it should have been known that development was a long-term process.^{22/} They also report on strong criticism on waste in the use of aid in the developing countries, and complaints that aid activities lead to entanglement in political conflict and military hostilities in which recipient countries have been engaged.^{23/} The Report, however, places much responsibility for this state of affairs on the donor countries themselves and was critical of their underlying motivation and aid policies. A good deal of bilateral aid was dispensed to gain political favours, strategic advantages, or to promote exports from the donor; and, much foreign assistance went to the maintenance of large armed forces. In none of these cases, was the promotion of long-term development a dominant objective of the assistance given.^{23/} Some falling off in the rate of flow of development assistance was, however, due to priority given to domestic needs of the donor countries. Equally there have been misconceptions in the developing countries, who also tended to expect too much too soon from aid which was only a supplement to the national development effort.^{24/}

In Africa, today, it is realized that development must be effected by Africans themselves, and that no foreign assistance can be a substitute for determined, self-reliant effort. However, they do need marginal assistance on reasonable terms - not charity - from the international community of which they are a part, so that the time span of development may be shortened

^{21/} These and other arguments have been more fully developed in an unpublished study, "Aid to Africa" by Paul Streeten for the Economic Commission for Africa, February 1970.

^{22/} Pearson Report, page 4.

^{23/} Ibid, page 4.

^{24/} Ibid, pages 5-6.

for them. There is ample historical evidence that external development assistance, judiciously deployed and efficiently used, can make a significant impact on development, as for example, in Taiwan, the Philippines, Korea, Pakistan, Greece and Israel.^{25/} The need for assistance is not the unique experience of developing countries. It was Marshall Aid which put war devastated Europe on its feet.

The Pearson Commission cautions against a narrow, quantitative, financial evaluation of the contribution of aid to the process of development. Since the size of official development assistance is marginal to the country's own volume of investment in development, its principal role has been that of a catalyst. For example, in Africa there are unmined minerals, abundance of unskilled labour, and untapped energy sources, but the Africans themselves, at this stage, are often not in a position to mobilize their resources, combine and transform them into the goods and services of value to themselves and which have a demand on the world market. The marginal capital and technical assistance from external sources go a long way towards transforming potential to actuality.^{26/}

The most lasting and strategic contribution that foreign development assistance could make to African economic, social and political development is in the sphere of education and training. It is only through the development of human knowledge, skills and attitudes that people are enabled to become self-reliant in managing their affairs and to attain higher levels of living. Convinced of the leverage that education and training have exerted in the modernization of agriculture and industrialization, African Governments invest a considerable proportion of their resources in this sector. The percentage of national income spent on education ranged in 1965 from 1.6 per cent to 8.1 per cent, the average being 4.2 per cent.^{27/} The percentage of the budget allocated to education ranged from 6.9 per cent to 26.4 per cent in the same year, the average being 15.6 per cent.^{27/} These figures compare favourably with those of developed countries.^{28/} Yet in spite of these efforts the school age population is increasing owing to population growth, and Africa is the only developing region where more than half the children of school-age do not attend school. School leavers

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- ^{25/} (i) Pearson Report, pages 48-52.
(ii) Economist, March 11, 1967, page 908.
(iii) R.K.A. Gardiner, International Economic Development: The Significance of Aid to Africa. Address to the International Press Institute, 3 June 1968, Nairobi.

^{26/} See also Pearson Report, p.50.

^{27/} UNESCO-OAU/CESTA/Ref.1. Paper submitted to UNESCO/OAU Conference on Education and Scientific and Technical Training in Relation to Development in Africa, (Nairobi, 1968).

^{28/} Coombs, Philip H: op.cit., Appendix 18, page 201.

(with a general education) are increasing faster than jobs, whilst at the same time there is a serious shortage of middle-level skills, especially technical and sub-professional. Yet the enrolment in secondary vocational training is barely 10 per cent of the total secondary enrolment, indicating the dysfunctional features in the system. The educational system is unable to hold its pupils long enough for them to attain even literacy for about half drop out by the end of the second grade, and so go to add to the backlog of 80 per cent adult illiteracy. In the second and third level education, enrolment ratios in Africa are low compared with other developing regions,^{29/} reflecting Africa's economic situation.

African countries are approaching the budgetary ceiling to educational expansion and attention must be directed to the quality of education, especially in respect of the relevance of structure and content for meeting development needs and priorities; and, in respect of the cost effectiveness of the system. In order to increase productivity in the short run, functional literacy for the actively employed adult population and vocational training for upgrading skills would seem to demand higher priority than the expansion of primary education, but this would pose a political dilemma. Educational innovations are necessary to overcome the poor qualifications, as well as the shortage of teachers. The school-leavers are a problem, and special forms of vocational training are required to fit them for the available kinds of work, which are mainly in the rural areas. These are tasks which require the continuance of external development assistance at an enhanced level. Even though almost 50 per cent of official development assistance flows towards education and training, in view of the low level (0.39 per cent) of official development assistance for all purposes, the volume available to education and training is inadequate in relation to the needs and problems in this crucial sector of development. The situation calls for a careful study of needs and priorities in education in relation to the pressing demands for various kinds of skills and for reducing unemployment. It is essential that the marginal assistance available from external sources should be utilized to produce the maximum impact on the educational system.^{30/} It is I believe, the aim of this Congress to undertake a study of this kind.

^{29/} Enrolment as percentage of total enrolment in 1966/67:

	<u>Africa</u> %	<u>Asia</u> %	<u>Latin America</u> %
Second-level	12.6	20.3	16.6
Third level	1.1	2.7	2.2

Source: OECD Development Assistance Committee. Note by Secretariat.
DAC (69) 18.

^{30/} For a seminal study in this area see: Ladislav CERYCH: Problems of Aid to Education in Developing Countries. Praeger, New York, 1965. The OECD Development Assistance Committee undertook a more recent study in 1969 on educational assistance to Africa.

The poverty of the developing countries is a challenge not only to the conscience but also to the good sense of the international community to increase the flow of development assistance, especially to education and training in Africa. In answer to the question, Why aid? I cannot do better than conclude with the most cogent argument employed by the Pearson Commission:

"People today are increasingly aware of a world, as well as a national, community... This concept of world community is itself a major reason for international co-operation for development. It is an assertion of faith in the future, as well as of the conviction of the need to act now".31/

IX. REPORT OF THE EXPERT GROUP MEETING ON EDUCATION*
AND TRAINING FOR DEVELOPMENT IN AFRICA

CONCLUSIONS AND RECOMMENDATIONS

Introductory discussion on relating African education
to economic and social development needs and priorities

The topic was introduced by a UNESCO representative who reviewed briefly the past ten years of educational development in Africa and drew attention to the change that had taken place in the concept of development during the period, which now stressed the point that education must be viewed together with social and economic development. The relevance of education to development is not to be underestimated. Some of the difficulties and challenges facing education in the 1970s were mentioned and certain proposals were made for making education more relevant and efficient.

The participants were of the view that in the past ten years despite the great efforts made and achievements realized in increased enrolment and expenditure, education in Africa for varied reasons did not meet adequately the needs of social and economic development.

The group urged strongly that in the 1970s African education must be development-oriented and that educational institutions and programmes should be more closely related:

- (a) to increase the productivity of the workers and peasants;
- (b) to meet the employment needs of the population, especially of the increasing number of youth;
- (c) to raise the level of economic, social and political development of the people, particularly, that of the rural population.

To this end the group recommended that:

* The main objective of convening the meeting under the aegis of the United Nations Economic Commission for Africa (Addis Ababa, 7-11 December 1970) was to focus the attention of member States upon the necessity of shaping national systems of education and training to serve as instruments of economic and social development. It was hoped that the experts and consultants would assist in identifying major structural, programme and content deficiencies and gaps in the systems of education and training in Africa for promoting rural development and industrialization; in reviewing the adequacy of training facilities to meet the economic and social needs and priorities of Africa; in suggesting guidelines for educational planners and administrators, and in recommending priority areas for external assistance to education in the 1970s. Only the conclusions and recommendations of the expert group are reproduced here. The complete report is available in document E/CN.14/515 - E/CN.14/WP. 6/36.

Educational Planning

- (i) With a view to integrating educational plans with overall national development plans efforts be intensified to establish planning units in the Ministries of Education, where this has not been done, and to train educational planning personnel.

Modern Management Techniques

- (ii) New management methods should be introduced in the administration of educational systems, programmes and projects to improve the efficiency of planning, procurement and control, and to facilitate the development of innovative policies and institutions; and, in addition appropriate training courses in modern management techniques be provided in university faculties of education and teacher training institutes.

New Educational Strategies

- (iii) Efforts be made to develop new strategies at sub-national, national and regional levels, and educational means be devised to meet the specific needs of different age and functional groups in the population instead of merely expanding the existing educational institutions.

Co-ordination

- (iv) Greater co-ordination be effected among the several agencies, public and private, responsible for education and training.

Associating Educators in Decision-making Process

- (v) Educators should be associated with any political decisions made concerning their area of responsibility and activity to ensure proper planning and effective implementation.

Structure and procedures of Ministries

- (vi) A review of the structure and procedures of Ministries of Education be made and changes effected so as to facilitate the rapid execution of educational and development plans.

Relevance of Educational Objectives, Content, Programmes

- (vii) The objectives, content and programmes of education be reviewed and reformulated so as to make them more relevant to the economic, social and political needs of changing Africa.

Development Studies

- (viii) The development process be made a subject of study as well as integrated in the curricula of secondary, teacher-training and university institutions so that their graduates may develop the right attitudes and commitment to development; and, in addition, to reinforce those attitudes by involving youth actively in development tasks through national service schemes.

Use of Educational Technology

- (ix) Educational methodology take into account and make appropriate use of the technological innovations now becoming available to increase its effectiveness and productivity, as in industry and agriculture.

Research in Development Education

- (x) Ministries of Education and universities undertake systematic research and experimental projects to determine the kinds of experience, skills and attitudes at the different levels of education which contribute to economic and social development.

Technical Assistance

- (xi) The group called upon the ECA, UNESCO, ILO, FAO and other international organizations to render technical assistance to African Governments and institutions to implement the above recommendations.

The design of education and training for rural development

For the discussion of this major topic the group had before it two working documents (E/CN.14/WP.6/31 and ECA/MPTR-14/1970) and a number of background papers. The discussions on the various topics were introduced by members of the ECA, UNESCO, FAO AND ILO secretariats.

The group was of the view that a sound educational policy and the design of a system of education and training that would be relevant and contribute to the economic and social development of the rural areas must be founded upon a thorough understanding of the economic and social conditions prevailing in these areas, and be based upon a clearly stated set of national economic and social objectives. Too often educational planning and action were impeded and made irrelevant to the environment and needs of the population by the lack of a clear statement of educational objectives and priorities derived from these overall national objectives.

The group took note that African economies were in general dual economies, comprising a modern and a traditional subsistence sector. The majority of the African population lived in the rural subsistence sector, which accounted for their poverty and low standards of living. It took

note also that the strategy of accelerated economic development in Africa called for the transformation and modernization of the subsistence economy. This had for its goal the development of a diversified economic structure and pattern of activity in which modernized agriculture would be supplemented by appropriate industrial and commercial undertakings, and related service industries. A comprehensive rural development policy will give due weight and emphasis to employment objectives.

The group was convinced that for education and training to make an effective contribution to the development process other concomitant measures would need to be taken by government and other agencies to build up the rural infrastructure and to provide the necessary incentives to mobilize the efforts of the rural population. It, therefore, endorsed the integrated approach to rural development in which the education and training of the rural people in the appropriate skills, knowledge and attitude constituted but one component in the development strategy. In this connexion it observed that more vigorous steps need to be taken to effect greater co-ordination and harmonization of administrative structures and procedures of the various government ministries and agencies concerned with rural development, including the Ministry of Education.

To this end the group recommended that:

ECA, UNESCO, ILO and other specialized agencies continue and intensify their assistance to governments to establish modern administrative structures and procedures which would facilitate development, and to promote training programmes in modern management techniques and development administration.

The group then considered the existing pattern of education and the adequacy of the facilities for the rural population. There was general agreement that there were in the system serious structural deficiencies and imbalances, that the content was not relevant and related to the needs of development, and that the forms of education were in need of greater imagination and innovation to meet the needs of the different age and functional groups.

As a guideline to educational policy-makers and educational planners the group affirmed that the broad aims of educational policy were the same everywhere in developing Africa, without distinction between urban and rural populations, which is that education, conceived in its widest connotation, should enable men, women and youths to acquire those skills, knowledge and attitudes, through exposure to formal and non-formal learning situations, which would enable them, or improve their capabilities, to perform the numerous tasks required to be done to bring about the transformation and modernization of the economy and the related social institutions.

Derived from this statement of policy, the group agreed upon the following set of educational and training objectives which it believed would assist in promoting rural development:

- (i) Modernization of the rural economy and rural social institutions through raising the general level of intellectual and cultural attainment of the rural population;
- (ii) Imparting basic communications skills and knowledge of numbers, which are essential for participation in modern economic and governmental operations;
- (iii). Imparting a general education in the development process so as to provide knowledge and understanding of the rural environment - its resources, limitations and opportunities; to generate a ferment in the mind to want to change the conditions of rural poverty and stagnation; and, to create receptivity to innovations in organization, technology, modes of labour and social relationships;
- (iv) Inculcating appreciation of the role of agriculture and agricultural production in economic development;
- (v) Equipping men and women with improved manual and technical skills, through pre-vocational, vocational and on-the-job training schemes, to engage more profitably in farming operations, rural industries and handicrafts;
- (vi) Imparting knowledge of human biology and the basic laws of health, nutrition, and hygiene - personal and community;
- (vii) Imparting a knowledge of science and scientific methods, and developing the habit of scientific thinking in coping with natural and social phenomena;
- (viii) To impart knowledge and skills to women on household management and child care; and,
- (ix) To impart knowledge of family planning to adults.

The group was particularly concerned to emphasize that whilst the economic and social syndrome associated with a subsistence economy required special educational measures and a differentiated approach in respect of the content and forms of education, it should constantly be borne in mind that the overall national social objective of African Governments is to equalize educational and training opportunities for all sectors of the national population, and, in so far as it was possible to do so through the means of education and training, to equalize employment opportunities also.

The group then considered the structure of education compatible with the achievement of the aforementioned educational objectives. It was of the view that since the stages of educational development, traditions and needs of educational organization varied from country to country, it was not possible to recommend any general structural pattern.

As a guideline for structural modification of the system of educational facilities, programmes and courses the group recommended the following broad principles:

- (i) The scope of the educational services should be comprehensive in that it should provide for all ages and functional groups in the population, and, therefore, formal education should be available from the primary to the tertiary levels; and non-formal, out-of-school educational opportunities must also be made available;
- (ii) The programmes and courses offered should be diversified to accord with the aptitudes and growing interests and proficiencies of individuals; and should be oriented to the environment in which education is given;
- (iii) The entrance or admission arrangements should be flexible and allow for multiple entry points at different stages in the individual's career, and permit transfer from one type or field of theoretical or applied study or training to another, so that opportunity is provided for the realization of the objective of life-long education which is a sure way of ensuring that education serves the purpose of economic and social development.

Systems Analysis

The group recommended further that:

As early as possible, a systems analysis be made of national educational systems to identify the structural deficiencies and gaps in the linkages, and to take steps to modify the system, as appropriate to national needs, requirements and resources. In this connexion the group called upon ECA, UNESCO, ILO, FAO and other international organizations to give all assistance to African countries.

On the question of duration of the cycles of formal education the group felt that these should be carefully reviewed and reduced or extended as deemed necessary, bearing in mind that what is more important is the content of education and the methodology of teaching. It, however, wished to stress the adoption of cycles of duration at the primary and secondary levels which are in keeping with the realities of the African educational situation, resource availability and stage of development. Whereas the usual cycles of education may be meaningful in formal educational institutions, the same considerations would not apply to out-of-school education for children of mature age, youths and adults. The group was of the view that out-of-school education offered opportunities for educational innovations and accelerated instruction, employing the new media of education.

Continuous Curriculum Appraisal

In regard to the content of education, the group was of the view that to make it relevant to development pre-vocational education should be provided from the upper primary classes to the junior secondary classes. In the upper secondary level training in a wide spectrum of vocational skills should be provided to enable the school-leaver to receive further on-the-job training and to be prepared to enter upon the employment opportunities that present themselves. In addition, the group particularly stressed the introduction of science subjects and mathematics in the curricula of rural schools from the earliest levels, and to up-grade the teaching in these subjects.

To this end the group recommended that:

Permanent national committees be set up to make a continuous study and appraisal of the curricula and syllabuses of education and to bring them into line with the knowledge and skills requirements for the modernization of agriculture, related processing industries, and of small-scale industries.

In the light of the need for organizing and providing diversified curricula and training opportunities, the group considered what would be a suitable form of organization of schools and educational centres for the rural areas. It was of the view that, at the secondary level, the comprehensive or multilateral school structure was suitable for formal education and training activities; and, that they should be located in places which are accessible to students from the rural areas. With regard to relating the school to the community, the group believed that the community school type of organization for the young and the adult population offered great possibilities for diversified and innovative educational activity.

Tertiary education and training facilities

The group considered tertiary level education and training for the rural population and recommended the establishment of educational and training facilities at the tertiary level providing agricultural as well as engineering programmes, and that careful consideration be given to maximizing the use of available resources by also establishing secondary teacher-training programmes within the organizational framework of these institutions.

Teacher-training

The group noted with appreciation the UNESCO projects established for training rural teachers. It discussed at length the role of the teachers as agents of change or animateurs, and their preparation. In view of the great scarcity of the right quality of teachers to spearhead the changes envisaged for the rural areas, the group recommended strongly that:

The highest priority be given to the training of teachers and teacher educators for rural schools, and that in their

preparation a period of national service be incorporated. To this end the group called upon UNESCO, FAO and ILO to render intensified assistance to the African Governments to achieve a break-through in this field of scarce educational manpower.

Training of Farmers

With regard to the adult sector of the population currently engaged in farming activities, the group noted with appreciation the training being provided by UNESCO, FAO and ILO through farmer training centres and the experimental functional literacy projects to increase the productivity of the farmers. The group recommended that:

Additional resources be allocated to these activities to extend their sphere of influence in the rural community and to undertake the necessary systematic research to improve the effectiveness of those programmes.

Vocational Guidance Services

The group stressed that in order to relate the flow of students into areas of study and training related to urgent manpower requirements for rural development, it was necessary to prepare information on employment opportunities for school-leavers and to train vocational guidance counsellors. To this end the group recommended that:

- (i) Member States give effective support to the development of vocational guidance services in all national secondary, post-secondary and training institutions;
- (ii) The international organizations, in particular UNESCO and ILO, be approached to lend support to the development of these programmes, and to consider the feasibility of initiating national or multinational training workshops, and specialist training courses for educational and vocational guidance officers in Africa.

University Centres for Educational Planning and Development

In concluding its observations on this major topic on the agenda, the group called attention to the importance of initiating detailed socio-economic surveys at the local level with a view to learning what the economic growth prospects were in the rural areas so that the education and training provided could be more closely related to employment possibilities. A major constraint to making education related to employment and production was the absence of such economic information and social profiles of job requirements. In addition, new types of educational research and experimentation would need to be undertaken to learn the ways in which education and training programmes can in fact contribute to economic development.

To this end the group recommended strongly that:

- (i) Centres for studies in educational planning and development be established within the universities, and that regular courses in this field be introduced in undergraduate and post-graduate programmes;
- (ii) Economic analysis and intelligence sub-units be set up within Ministries of Education as part of the educational planning units;
- (iii) UNESCO be approached to assist the African Governments and universities in this regard.

The design of education and training for industrialization

In considering this major topic the group had before it two working documents (E/CN.14/WP.6/33 and ECA/MPTR-14/1970) and a background paper. In addition, the sub-topics under this agenda item were introduced orally by representatives of ECA, UNESCO, ILO and a Consultant.

The group took note of the high priority given to industrialization programmes in the development plans of the African countries. The task of educational and training systems was viewed as assisting to accelerate the industrialization process of the continent. It was noted that industrialization and industry-related services called for a whole range of key skilled personnel, adequate in number and quality. There was an acute shortage of African scientists, engineers and skilled manpower to fill senior industrial posts and the shortage was likely to continue for the foreseeable future. A survey of the supply and demand for such high-level personnel indicated that educational institutions in some countries appeared to be overproducing graduates in arts-based disciplines whilst at the same time they were experiencing a shortage of scientific and technical manpower. Even for middle-level manpower for industrialization some countries were still heavily dependent upon expatriate recruitment.

In considering the magnitude of the manpower problems posed for industrial development during the next decade, the group felt that realistic industrial targets and time-tables should be set. The group noted the need for setting into motion development in several fields and the conflict that arose in setting priorities, but this had to be resolved for education and training to be geared to economic and social development. It was pointed out that highly specialized personnel depended on each other for the supply of skills required for the implementation of development projects. African countries, thus, had to produce the supply of a wide range of manpower cadres required for their development.

The group was of the view that the absence of specialized training facilities and programmes was a major constraint to the supply of essential manpower. In this regard, it was essential for universities and technical institutes to forge links with industries, to study their manpower requirements

and to design appropriate training programmes. Similarly, adjustments and innovations in school programmes would be required. It was important to distinguish short-term requirements which could be met by short-term arrangements from longer-term requirements that would require fundamental changes in the educational system. Short-term requirements might be met by, for instance, the use of the facilities of neighbouring countries, and provision of intensive short-term training programmes or through the use of technical assistance personnel under bilateral arrangements. On the other hand, long-term requirements may call for a complete re-orientation of educational programmes and the development of appropriate knowledge, skills and attitudes at primary, secondary and university levels. In many instances, external assistance was still needed to finance the necessary training, and to develop sound selection and guidance procedures that would ensure the efficient use of scarce personnel. The group urged African countries to allocate greater resources to the development of industrial skilled manpower.

The group considered the role of universities in human resources development. It was noted that African universities had undergone great changes during the last decade. These were no longer the colonial institutions that they used to be. Under African management they had changed their philosophies in favour of commitment to their countries and involvement in national development. Some had instituted national service programmes as a means of sensitizing their students to the tasks of development. Curricula were constantly reviewed, changed and evaluated. Extension programmes related to the needs of adults in work had been expanded. Correspondence courses for those who could not easily be reached by the university had been instituted. The need to relate academic excellence and attainment to the practical problems of development and work was finding increasing recognition among universities. The group agreed that it was not correct to speak of these institutions as if nothing had happened in the last ten years. In fulfilling their role, however, African universities might benefit from a greater degree of co-operation in the use of highly specialized and expensive facilities for the training of high-level manpower and might also benefit from the exchange of each others experience. In this regard the role of the Association of African Universities in bringing universities together was commended. It was felt that increased support should be given to the activities of this Association by universities and governments, especially in promoting sub-regional and regional co-operation.

The group was aware that there were serious problems to matching exactly the supply of and demand for skilled manpower. Even when training facilities were available and vocational guidance offered, students and parents did not always make the choices of career expected of them by manpower planning. There was the inevitable time lag between planning and actual output of the required manpower as the lead time in education was long. Furthermore, it was difficult to forecast exact future manpower requirements. Industrialists found difficulty in forecasting their requirements in exact terms or in providing a precise description of the content of industrial jobs. The qualitative aspects of these jobs were subject to change and could not be forecast for long periods ahead. Until there was systematic job analysis, and better projections of the requirements of industry, manpower planning could not become an exact science.

In spite of the problems associated with manpower and educational planning, the group felt the scarcity of resources in Africa made it imperative that planning should continue to be attempted and that concepts and techniques of planning be developed which will render planning more effective in African conditions. Equally pressing was the need to develop vocational and guidance techniques that would ensure the flow of students in accordance with the broad targets of manpower and education planning. The need for research studies in these areas stressed.

Accordingly the group recommended that:

- (i) Governments should allocate adequate resources for the development of studies and research in manpower and educational planning;
- (ii) All countries should give consideration to the relationship existing between the training of professional manpower and the training of supporting cadres with a view to ensuring an adequate supply of sub-professionals, technicians and skilled craftsmen.

Science and Technology: Policies, Programme Priorities and Problems of Implementation

The group found that whilst science and technology were already playing an important role in the daily life of Africans, regrettably, however, most governments had not yet delineated policies for scientific and technological development and had not yet given sufficient attention to the full utilization of the abundance of natural resources. Many scientific items which could be produced locally were imported. Many industries were run as single-line industries although subsidiary industries could have arisen out of the processing of the by-products of these industries. It was noted with appreciation that UNESCO, realizing the need for scientific and technological research, had introduced a number of pilot projects in Africa aimed at the application of scientific research to national development plans. These pilot projects had revealed deficiencies in certain categories of skilled scientific manpower in African countries. The situation called for the establishment of special governmental science units concerned with the formulation and implementation of policies for scientific and technological development - such units could be closely allied to manpower planning units of the Ministries responsible for national education.

Experience with existing projects had, however, suggested certain weaknesses in the conception and execution of projects, such as:

- (i) Some projects tended to be over-ambitious and unrealistic;
- (ii) There was lack of co-ordination of projects sponsored by various government departments;

- (iii) Many projects had no relevance to the overall national plan;
- (iv) There was lack of evaluation and assessment mechanisms for many projects;
- (v) There seemed to be bureaucratic and red-tape hindrances to the implementation of projects, including delays in release of funds;
- (vi) Many projects did not receive proper direct supervision because they were assigned to senior officers already overburdened with other pressing work. This problem could be solved by assigning a qualified full time Director to each project.
- (vii) Some projects were inadequately provided for in terms of supporting staff, physical facilities, transportation and the necessary publicity of the projects.

The group however, felt that it was sometimes difficult or undesirable to provide separate officers and directors for each of the projects in the process of implementation. A country or even a single Ministry usually had several projects of varying size in hand. It would mitigate against the interests of co-ordination and efficiency if each project, irrespective of size, were assigned a separate Director. Nevertheless, within these broad considerations, countries had to give careful attention to the implementation of projects if they were to achieve the maximum impact of resources spent on those projects. In the matter of the long-term development of science and technology, the group strongly supported the formulation of comprehensive and detailed policies by all governments; and, the setting up of science units charged with the formulation and implementation of science policies.

Accordingly the group recommended that:

- (i) In view of the importance of formulating and implementing long-term policies in science and technology education should be given adequate consideration for its role in the establishment of effective science policy.
- (ii) Careful attention should be given to the efficient implementation of science projects so as to maximize their effect and general impact on development.
- (iii) Efforts to give greater emphasis to science and technology in school curricula should continue and adequate resources should be found for the purpose.

The Group accepted the view that the difference between developed and developing countries lay less in the availability of raw materials than in the capabilities of those countries to apply science and technology to their development. This difference could not be removed until African countries

introduced the elements of science and technology into the early stages of education. There was need to expose primary school children to industrial and technical concepts and to encourage them to develop proper attitudes. Those who had aptitudes for science and technology should then be encouraged to develop further in their studies. Unhappily, however, these goals could not be achieved without competent teachers in science and technology.

The group drew attention to the bottleneck created by the absence of teachers of science and technology in schools. In some instances, governments and educational institutions had agreed upon policies that would result in the allocation of more school and university places to science and technological students. Yet, students adequately prepared in the sciences had not been forthcoming in sufficient numbers. In consequence, few students were available for training as teachers of science and technology. The group urged governments and donor agencies to continue to give attention to the resolution of this vicious circle.

The group stressed the need for strengthening science and technology teaching in primary and secondary schools. Only if this were done would a firm foundation be laid for vocational training in these fields. Not only were there problems in teacher supply, but also in the design and development of appropriate curricula, of teaching materials, and of the supply of adequate equipment. These problems were already well known and receiving the attention of many countries and donor agencies. Accordingly the group recommended that:

Efforts should continue and adequate resources set aside for the thorough revision of school curricula so as to bring it into line with the developments taking place in modern science and technology.

The group then discussed various aspects of setting up training facilities and a programme for development of industrial skills. It was noted that a country considering setting up training programmes normally established a vocational training centre, as a first step. Such a centre could provide initial training for the common trades of building, engineering and electrical work. Simultaneous with the setting up of the centre, it was often necessary to establish or improve apprenticeship training schemes in collaboration with industry. Later, it was important to make a comprehensive survey of manpower requirements and employment projections for five to ten years ahead before mounting additional training projects. Possibilities of training-within-industry for those already in employment should be explored. These could take the form of institutional courses combined with on-the-job training. Legislation would probably be necessary to define obligations under the various schemes of training or to secure the co-operation of industry. Other matters requiring attention would include the training of vocational instructors, the setting up of a trade testing and certification centre, accelerated training programmes for special projects, the training of supervisory staff, selection procedures and aptitude testing, vocational guidance, the training of the handicapped, and special training for girls. All these requirements placed a heavy burden on those planning vocational training but were necessary elements in any comprehensive scheme. Advantage

should be taken of recent advances in vocational training such as module systems of instruction, training manuals and in-plant training.

The group agreed that vocational training of young people and those already in employment should be given the highest priority possible. There was always a danger of countries concentrating on the training of high-level manpower without due regard to the training of supporting staff. For instance, the efficient use of professional engineers would probably require the support of technicians in the ratio of 1:5. There was need to give the training of skilled craftsmen and technicians greater emphasis than now. Traditional patterns of training through professional institutions gravitating around the university had sometimes led to ineffectiveness and wastage. Sometimes graduates left university institutions without adequate practical training to make them leaders in industry. In many countries there was a lack of opportunities for giving student engineers the necessary industrial experience before graduation. In these circumstances, it was important to involve the available large-scale employers and industrial firms in the training of local technical manpower. Possibilities of industrial experience in neighbouring or friendly countries abroad should be explored. Generally, however, it was important to find new ways of improving the effectiveness of institutions in the training of professional and skilled manpower.

Consideration was given to ways and means by which technological faculties and technical institutes could ensure an adequate supply of workers with a good basis of scientific knowledge and experience as well as a capacity for continued learning. It was felt that this goal could not be achieved unless the needs of technical staff and training facilities were given first priority in industrialization schemes. The following were mentioned as ways by which technological institutes could increase their effectiveness and at the same time keep abreast of developments in their fields:

- (i) To give on-the-job training to students during vacations (or at some other suitable time);
- (ii) To give encouragement to the exchange of teaching technical staff in African countries;
- (iii) To maintain close co-operation between industries, universities and technical institutions in the preparation of courses, the renovation of curricula and improvement of training methods;
- (iv) To give teaching staff study leave in developed countries so as to enable them to keep in touch with the advance of knowledge and techniques;
- (v) To provide research equipment in engineering faculties;
- (vi) To encourage the teaching staff to keep in contact with industry through consultancies and other forms of liaison which would help them to keep up with engineering practice.

Accordingly, the group recommended that:

- (i) African universities and technical institutes should continue their efforts to produce high-level manpower, to spearhead development and research in development problems. Possibilities of regional and continental co-operation in the use of specialized and expensive facilities should continue to be explored and the efforts of the Association of African Universities should be given every support. Where no other facilities are available, universities should also assist in developing middle-level manpower.
- (ii) Ministries and technological institutes should co-operate with industry in ensuring adequate industrial experience for students before and after graduation. The possibilities of giving students industrial experience in neighbouring countries or abroad should be explored, and other ways of increasing the effectiveness of their practical training should be encouraged.
- (iii) The needs of technical staff and training facilities should be given high priority in any scheme for industrialization.
- (iv) UNESCO, in close collaboration with ECA, should commission appropriate African Institutes of Education or similar university departments to undertake an evaluation of significant development-oriented educational innovations and successful experiments, with special regard to changes in institutional structure, administration, content and training methods. The sponsors of the study should endeavour to disseminate the findings to all African university institutions for their information and guidance. Suggestions may also be made as to possible ways of promoting the above recommendation, and of promoting co-ordination and co-operation between African universities generally during the 1970s and after.

Training Facilities and Programmes for related Commercial, Accountancy and Secretarial Skills

The group discussion of this topic emphasized the role of commercial education in national development. Often the status of commercial education had suffered because of an inadequate appreciation of its nature and potentiality. Graduates of commercial education programmes had to be persons of high quality, able to satisfy local job demands as well as to meet international standards. In this context commercial education had a dual role to play: that of giving a student the occupational skills required for the job as well as the encouragement of the growth and development of the student as an individual. In fulfilment of this latter role, commercial education could itself be the basis of further study or training for other careers. It was noted that during the early stages of development, private commercial schools tended to dominate the provision of commercial education. This had given rise to several problems, including the lack

of trained teachers in these institutions, the admission of less gifted students so long as they could pay the necessary fees, and the continuation of low standards of performance. Little was done about the general education of students or the correction of their attitudes as they developed. Commercial and secretarial education was held in the low esteem and inadequately rewarded. Even when public systems of education accepted responsibility for commercial education their products enjoyed only a low status.

In an effort to improve commercial and secretarial education, the group was of the view that African countries should consider the following measures:

- (i) Secretaries should be adequately educated and trained through formal systems of education.
- (ii) Further on-the-job training should be encouraged for secretaries and clerks already in service.
- (iii) The provision of commercial education at primary and secondary school levels should be investigated and formalized.
- (iv) Programmes for the training of commercial teachers and degree programmes should be instituted at university.
- (v) Commercial and secretarial education programmes should aim at a versatile product that could go on to higher or other forms of employment. However, care should be taken to ensure programmes continue to reflect the changing needs of industry.
- (vi) Certification procedures should be worked out.
- (vii) Commercial and secretarial personnel should be encouraged to form professional associations to give them a sense of identity and to encourage productivity.
- (viii) Programmes of in-service education for existing commerce teachers were necessary.
- (ix) In the education of secretaries everything possible should be done to encourage secretaries to retain time-honoured African values, such as the sense of co-operation and brotherhood rather than one of competition and the understanding of non-verbal communication.

The group recognized that there were problems in the improvement of commercial education, such as, the continuing lack of qualified teaching staff, lack of suitable equipment, low-levels of admission to courses, difficulties in fixing the right duration of courses, the integration of commercial courses within the academic programmes of schools and universities, and the streamlining of certification procedures. However, it was felt that these problems were not beyond solution, and the possibilities of securing external assistance were noted.

The group discussed at length the important role which men of commerce and office secretaries could play in the development of African nations. It was agreed that there was need for improving the training programmes of such personnel and for a review of school and university curricula so as to give greater prominence to the studies of the business world. Accordingly, the group recommended that:

School, technical institute and university programmes should give greater and closer attention to the education and training of manpower destined for commercial, business and office work.

Management and leadership training programmes with special reference to industrial entrepreneurship

The group endorsed the view that industrialization and agricultural development programmes in Africa could not get under way more rapidly for want of managerial, executive and leadership cadres, and that this constraint upon development should be resolved urgently. It noted with appreciation the management and training centre projects established by ILO in Ethiopia, Kenya, Tanzania and Uganda to meet this demand but it was felt that it was too early as yet to evaluate what impact these projects would have on industrial development, though the preliminary reports received were encouraging. The group also endorsed the view that for economic development it was equally important to train Africans in business management, and in the special techniques of trade promotion and marketing, and that centres for the promotion of such training should be established. It noted with appreciation that an African Trade Centre, with similar functions at the regional level, has been established within the organizational framework of the United Nations Economic Commission for Africa. It was agreed that the universities had a vital and crucial role to play in this field of training, especially through its non-degree programmes.

Accordingly, the group recommended that:

The promotion of management and leadership skills through special training centres should continue to receive the support of member States and of external assistance, and, on evidence of success more such centres should be established.

The group next considered, under the same heading, the problem of school leavers who could not find wage employment in accordance with their expectations, generally in the white collar occupations. In view of the slow rate of growth of the national economies and of new wage employment, the group agreed that more attention might be paid to ways and means of encouraging youth to be self-employed. The group felt that there was room for the development of crafts and small-scale industries organized as producer or service co-operatives, based on existing patterns of economic activity. Such enterprises, however, need government assistance by way of financing, an industrial extension service, and detailed economic surveys to establish what kinds of small-scale industries are likely to be viable. Realistic schemes of vocational training could then be formulated and organized, and

young people encouraged to become small-scale entrepreneurs. It was also felt that some kind of instruction in business management and co-operative undertakings should be provided for in the curriculum even before youth left school so that their minds would be prepared for self-employment. The group recommended that:

Entrepreneurship among youth should be encouraged especially with a view to the establishment of small-scale enterprises that would increase the rate of employment among them. Micro-studies of African society should be undertaken to determine the demand for consumer goods and services and to provide the data upon which skills training programmes for youth could be formulated.

Training of teachers: Science, Technical, Commercial and Vocational Instructors

The group agreed that there was a serious shortage of science, technical and commercial teachers, and of vocational instructors impeding the development of a comprehensive and balanced system of educational training. The attention of the group was drawn to the Haile Selassie I University's Programme for training non-graduate technical teachers for schools over a two-year period. The group felt the programme represented an important innovation worthy of further study by other countries. The programme, however, raised important questions in the area of technical teacher education which each education system would have to answer for itself. In particular, it was necessary to define the role of technical teachers in secondary level institutions before prescribing their training. The group noted that it was by no means certain that graduates with an engineering qualification would be available or were best suited to work in all types of secondary level institutions. This was an obvious area deserving of further study and experimentation, and of the support of external aid-giving agencies. Convinced that educational and training programmes designed to achieve ultimate self-reliance in trained manpower in African countries will not achieve the set objectives without, among other things, an adequate supply of development-oriented science teachers and technical and vocational instructors, the group recommended that:

The ECA, UNESCO and the ILO should co-operate in exploring the possibility of jointly promoting the establishment within the framework of African universities appropriate institutes or programmes for the training of science teachers and technical instructors. Such programmes could be developed on sub-regional and multinational basis.

The group was of the view that in order to improve the quality and competence of teachers of technical, scientific and vocational knowledge and skills at the primary and secondary levels, and to promote the use of improved teaching methods and techniques, the educators of teachers themselves, especially those serving in teacher training institutions, would need further training. To this end the group recommended that:

Training programmes based on African universities or institutes, which are specially designed for the training of Teacher Educators, should be promoted in each sub-region, and that with the assistance of bilateral and the multilateral agencies be sought, where necessary, for this purpose.

External Assistance to Education in the 1970s

In considering this topic the group had before it the secretariat document on External Assistance for Education and Training in the 1970s: Forms and Priorities in Relation to Educational Strategies in Africa (E/CN.14/WP.6/34).

It was recalled that the theme of the meeting was to orientate national systems of education and training in Africa so that they might contribute effectively to two of the major economic and social development goals in the Second Development Decade, viz., rural development and industrialization.

The group noted that though substantial investments were made by the African countries from their own meagre resources to develop manpower, there was need for continued and increased technical assistance from the developed countries in this regard.

The group agreed that areas of educational activities to which priority ought to be given by national education authorities and to which external assistance should be deployed were the following:

- (i) Educational planning and management, including cost control.
- (ii) Technical and vocational education and training at all levels.
- (iii) Teacher training, especially the training of new and upgrading of existing stock of mathematics and science teachers, and vocational and technical instructors; and, the establishment of permanent in-service training centres.
- (iv) Educational research, including curriculum construction and educational evaluation tests.
- (v) Development of new resource materials, including the appropriate use of educational technology for making the teaching-learning process more effective.
- (vi) The training of vocational guidance counsellors and specialists in aptitude tests construction.
- (vii) Development of national and, where appropriate, multinational institutions for specialized training and research, especially those designed to meet critical manpower shortages.

- (viii) Local development and manufacture of classroom and laboratory equipment and teaching aids, and where necessary, establishment of multinational projects in this area.
- (ix) Establishment of national educational resources centres to purchase and stock in quantity educational materials, aids and equipment for distribution to the schools.

In view of the fact that a great part of the demand for study opportunities outside the national territory arose through lack of local facilities, the group stressed the need for aid to strengthen and expand existing educational facilities in the region. In this regard it noted with appreciation that scholarships formerly tenable in institutions outside the African region were, in many instances, now being made tenable within the region. It was, however, felt that foreign opportunities for study and training should continue to be offered and availed of in specialized fields, and for the preparation of selected high-calibre personnel for key positions of leadership.

There was considerable discussion on the role and effectiveness of foreign experts and it was noted that the recipient countries themselves were very much responsible for this state of affairs by failing to have clear-cut definitions of national technical assistance requirements and by providing vague or no job descriptions. The group emphasized that in order to obtain the maximum benefit from foreign aid, national objectives and targets must be defined, the procedures and policies governing such assistance be well understood, and requests for project assistance be specific and clearly stated. This situation, in fact, it was pointed out, underscored the shortage of manpower in the critical area of project identification and preparation; for undertaking negotiations with their sophisticated foreign counterparts; and, for skilfully co-ordinating foreign assistance with national and multinational plans. However, the group agreed that more use be made of available expertise in the African region. The group noted that there was a tendency towards greater centralization and professionalization of external assistance procedures in donor countries and to meet this situation the group recommended.

The setting up of, or improving national machinery to co-ordinate effectively bilateral and multilateral aid.

Annex. AGENDA

1. Opening address
2. Election of officers
3. Introductory discussion on development-oriented education
4. The design of education and training for rural development
5. The design of education and training for industrialization
6. External assistance for education and training in the 1970's
7. Discussion on report of proceedings.

Topics for Discussion

Theme: Educational Orientation for the Second Development Decade

Agenda Item 3:

Introductory discussion on relating African education to economic and social development needs and priorities

Agenda Item 4:

The design of education and training for rural development

- 4.1 - The integrated approach to rural development
- 4.2 - Formal education: modification of structure, content and orientation for rural economic and social development
- 4.3 - Pre-vocational preparation for rural occupations
- 4.4 - Vocational training programmes for out-of-school rural youth
- 4.5 - Non-formal development-oriented education for adult rural workers
 - 4.5.1 - Training farmers for increased productivity
 - 4.5.2 - Functional literacy programmes
- 4.6 - The training of teachers and instructors for rural institutions
- 4.7 - Ancillary services: educational and vocational guidance.

Agenda Item 5:

The design of education and training for industrialization

- 5.1 - Industrial skills requirements
- 5.2 - Educational and training priorities for industrialization
 - 5.2.1 - Science and technology: policies, programme priorities and problems of implementation

- 5.2.2 - Pre-vocational preparation for industrial occupations
 - 5.2.3 - Training facilities and programmes for industrial skills
 - 5.2.4 - Training facilities and programmes for related commercial, accountancy and secretarial skills
 - 5.2.5 - Management and leadership training programmes with special reference to industrial entrepreneurship
- 5.3 - Training of teachers: science, technical, commercial; vocational instructors.

Agenda Item 6:

External assistance for education and training in the 1970's:
forms and priorities in relation to educational strategies

1971

X. REPORT OF THE SEMINAR*

ON CORRESPONDENCE EDUCATION IN AFRICA

CONCLUSIONS AND RECOMMENDATIONS

Teacher training by correspondence courses

The UNESCO consultant, Miss Renée Erdos, reported on the role of her organization in this field. The serious shortage of teachers, both in quantity and quality, prompted UNESCO to try the correspondence teaching method, and concentrated efforts to improve the qualification of low-graded teachers, by actively supporting the creation of special up-grading programmes using correspondence courses. It had also made commendable efforts in the promotion of this method of teaching through the organization of special meetings and workshops, and through the publication of special monographs.

Training in agriculture

Correspondence education was recognized as a weapon in the struggle to achieve development in agriculture and the promotion of co-operatives. The reason for this, as Mr. Pierre Sam, FAO representative summed up, were that many of the subjects connected with agriculture and co-operatives about which requests for information are frequently received from rural extension agents, could be and were being taught by correspondence. As a further illustration of this topic, Mr. M. Kinbo (Ivory Coast) gave accounts of the success of the INADES agriculture courses being followed by farmers (some of whom are illiterate), rural extension workers and local government agricultural officers.

Social workers and planners

Accounts were given of the INADES "Service Féminin". In his report Mr. Marcel Forey, Director of the Women's Department (Service Féminin), explained how, through correspondence courses, INADES trains social workers responsible for promoting community development in the rural areas.

* Organized by the Economic Commission for Africa (ECA), in co-operation with the Ivory Coast National School of Administration (ENA) and with the close collaboration and financial assistance of the Swedish International Development Authority (SIDA), the Seminar on Correspondence Education in Africa was held in Abidjan (Ivory Coast) from 5 to 15 April 1971. The specific objectives assigned to the seminar were: (i) to evaluate the general development and prospects of correspondence education in Africa; (ii) to consider the opportunity of using correspondence education in some specialized fields of training such as agriculture, teachers up-grading, public administration etc; (iii) to consider the possibility of introducing new techniques to reinforce correspondence education in Africa; (iv) to consider the desirability of establishing a permanent machinery for the promotion of correspondence education in Africa. Only the conclusions and recommendations of the seminar are reproduced here. The Conference part is available in document E/CN.14/WP.6/38.

For the first time in 1969/70 the United Nations Division of Social Development organized a post-graduate course for social planners, mostly from developing countries. Mrs. Gloria Scott, Chief of the Social Planning Section in that Division gave a full report of this experiment of training high level social planners through correspondence courses. In order to achieve greater homogeneity in the course contents and relate them to local environments, it was suggested that such similar courses be organized on regional or continental basis.

Public administration

Mr. Antoine Kabwasa (ECA) gave a summary of a survey on the development of correspondence courses in the training and up-grading of civil servants in Africa. These programmes were essentially preparatory to training in schools of public administration, and preparatory to special professional examination and short-term specialized training. The Director of ENA - Abidjan, Mr. M. Bernard reported, in the same field on the particular experience of the Ivory Coast National School of Administration.

Secondary and adult education

The advantages of the use of programmed learning and supervised correspondence courses in adult education were presented by Dr. O. L. Farrag (American University of Cairo). He further reported on the utilization of these methods by the UNRWA/UNESCO Institute of Education (Beirut).

Correspondence courses in conjunction with evening classes were used by the "Centre National de Para et Télé - Enseignement CNPTE" in Abidjan (Ivory Coast) in providing general secondary education and in preparing candidates for secondary school certificates (B.E.P.C., BAC and entrance examinations to university faculties). Most of the candidates were young adult workers and former school drop-outs who were being given a second chance to complete their education. The report on the CNPTE activities was presented by its Director, M. Clément Angoran, of the Ministry of Education (Ivory Coast).

Post-secondary education

That university education in most fields could be effectively carried through correspondence was reported by Professor C. Wedemeyer of the University of Wisconsin Extension Department (USA) Mr. M. Kaunda (Zambia) further gave an account of the diploma and degree courses at the University of Zambia. African countries can follow these examples in extending higher education to many of their citizens.

Technical education

The myth that technical subjects could not be taught by correspondence courses was something of the past. Although not represented by a delegate, the ILO made available to the seminar a report on the use of long distance arrangement for training in the field of technical and vocational education.

The publication CIRF, Training for Progress, was illustrated with examples of schemes such as the New Zealand Technical Correspondence Institute which has trained many technicians through correspondence teaching. That such a scheme could be applied to the African context was confirmed by Mr. Albert E. Kaye, (New Zealand), correspondence education expert, who had set up the Malawi correspondence college.

Branch offices

Mr. Philippe Dubin, Director of INADES, the largest panafrican centre for correspondence education thought it impossible to provide education and training on the basis of written material alone, especially in a continent dominated by a long oral tradition. He emphasized the need for regular personal contacts. Such direct contacts could be established through the creation of national or local branches where residential sessions could be organized from time to time. If necessary tutors should make a point of visiting students. The extensive use of national and local or district branches, and regular meetings with students, all tended to enhance and reinforce the advantages and values of correspondence education. In this regard the experience of INADES "Centre Africain de formation" proved very successful judging from requests being made on these courses.

Assistance to correspondence education in Africa

SIDA's consultant and seminar Director, Mr. Lars-Olof Edstrom (Sweden), emphasized the need for international co-operation to help any African country wishing to establish correspondence education project. Examples of such co-operation are illustrated successfully by the UNESCO/Botswana, and UNICEF/Uganda's Teacher up-grading programmes; also the recently concluded correspondence course writers' workshop jointly organized by SIDA/UNESCO and Tanzania Government. Bilateral or multilateral aid would be readily available especially in setting up training programmes in the field of highly felt need - without it being a duplication of existing institutions. Kenya, Tanzania, Malawi and Ethiopia, to cite but a few countries, have benefited from such assistance. Mr. Edstrom also dealt with the necessity of giving formal training, through bilateral or multilateral aid, to a core of prospective correspondence courses educators, administrators and course writers.

Mr. G. Lutz gave an account of the support of his organization, the European Economic Community (EEC), to education by correspondence in Africa. The action of the EEC was limited mainly to granting scholarships enabling African students, from countries associated with the European Common Market, to pursue education by correspondence in European or African institutions.

Promotion of correspondence education

Professor Charles Wedemeyer (USA), President of the International Council on Correspondence Education (ICCE) highlighted the role the association plays on the international scene. He dealt mainly on the historical evolution of the ICCE and the desires of the organization to promote greater understanding

and exchanges on correspondence education. The up-grading of their status with the UNESCO from category D to category C is a sign of their accomplishment.

Mr. Isaac Sloos (Netherlands), of the European Council on Education by Correspondence (CEC) and the Netherlands Government Consultant to the Seminar, spoke on the European experience acquired in obtaining closer co-operation between schools, and in the promotion of ethnical standards of practices. He also reported on the effort being made by European countries, with the encouragement of the Council for Cultural Co-operation of the Council of Europe, in introducing legislation banning unethical practices and urging adequate inspection of correspondence schools by the Government educational authorities.

After a brief review of associations of correspondence schools in other parts of the world, Mr. M. Kaunda, as Vice-President of the ICCE, emphasized the need to set up an African Association. He made concrete proposals to participants as to the best approach to further promote correspondence education in Africa. During the final discussion on his proposal the seminar recommended and nominated an ad hoc committee to study further the best way to establish such an association.

Specialized committees

In order to examine in greater detail some problems of particular importance to correspondence education in Africa, the participants were divided into two working groups - on language basis.

Committee A (French-speaking)

This Committee had to consider problems connected with the training of correspondence course staff and the use of other media to enhance and provide effective teaching by correspondence. On the subject of correspondence education staffing, the group agreed to:

- (1) preference in recruiting local staff;
- (2) necessity of pre-service training of the staff;
- (3) need for special workshops for course writers and tutors;
- (4) need for refresher training for some specialists in correspondence education.

Among other media of relevant use in correspondence education in Africa the committee listed the following which were actually being utilized by various African schools: evening classes, residential sessions, visits, Radio and T.V. broadcasting, local press. Further use could also be made of cassettes, tapes and programmed instruction. Satellite utilization was mentioned but not discussed for lack of experience by the members.

Committee B (English-speaking) considered the administrative and organizational aspects of the centre for correspondence education, and the problems faced by correspondence students in Africa. On the administrative aspects, the committee noted the scarcity of correspondence schools administrators and teachers. It urged that, through ECA, a programme be established to train correspondence education administrators. This role could later be undertaken by an association of African correspondence schools.

Apart from the isolation and inadequate environment, the most urgent needs of African correspondence students were recognized as the lack of reference manuals and appropriate book service. A regional library or a mobile library service was suggested as a solution. An independent regional or local depot was also proposed to overcome the deficiency of some postal services in the forwarding and collection of lessons. The reports of both committees would be reproduced, in extenso, in the proceedings of the Seminar.

Recommendations and follow-up action

(1) Promotion of correspondence education in Africa

Following the expressed desire to create, in the near future, an Association of African Correspondence Schools, the participants agreed and elected an ad hoc Committee composed of:

Mr. Martin Kaunda (Zambia) as Chairman
Mr. Solomon Inquai (Ethiopia) as Secretary
Mr. Sidiki Diarra (Mali) as member
Mr. Clément Angoran (Ivory Coast) as member

The committee was assigned the role of exploring ways and means of establishing a permanent body which would ensure continued interest in Africa on correspondence instruction. The committee would need to seek the assistance of, and work closely with the ECA in the accomplishment of its mission. It was to prepare its report within a period of two years, (1973), prior to a second conference of African schools of correspondence education.

(2) Training courses on correspondence instruction

Many African countries were now initiating programmes of training by correspondence courses ^{1/} and there was a scarcity of available correspondence course specialists in Africa and in the world. In view of this, the Seminar passed a resolution calling on the ECA, in the spirit of this seminar, and in co-operation with aid-giving agencies or Governments, to organize as a matter of the priority the following workshops:

^{1/} Togo and Rwanda plan to start such programmes during 1971.

- (a) Workshops for administrators of correspondence schools
- (b) Workshops or training courses for course writers and tutors on national, and/or on sub-regional basis
- (3) Documentation

The Seminar also recommended the establishment of a documentation unit which would collect, analyse and publish information on correspondence education in Africa and in the world. As a start such a centre could be located at ECA.

Annex. AGENDA

ITEM I : Introduction

1. Presentation
2. Official Opening
3. Organization of the Meeting
4. Election of Seminar Officers
5. Presentation of Country Reports

ITEM II : Discussion of Special Fields of Correspondence Education with Emphasis on Africa

1. Teacher Training and Up-grading through Correspondence Methods
2. Training for Public Administration through Correspondence
3. Training in Agriculture and Co-operatives through Correspondence
4. Use of Correspondence Courses in Management and Technical Education
5. Training Rural and Social Workers through Correspondence Education
6. Correspondence Education for the Expansion of Secondary and Adult Education
7. Post-Secondary Education through Correspondence
8. Assistance to Correspondence Education in Africa

ITEM III: Special Problems of Correspondence Education in Africa

1. General Introduction by ECA
2. Discussion and Recommendation by the following Working Committees:

COMMITTEE "A"

- Training of Correspondence Course Staff (Tutors, Course Writers, etc.)
- Uses of other Media in Correspondence Education

COMMITTEE "B"

- Administrative and Organizational Aspects of Correspondence Education in the African Context
 - Problems faced by students of Correspondence Courses in Africa
3. Reports of Committees A, and B in plenary.

ITEM IV: Promotion of Correspondence Education in Africa

1. Introduction by secretariat
2. General discussions of issues involved and requirements in the Promotion of Correspondence Education
3. Proposal for an African Association

ITEM V: 1. Evaluation and Final Recommendations

2. Official Closing

Volumes in the Series

HUMAN RESOURCES PLANNING IN AFRICA

1. Training Course in Human Resources Planning in Africa (Dakar, Senegal, 18 July - 8 September 1967).
2. Training Course for Manpower Planners and Administrators of National Training Programmes (Nairobi, Kenya, 8 July - 30 August 1968).
3. Stage de Formation à la Planification des Ressources Humaines en Afrique (Tanger, Maroc, 1er juillet - 21 août 1969).
4. Manpower Planning and Utilization in Africa: Problems and Prospects (Dakar, Senegal, 6-14 October 1969).
5. Advanced Course in Manpower Planning and Training Programming (Lagos, Nigeria, 12 July - 22 August 1970).
6. Education and Training for Development in Africa (Selected papers).