



UNITED NATIONS
ECONOMIC AND SOCIAL COUNCIL



51237

Distr.: LIMITED

E/ECA/PN.U/HRP/85/WP.5
September 1985

Original: ENGLISH

ECONOMIC COMMISSION FOR AFRICA

Second National Study Seminar on Population,
Human Resources Planning and Development

Nairobi, Kenya, 22 Sept. - 10 Oct. 1985

THE CHALLENGE OF MANPOWER PLANNING AND
THE CURRENT ECONOMIC SITUATION IN AFRICA

(a) Introduction

Much has already been said about manpower planning and the need for its fuller integration into overall national development planning processes and efforts. This need is based on the recognition of the potentials which manpower planning hold for redressing the severe skills shortages which constitute a serious constraint on development on the continent.

Increasingly, it is being accepted that the special African economic circumstances prevailing, call for approaches which would render manpower planning efforts more effective, in the face of severe constraints such as lack of data, inadequacy of well trained staff, inadequacy of manpower planning instruments, and policy weaknesses which do not adequately create the conditions for allowing manpower planning efforts to have their maximum impact on the pace of development.

In this paper, a synopsis of present African social and economic conditions will be made with a view to highlighting the main imbalances which dictate manpower development priorities. The current manpower supply and demand situation will next be reviewed to show general problem areas. An analysis of the factors that have given rise to these problems will also be made with a view to proposing some practical measures that need to be adopted to correct imbalances.

(b) Social and Economic Conditions in Africa ^{1/}

Twenty years after the independence of African countries, social and economic conditions within the continent were found to have declined to alarmingly low levels. After a brief period of positive growth trends in the 1960s and early 1970s, internal and external factors began to emerge to create serious problems for Africa's socio-economic development efforts. By 1983, these problems had converged to constrict Africa's development and to bring about a crisis in African economies. In that year, almost every indicator of socio-economic development had registered a decline. GDP fell from 1.3 percent in 1980 to zero in 1982, -0.1 percent in 1983 and 0.1 percent in 1984. A high average annual population growth rate of around 3 percent in the last ten years, brought real per capita incomes in 1985, to levels lower than what they were in 1975. Since 1980, real per capita incomes have in fact been declining at a rate of 4.1 per cent per annum. In 1980, approximately 70 per cent of Africans on the continent were either destitute or on the verge of destitution with per capita incomes of between US 59 and US 115 at 1972 prices. By 1984, 26 out of the 50 African independent states had been classified by the United Nations as being among the least developed countries (LDC's).

Overall social conditions within the continent have also registered significant declines. About 60 per cent of the African labour force are today either openly unemployed or seriously underemployed; some 50 to 60 per cent of the African population are estimated to be living in slums or squatter settlements; and only one African out of every four has access to safe drinking water. Infant mortality is more than twice as high as in the developed countries, and a lower percentage of Africans have access to modern health facilities than was the case ten years ago. Social and political unrests have been on the increase, and rates of crime and juvenile delinquency have shot up dramatically.

^{1/} Figures quoted in this section are from ECA Sources.

The international economic environment has contributed in part to bringing about these unfavourable economic and social conditions in Africa. By 1984, commodity prices had collapsed in the world markets; real official development assistance stagnated by the end of the seventies and began to decline at the beginning of this decade; protectionist policies were reinforced and interest rates reached unprecedentedly high levels. All these factors combined to induce African countries to resort to commercial borrowing resulting in an increase in the continent's heavy debt burden which pushed up Africa's external debt from US 143 billion in 1982 to US 150 billion a year later. This amounts to some 223.5 per cent of the total value of exports of African countries.

A second major cause of the critical social and economic conditions in Africa is the adverse climatic conditions which are only now abating on the continent. Drought, desertification, floods, cyclones and other natural disasters affected 39 out of Africa's 50 independent states. These climatic conditions have severely affected agricultural production, have displaced millions of peasants and pastoralists from production activities, and have negatively affected productivity levels in other economic sectors. Over one million people died as a direct result of drought and some 150 million others were affected by hunger and malnutrition.

Even more serious, has been the impact of these adverse climatic conditions on the food situation in Africa. In 34 drought affected countries of the region, cereal imports increased from 4 million metric tons in 1972 to more than 23 million metric tons in 1982. By 1984, food aid requirements had shot up past 3.3 million metric tons.

The industrial sector continued to be a victim of an unrealistic and precarious industrialization strategies evolved in the 1960's. Import substitution industrialization strategies, which failed to create backward linkages with the region's abundant natural resource base, turned out to be too foreign-exchange dependent. The declines in foreign exchange earnings meant that production inputs could not be purchased thus severely limiting capacity utilisation in industry.

All of the foregoing converged to bring about very difficult conditions in Africa's social and economic development. ECA warned that unless present development priorities, strategies and directions change, socio-economic conditions in the continent "would be characterised by a degradation of the very essence of human dignity"^{1/} in the next quarter of a century. Most clearly, something needs to be done to strengthen Africa's social and economic foundations and to orient development along more meaningful paths.

(c) Measures for Reorienting socio-economic development strategies

The severe negative impact of external economic and financial conditions on African economies, the effects of climatic conditions on production and life itself, and the inability of African economies to withstand internal and external shocks, are all an indicator of a deep-rooted structural crisis—the crisis of underdevelopment. As ECA put it:

^{1/} See ECA and Africa's Development, a preliminary perspectives study; Addis Ababa, 1983; p.93.

"Underlying the current crisis, is Africa's underdevelopment and economic backwardness, its failure to achieve a clear break from its colonial dependent economic inheritance with a production structure heavily dominated by export - oriented agriculture and with a small industrial base, fractured and only minimally linked with the region's natural resource base, with mining output being predominantly for export and with the most open and exposed economy in the world. As is well known, external trade constitutes the single major stimulus to spur internal socio-economic progress in spite of narrowness of export commodities and the dramatic price shifts".^{1/}

To correct this undesirable state of affairs a number of policy prescriptions have been made in several African fora, but notably by the Lagos Plan of Action. African Governments agreed in 1976, that "Africa must first and foremost, put its house in order by installing a new national social and economic order in every country, and a new order in Africa as a whole" ^{2/}

The Lagos Plan of Action, can be said to contain the most fundamental appraisal of Africa's underdevelopment dilemma ever made by Africa's Heads of State and Governments. It makes far reaching policy prescriptions for a change of development directions towards efforts to strengthen Africa's socio-economic foundations and gear the continent towards self-reliant and self-sustaining development.

The broad objectives of the plan are

- (i) the promotion of self-reliance and self-sustainment in growth and development;
- (ii) the promotion of inward-looking and autonomous processes of economic growth;
- (iii) a diversification and integration of the African economy;
- (iv) the eradication of unemployment and mass poverty and a fairer distribution of incomes and wealth;
- (v) the strengthening of sub-regional and regional cooperation to overcome the effects of balkanization such as the extreme vulnerability to exploitation by outsiders and the inability to coordinate and exploit the region's natural resources.

The Lagos Plan of Action emphasises that to achieve these objectives, all factors of production must be made to interact in such a way as to create internal inter-dependencies and so promote internal economic integration. In this, policies must be implemented with a view to developing subregional, regional and national markets into direct suppliers of factor inputs and direct consumers of goods and services. Skills and knowledge must also be developed not only to provide a comprehensive understanding of the entire resource base within the region, but also, and more importantly to be able to exploit that base for application to meaningful development endeavours.

^{1/} The African Economic and Social Crisis; An Agenda for Action by Africa and the International community, Addis Ababa, 1984, p.15.

^{2/} ECA: Doc. E/EN/14/ECO/90/Rev.3.

This would require the strengthening and reorientation of institutions of education and training, of planning and of finance. It would also call for the development and realignment of capabilities towards the production of technical, scientific, managerial and entrepreneurial skills within the continent.

All of these require action on the part of manpower planning and development institutions within the region so that the right skills, knowledge and attitudes are produced to activate development towards these new directions.

(d) Current Manpower Supply and Demand Situations in Africa

The current manpower supply situation in Africa is characterized by serious shortfalls in the scientific, technical and managerial categories. Doctors and related medical workers of all specialization, engineers and engineering technicians for all branches of engineering, industrial agricultural financial and economic managers represent the skill categories which are in extremely short supply in African countries. Apart from the manifestations of direct shortfalls of skilled manpower in these areas, there are also "hidden" shortfalls in high levels of expatriate employment at high professional, technical and managerial levels.

Generally, unskilled and semi-skilled manpower categories pose very little or no problems to Africa. If anything the problems encountered have had more to do with an oversupply in these categories than a shortage. The latter affects middle and high - level occupations in all African countries. But whether the situation for any skill area is one of shortage or surplus, it indicates an imbalance which manpower planning systems must endeavour to redress.

We shall now look at the manpower supply and demand situations for certain industries, as an example of the tremendous challenges which face the role of manpower planning in Africa's development.

Developing Africa's basic industries, and particularly its capital goods industries is a major industrialization priority for attaining the objectives of the Lagos Plan of Action. Iron and steel are the major inputs into production in these industries. Yet with Africa's abundant natural resources for the production of iron and steel, the region continues to import over 90 per cent of its requirements from outside. To reduce this dependence on others to around 60 percent by the year 2010, ECA estimates that the region would have to produce 61 million tons of its total requirements. This would require the production of some 352 million tons of iron ore and a further 131 million tons of coal, calling for a total investment of US 190 million at 1980 prices. Using coefficient of employment in iron and steel industries derived from ILO estimates, the manpower required to produce that target output was estimated as follows:

1 see ILO: The Establishment of Iron and Steel Industries in Developing Countries and its impact on Training and Development of Skills, Geneva, 1981

Table I: Manpower for Iron and Steel Industry in Africa by the year 2010

<u>Categories</u>	<u>Numbers</u>
Engineers and Managers	19,215
Technical	32,940
Administrative/Clerical	27,450
Skilled workers	109,800
Unskilled workers	85,095
Total	<u>274,499</u>

Source: ECA Africa's Development p.75

The supply of manpower for the last two categories of workers for the iron and steel industry will probably pose no problems whatsoever. However for the remaining categories there will be difficulties if present manpower development trends continue. Chemical, mechanical, civil, electrical, and process engineers and technicians are the types required to operate iron and steel works. These have to come from faculties of science and engineering in universities polytechniques and institutes of technology within the region ECA's historical trends projections indicate that only 70,000 students would be enrolled in these disciplines in third level educational institutions by the turn of the century. This figure would be grossly inadequate to respond to the iron and steel industry's manpower requirements, if one considers the manpower demands from educational institutions and all other sector of industrial production. The situation is further compounded by the wastage that would result from the brain drain, which is estimated to grow considerable in the years ahead; change of occupation; retirement; and death.

One more example will suffice to illustrate the point being made about the magnitude of manpower need for African, industrial development:

To fulfill objectives of food self-sufficiency, it has been agreed that among measures designed to begin improving the present situation, fertilizer production and its application to the food sector in African agriculture must be stepped up. Aiming at a 100 per cent self-sufficiency ratio of domestic fertilizer production in African countries, ECA estimated that by the year 2010, at least 7.2, 6.6, and 6.3 million tons of nitrogenous, phosphatic and potash fertilizers respectively would have to be produced internally. Once again using data on employment in the fertilizer industry from UN sources ^{1/}, it was possible to compute the total manpower required to meet these output targets:

^{1/} See ILO Human Resources for Industrialisation, 1967. UN ECOSOC, Training of National Personnel for the Accelerated Industrialization of Developing Countries, 1975

Table II: Manpower Requirements in the Fertilizer Industry by year 2010

<u>Categories</u>	<u>Numbers</u>
Managers and Supervisors	66,466
Health Personnel	1,741
Engineers and Technicians	7,754
Draughtsmen	633
Skilled workers/foremen	28,003
Secretaries/clerks	9,020
Operators	35,765
Unskilled and service workers	68,767
Total	<u>218,161</u>

Source: ECA and Africa's Development, Addis Ababa, 1983, p.74

The supply of some 194,000 unskilled and skilled workers is not expected to constitute a problem. The real difficulties will be encountered when it comes to filling in the 52,155 vacancies that will emerge for managers, engineers and technicians.

A brief look at the current and projected enrolment levels in engineering in African third level educational institutions will help to underscore the serious manpower supply problems to be anticipated within the region's industrial development strategies:

Table III: Actual and projected student distribution by field of study in engineering in third level education in Africa (1984/5 to 2000)

Field of Engineering	1984/ 1985	1985/ 1986	1986/ 1987	1987/ 1988	1988/ 1989	1989/ 2000	2000
Agriculture	18,676	19,488	20,300	21,112	21,924	22,736	30,856
Civil	15,215	15,876	16,532	17,199	17,861	18,528	25,133
Electrical	12,719	13,272	13,825	14,373	14,931	15,484	21,014
Mechanical	12,156	12,684	13,213	13,741	14,270	14,782	20,079
Metallurgy	2,174	2,268	2,363	2,457	2,552	2,646	3,581
Water	13,766	14,364	14,963	15,561	16,160	16,758	22,743
Chemical	1,932	2,016	2,100	2,184	2,268	2,406	3,246
Energy	2,013	2,100	2,188	2,275	2,363	2,450	3,325
Mining	1,932	2,016	2,100	2,184	2,268	2,406	3,246
Total	80,583	84,004	87,590	91,091	94,597	98,000	133,233

Source: ECA Doc. PAM/AAU/ED/10/82

From this table, it can be seen that out of a total regional population of about one billion people by the turn of the century, Africa will be able to rely on no more than 100,000 engineers and technicians in all engineering fields to transform natural resources into industrial goods and services apply science to technology and create, maintain and upgrade the Continent's industrial and technological infrastructures. Infact, the 84,000 students enrolled in institutions of higher learning today will not become productive graduate engineers and technicians until close to the year 2000. And the projected 133,000 who would be enrolled in these fields by that date will only benefit the continent by the year 2010.

Furthermore if one looks at the areas of priority dictated by the recent drought in Africa, it is doubtful that manpower development efforts will be able to respond to needs in the years ahead. In the field of water engineering, only 14,000 students are enrolled in faculties of engineering today and slightly less than twice that level of enrolment is projected for the year 2000. Therefore all the measures prescribed for developing, harnessing and conserving Africa's water resources in the immediate future are most likely to flounder as a result of severe high and middle-level manpower shortages in this and other related fields.

Added to this problem is the problem of inadequacy of institutional structures and infrastructures; opportunities for middle and high level manpower development through education and training are most inadequate against the objective demands imposed by Africa's current level of underdevelopment. Continuing with manpower for industrialization to illustrate this point, Table IV looks at the facilities for study in selected fields of engineering which are available in 20 African least developed countries:

Table IV: Fields of engineering in 20 African least developed countries

<u>Fields of Study</u>	<u>No. of Countries</u>
Agricultural engineering and Food Technology	1
Civil Engineering	3
Chemical Engineering	0
Electrical Engineering	1
Mechanical/Production Engineering	3
Energy/Power Production	2
Water Resources	0
Mining and Geological Engineering	0
Metallurgical Engineering	0

Source: ECA: Technical Co-operation among African Countries in Human Resources: Planning Development and Utilization, Addis Ababa, 1982

The countries surveyed in table IV are those most likely to benefit from investment in human resources development institutions and programme upgrading, with heavy emphasis on scientific, engineering and technical disciplines. Most of them have acute water shortage problems; all need much improvements in agricultural production practices; and all require a strengthening of their industrial base. Yet none of them had facilities for developing manpower for mining, water resources or chemical engineering; only one had facilities for education and training in agricultural engineering and food technology; one for chemical engineering; and three for civil, mechanical and production engineering. This is the normal imbalance between development needs and manpower supply which Africa is plagued with. And this is the tremendous challenge posed to the manpower planner for correction.

(e) Some measures for action

To create the conditions that would make it possible for African Governments to face the manpower challenges of development with more effectiveness, action must be sought in policy formulation, institution building, the strengthening of capabilities, and a better integration of manpower planning into the mainstream of socio-economic development planning.

(i) Manpower Policy Formulation: There has been much said over the years, of the need to evolve clear manpower policies. Unfortunately, not much has evolved over the years to indicate that this call has been heeded by most African countries. It is still not clear on whose behest educational institutions select, design and weight their course offering, nor is it evident that manpower policies, if they exist, are used to influence enrolment in the various disciplines, and consequently skills output from third level educational institutions. In addition, in most African countries, manpower planning may be catered for through the creation of institutional structures for that purpose, but as for the specific roles these structures are to play in the day to day business of planning economic development, most African Governments have not been explicit. This situation has resulted in many cases in confusion, unnecessary overlaps and duplication of efforts, working at cross purposes and an eventual atrophy of manpower planning institutions.

There is therefore a need for policy to be clearly articulated specifying the objectives, roles and responsibilities of manpower planning agencies, with a view to facilitating a greater degree of effectiveness of manpower planning institutions.

(ii) Institution Building

Creating manpower development institutions is a costly affair. Therefore, above the social considerations involved in creating and maintaining them, economic rationality must come into play to ensure that they contribute, rather than hinder socio-economic development efforts. Manpower planning in Africa should therefore evolve with greater foresight and the right amount of leverage to guide decisions on institution building so that these institutions become an asset and not a waste.

In the process of developing this role the manpower planning function as an institution of Government must strengthen its capability to deliver the goods. Structures must be rationalized, expertise upgraded and resources made available to allow the manpower planning function the wherewithal required to operate effectively.

Staff complements and quality must also be upgraded. Resources must be made available for surveys, studies and other activities designed to increase planning effectiveness.

(iii) Integrating manpower planning into overall development planning

This is an area in which many words have been wasted. Most African development plans continue to ignore the manpower input to growth and development. And plan implementation continues to be retarded because of manpower shortages.

African Government must show proof of their faith in manpower planning by supporting it politically, administratively and financially. They must also create the conditions for manpower planning to emerge more positively in sectoral and macro-economic planning.

(f) Conclusion

The present state of Africa's economic and social development is so precarious as to warrant a reappraisal of past development directions and to chart out new strategies and new policies to gear African development goals towards self-reliance and self-sustainment. This has dictated a shift of emphasis from certain production areas while stressing the reinforcement of new one. The manpower implications of this new strategy are that more systematic approaches must evolve to plan for and develop the quantities, qualities and types of manpower required to boost production and provide the desired support services in the new priority areas.

How it will respond to this need and the degree to which it hopes to be effective in making important contributions to Africa's development, is the challenge that faces manpower planning in current social and the economic situation in Africa.