AUGMENTATION AND IMPROVEMENT OF AVAILABLE RESOURCES IN AFRICA

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Perhaps the major problem in accelerating the rate of growth of African economies arises from the irrational utilisation and misallocation of existing resources. There is probably no absolute shortage of resources - human and physical. In general what is lacking is the ability to exploit the existing resources fully and to channel them to areas which are sensitive to rapid economic growth.

It is absolutely impossible to discuss every aspect of this problem within the time at my disposal. A greater difficulty in discussing this problem is the shortage of data from which firm conclusions can be drawn on, the existing stage of development of certain key sectors in various African countries. In the event I have had to rely on what facts and figures as are available in the United Nations publications and other sources. This paper should not in any way be regarded as a product of original research. What I have done is simply to bring into focus certain well-known ideas so as to provoke discussions among experts in various fields of African economic development. In spite of the faults that may be here and there in the paper, I sincerely hope this aim will be achieved.

I have concentrated on only three aspects of resource development: viz., the development of human resources, the provision of economic infrastructure and the mobilisation of internal financial resources. There is no doubt that other aspects of the problem which though important, have been left out. This omission is regretted.
I. The Development of Human Resources

As a pre-condition for a successful take-off, it is not the amount of labour which is important, but the availability of specific types of labour. Modern industry with its increased reliance on science-oriented technology requires a group of trained professional people capable of understanding and controlling the complicated bases of modern technology. The major instrument for developing this selected group is the educational system.

An indication of the inadequacy of the educational systems in Africa is the low level of literacy. The percentage of illiteracy over the age of 15 in Africa is 80-85 per cent compared with 3-4 per cent in North America. A number of African countries have in recent years been making enormous efforts to expand their educational systems. This expansion has covered primary, secondary and university education. Despite this expansion educational facilities remain wholly insufficient. (See Table I). Only in six countries out of 30 is the ratio of enrollment in primary schools to population in school age groups higher than 60 per cent. In no less than seven countries the ratio of enrollment was around 10 per cent and in Ethiopia and Niger it sank to less than 5 per cent. Even in countries where primary education has made headway, there is a marked discrepancy between those receiving primary and secondary education. The higher enrollment ratios for secondary education are to be found in Ghana where it is about 30 per cent, but in all the other countries it is less than 10 per cent.

Inadequacy of educational systems, generally is but only one facet of the problems of human resources. Perhaps a much more serious aspect is the inappropriateness of the educational systems. Education is both a
consumption good as well as an investment service. In the development of human resources a distinction should be made between the types of education which contributes to the enjoyment of life and the types which directly increase national output. The types of education which is valued as consumption good are not necessarily suitable for the rapid increase in national output. A minimum level of literacy among the producers may be a necessary condition for widespread transmission of technology. But it is unlikely that a universal primary education designed to build up this level of literacy will increase national output as much as to cover the cost of such education. This type of education while it may be necessary for cultural, and political advance is not a profitable investment.

In Africa, emphasis has been placed on education as a consumption good, rather than as an investment service. This is surely an heritage of their colonial past. The colonial system of education, inherited by most African countries, had little relationship to the social and economic conditions of African countries. The emphasis was on literacy, quality, rather than specialised and technical education. This pattern of education has not yet changed in many independent African countries. This is reflected in the rapid expansion of primary education and very low emphasis on secondary education. Also higher training has been largely devoted to non-technical studies. As a result of the inappropriateness of the educational system, due to the modelling of the educational system and curricula after those of metropolitan countries, there has arisen in many African countries a large pool of young people dissatisfied with traditional society, but not equipped with adequate training for the jobs to which they aspire. Such a discontinuity between skills and aspirations has magnified the problem of urban unemployment in some African countries.
The central problem in the development of human resources is to devise a programme of education and training appropriate to the skill requirements. An educational system is like a pyramid with relatively large numbers at the base of elementary schooling and small numbers at each step of more advanced training higher up in the structure. An educational policy must take into consideration not only the number of students at each level of the pyramid at a certain time, but how many students will be prepared for successive higher levels of the pyramid in succeeding years. As already indicated most of the expansion of the educational systems in Africa has been done at the primary level. Only a low proportion of primary school leavers have access to any form of higher education. It is generally agreed that for the development of skills especially at the intermediate range, the expansion of secondary schools deserves a first priority in educational planning. The shortage of intermediate level manpower is perhaps the crucial manpower problem in Africa. This level of manpower cannot be imported on a large scale, because of the high salaries and allowances which may be necessary to attract a large number of people within this range. In Africa it is estimated that the proportion of persons who have received secondary education varies between a third and a fifth of the number of existing jobs for which secondary education is appropriate. The result is that the job is done either by insufficiently educated persons or by expatriates imported and paid at exorbitant costs. The expansion of secondary schools is necessary to increase the supply of people who, with on-the-job training or a short period of training in technical institutions would turn out to be technologists, junior engineers, clerks, agricultural assistants and bookkeepers.

Apart from the need for more emphasis on secondary education, there is also the need to maintain a balance between institutional and in-service training. This balance is essential both from the view of reducing the cost of education and of ensuring rapid increase in labour productivity.
Education is an expensive undertaking. More so in Africa where the supply of teachers has to be augmented by foreign personnel. In Kenya where the average income per capita is £30, it is estimated that it costs more than £200 per pupil to build a secondary school. Another indication of the high cost of education is the proportion of government devoted to education, which in Africa is within the range of over 50 per cent. One way of reducing this cost is through the diversification of the system of training. It is not only schools, colleges, and universities which can prefabricate skills needed for rapid increase in labour productivity. Quicker returns may be achieved by training people actually on the job. The strategy of development of human resources should be to assign as much responsibility as possible for training to the major employing institutions.

In industry a combination of on-the-job training apprenticeship system, and part-time instructions may be more economical than costly vocational schools. It has been estimated that a developing country needs between 2 and 10 per cent of its adults in the building, metal working, and engineering trades. Not all these people need be trained in vocational schools. The government has a responsibility to encourage non-government employers to take up the task of training their own craftsmen and some categories of technicians. Also military establishments offers scope for the development of skills. The navy and the army can be organised for training skilled craftsmen and technicians of various kinds. To utilise this medium of training young men may have to be subjected to a period of compulsory military service. Still another method of diversifying the system for training is the possibility of exploiting the potentialities of technical assistance as a training institution. Most technical assistance experts are used mainly to handle operations for a short period. In order to get the best out of technical assistance it is desirable that technical experts be given direct
responsibility to train local counterparts, who will replace them at the end of their contracts. The purpose of technical assistance should be to transmit technical knowledge to developing countries.

Another sector which offers scope for diversified systems of training is agriculture. The most fundamental difficulty in developing agriculture is the shortage of personnel trained in the extension service. At the time when The Nigerian National Plan was being prepared there was only one extension officer having the vital task of introducing 35,000 cultivators to new and improved methods. This was an absurd situation because the results of research work in agriculture was lost to the farmer due to the inadequacy of extension service. It is estimated that a country needs one extension worker for 500 farmers in order to make any progress at all. The target ratio in the Nigerian National Plan is one to 2,000. It would be impossible to provide these numbers if each has to be given a full university education. The best training for agricultural extension workers is that which combines farm work with institutional training. The training scheme for extension workers need not demand very high technical qualifications. An ideal solution is probably to encourage students from secondary schools to take to farming and after two years be exposed to modern farming techniques in farm schools.

Apart from these methods much more could be done through the formal means of vocational training. However only a very few Africans countries make adequate provision for vocational training. There should be specialised training facilities for people between the ages of 16 and 20 in the educational system. Such facilities will enable secondary school leavers, needing preliminary training in certain vocations, to be trained as secretaries, technicians, teachers, etc.
In short, a developing country must consider its educational system in the light of the peculiar requirements of development. It cannot simply adapt from the old models. Having come late to development, it is the good fortune of the new countries that they can learn from others. But it is their misfortune that so much of what exists in other countries cannot be copied. Adaptation is as demanding in its own way as innovation (Galbraith's Economic Development in Perspective).
II. The Provision of Infra-Structure.

An accelerated rate of growth can seldom be achieved without the provision of economic infrastructure. Economic infrastructure includes investment in transport (railways, roads, harbours, air fields), communications, electric power, irrigation, land reclamation, etc. Without an adequate infrastructure, development seems ultimately bound to fail. The expansion of economic infrastructure provides external economies to other industries and it lowers the capital co-efficient. Subsequently required per unit of output. Furthermore, adequate provision of economic infrastructure makes possible a more rapid rate of growth in the future.

Desirable though the investment in economic infrastructure, the provision of such services does not appeal to the private investors. This lack of response is due mainly to three main characteristics of investment in infrastructure which distinguishes them from investment in general. These characteristics are, the long gestation period, the lumpiness, and the high degree of risk and uncertainty. Because the marginal social benefits are so much in excess of marginal private benefits, government's have normally provided this economic overhead capital.

All African countries are aware of the importance of economic overhead capital and have devoted much of their planned investment to this sector. Table II shows the distribution of government capital expenditure in some African countries. Although some of the figures seem now outdated, nevertheless it is unmistakably clear that all the countries lay emphasis on the development of transport systems. In Nigeria's current Six Year Development Plan, over 40 per cent of planned public investment is devoted to electricity, transport and communications. In Camba, about one third of public investment in the current development plan is devoted
to communications, public works and utilities. Also in Senegal's 1961-64 Development Plan, 33.9 per cent of public investment is devoted to transport and telecommunications. Generally it appears that expenditure on transport, communications, electricity and agricultural services, ranks high in most of the Development Plans of African countries.

The role of economic infrastructure in the development of natural resources may be illustrated by reference to electric power and transport. The development of electric power tends to encourage industrial development and it furthers the development of transportation. For example, given the resource potential of a country, the development of electric power can stimulate the growth of a steel industry, fertilizers factories, minerals and other processing plants. In the Federation of Rhodesia and Nyasaland, increased electricity production has facilitated industrial development. Also the introduction of electricity from the Kariba Dam has furthered the development of transport facilities. In Nigeria, the Niger Dam project which has been described as the cornerstone of the current Six Year Development Plan, is expected to provide electricity at a substantially low cost, thereby stimulating industrial development. In addition, the Dam will further the development of transport, agriculture and fisheries.

Transport is by far the most strategic infrastructure of a developing economy, in addition to the widening of markets, transport also helps to make accessible new resources. In many parts of Africa, good agricultural lands, valuable forests and deposits of minerals are known to exist in abundance. However, because of their inaccessibility, these resources are left unused and potential resources remain unexplored.

The dominating characteristics of African economies is the low level of agricultural productivity and the large share of subsistence production...
in Gross Domestic Product. Agricultural output per head amounts to $40 in Africa compared with $120 in industrialized countries. Also subsistence production as per cent of Gross Domestic Product is between 30 - 50 per cent in most countries. The first step to increase the production of agriculture and to bring the subsistence sector more fully into the exchange economy should be the expansion of the internal transportation system. In any underdeveloped economy the adequacy of the transport infrastructure is likely, to an important degree, determine the maximum rate and pattern of economic growth. The movement of an economy from a subsistence to a cash basis, and the specialization of function depend on reasonably low cost transport.

Table III shows available transport facilities in selected African countries. The provision of transport facilities has in the past been geared to the development of foreign trade and the exploitation of minerals. The rural areas have in most cases been inadequately provided with transport facilities. For the development of agricultural sectors, the widening of the base of a money economy, the road network needs to be extended into every part of the country before much attention is paid to improvement of existing roads.

No less important than the provision of transport facilities, is the provision of technical services. Knowledge of the natural resources of most African countries is scanty. Resource survey and research constitutes an important type of service which may bring to light substantially larger resources than were previously known. In Nigeria, over £1 million is set aside in the current plan for a nation-wide survey of the country's mineral and water resources.
Although investment in infrastructure is a major precondition for a successful take-off, a high share of infrastructure in total investment inevitably retards the growth of the economy in the short-run.

Furthermore, an unco-ordinated plan of infrastructure development may have adverse repercussions in the long run. It is very difficult to generalize on the proportion of public investment which should be devoted to basic economic infrastructure. Owing to differences in the stages of development, the desirable pattern of public investment will necessarily differ among AFRICAN countries. In some countries expansion of basic economic facilities may be more urgent than investment in directly productive activities such as agriculture; manufacturing-industry, etc. This is usually the case in countries at the lowest level of development where the major bottleneck is the lack of basic facilities. In such a case the creation of basic facilities is necessary before investment in directly productive activities can yield fruits. Here public expenditure programmes should necessarily be biased in favour of infrastructure.

Once a country has passed this stage of development the danger of further concentration on infrastructure at the expense of investment in directly productive sectors may arise. The external economies argument in favour of heavy investment in infrastructure presupposes that the major bottleneck in the development of directly productive sectors is the lack of basic economic facilities. This is true only where private enterprise, adequate market organisation, and sufficient final demand exist, so that investment in directly productive sectors will expand as soon as the basic facilities are provided. Where a large volume of private investment was forthcoming as for instance for mining in Rhodesia and rubber growing in Liberia, investment in the infrastructure is one of the major factors in prosperity. Often, however, investment in the infrastructure has not been.../...
matched by parallel investment in productive sectors, simply because the necessary elements which stimulate directly productive investment are lacking and as a result excess investment in infrastructure results in idle capacity and waste of resources. In Uganda for example, the Owen Falls hydro-electric station was built in the hope that the availability of cheap electricity would attract secondary industry. The project facilitated the establishment of industries for which the other establishment factors were already favourable, but it did not have the impact expected, and there is still surplus capacity.

In French West Africa, independence has itself resulted in some surplus capacity. Thus heavy investments in the capital cities of the former French Equatorial and West African Federations were designed to serve the whole of the Federations. Independence of the constituent territories had led to similar types of investment being carried out in each territory, with the result that idely capacity has developed in former federal capitals.

The share of investment to be devoted to infrastructure is a difficult problem, depending on unforeseen political, technical or economic developments. The problem is how to obtain the optimum combination of productive and infrastructure investment. An accurate assessment of the demand for basic facilities based on the growth of the directly productive activities should, as far as possible, be the criterion for determining the proportion of public investment in infrastructure.
III. The Mobilisation of Internal Financial Resources

It has become axiomatic to attribute the low level of productivity in underdeveloped countries to the lack of capital and also to attribute the lack of capital to the narrow margin of savings resulting from low productivity. According to this vicious circle argument, foreign capital is needed to break the vicious circle without unduly restricting the present consumption of the masses which by ordinary standards is already low.

This argument however neglects certain fundamental facts. First it ignores the fact that the bulk of domestic savings is, in the absence of adequate mobilising agencies channelled to sectors which are not conducive to rapid economic growth. Secondly it ignores the fact that the effectiveness of foreign capital depends on the absorptive capacity of the recipient country. Thirdly it ignores the fact that without resorting to strict austerity measures, there is always, in existing African countries, some of the extravagant living among the upper income class group can certainly be reduced as can some of the prestige investments of the governments. Accessibility to foreign capital is not a guarantee for rapid economic growth. A rapid growth requires expansion in the rate of domestic saving as well as a refinement of the mechanism that allocates savings.

There is no sufficient data on domestic savings in African countries to permit any rigorous analysis of the structure, composition and destination of savings. Such an analysis would be possible if direct estimates of savings were available. However, certain characteristics and trends of domestic savings in most African countries appear to be evident.

Up till the late fifties, domestic savings were the largest...
single source of investible resources in most African countries. The situation is however different in French African countries where the largest single source had been grants and loans from the metropolitan country. Domestic savings consisted largely of public savings in various forms such as budgetary surpluses, savings of public and semi-public bodies and property income of governments, and in the private sector of retained profits and depreciation allowances of private funds and corporations. Private household savings have been of little significance, because of the low level of per capita income.

Until recently, most African countries, with the exception of French territories, were able to finance a large part of their investment programme from public savings. In Nigeria, for example, more than 85 per cent of the £300 million of public investment in 1955-62 was financed without recourse to foreign assistance — from current budget surpluses (34% of total public investment), surpluses of marketing boards (22%), earnings of stationary corporations (11%), domestic borrowing (9%), and use of surpluses accumulated in earlier years (10%).

Recently, however, the relative contribution of public saving, in particular, and domestic saving in general, to the finance of capital formation has fallen. The principal reason for this is that rising government recurrent expenditure is making it extremely difficult to achieve current budget surpluses. (See Table IV). The problem of mounting recurrent expenditure has arisen from the increase in recurrent expenditure due to capital expenditure on social overhead capital in earlier development plans. This problem has been accentuated by the new responsibilities resulting from independence. The magnitude of the problem is indicated by the Nigerian figures. Government consumption as a percentage of gross domestic product rose from 31/2 per cent to 71/2 per cent between 1950 and 1960. It is estimated that between 1960-61 and 1967-68, government consumption, after allowing
for underspending of 5 per cent will rise by almost 104%.

The failure of revenue to keep pace with both current and total expenditure, is a common problem in most African countries. A major contributing factor to this is the unfavourable export developments. In most African countries export trade is the main determinant of public revenue. Even where import duties are the main source of revenue the volume of imports is determined by the level of exports. Due to the unfavourable world market conditions there has been a decline in the relative contribution of customs duties to total revenue. Moreover, in countries where marketing boards have been an important source of finance, the decline in export-prices has made it difficult for the boards to generate surpluses to the same extent as in the past. The combination of all these forces has lead to the decline in the relative importance of public savings.

In the private sector, however, it can be said in general that the trend has been somewhat opposite. The proportion of Gross Domestic Product devoted to private consumption may be taken roughly as an indication of the growth of private savings. This ratio has in most countries shown an upward trend. In Nigeria, for example, the proportion of the Gross Domestic Product devoted to private consumption remained at about 87 per cent between 1950-57 but has since fallen to 84 per cent. The decline has been much more marked in Ghana.

It is very difficult to estimate the relative importance of household and the corporate sectors in total private savings. It appears however that a large part of the investible resources in the private sector has been supplied by domestic corporate savings in the form of ploughed back profits, amortization provision, reserve funds and the like. The relative .../...
importance of this source has varied between African countries due to the size variations in the corporate sector. Household saving has not been of great importance. Even the limited personal savings of individuals has been channelled into residential estates, land, road transport and trade.

Given the above trend, what scope exists for increasing domestic savings. It has been indicated that in most African countries there has been a rapid rise in government expenditure and that the growth of revenue has lagged behind this rise in expenditure. This gap between receipts and expenditure is expected to be large in most countries in the foreseeable future. To cope with this situation, governments have either to increase receipts by taxation or to cut down expenditure, whether recurrent or capital. In view of the vital necessity of economic development and of the generally limited scope for reductions in current expenditure, there is a pressing need to increase resources by taxation. Increased taxation is necessary both to reduce the purchasing power in the hands of those who are taxed and also as an effective measure against inflation. In African countries, there is a very considerable evasion of taxes of all types. A first major exercise to increase revenue is a determined drive to prevent evasion. Also the yield existing taxes can be increased by better collection. In view of the great reliance on custom duties and the relative ease of collection, a revision of existing rates of duties especially on luxuries and semi-luxuries may produce both a more appropriate import structure and an increase in government revenue. The scope for excise taxes is limited by the limited volume of domestic output of manufactured goods. However in the long run this may become a major source of revenue. Indeed the gradual replacement of imports with locally manufactured goods offers scope for an increase in the relative contribution of this form of taxation as import duties decline in importance. It should be possible to counteract the fall in the yield of import duties by a corresponding increase in the yield of excise taxes without too much fear of loss of incentive.
On the expenditure side there is obviously a large scope for reduction in recurrent expenditure. There is need for restraint in government spending so as to avoid waste and duplication. Unfortunately many African governments merely pay lip service to austerity.

The appropriateness and effectiveness of measures designed to increase public savings will vary between countries. For example in some countries the political pressures for a rapid expansion of social services may be too difficult to resist in spite of the implications on the growth of recurrent expenditures. Again the scope for the increase in revenue, say by increasing the yield of revenue from custom duties may be limited (see for example Nigeria's Federal Government Development Programme: First Progress Report, page 50). It is difficult to generalise on details. But the broad conclusion is that greater scope than it is generally realised exist for increasing public savings by reducing current expenditure and increasing recurrent revenues.

Despite these measures, governments might find it difficult to avoid deficit financing. This is already taking place in some African countries. In certain circumstances deficit financing need not be inflationary. The scope for deficit financing is however limited in African countries by the inelasticity of supply schedules of productive factors. The extent to which individual African countries can depend on deficit financing will be determined by such factors as the size of foreign exchange reserves, the sensitivity of the cost and price structure and of imports and exports, the speed with which particular projects would lead to increased production, and the efficiency of the monetary and fiscal weapons available for limiting private expenditure.
AUGMENTATION AND IMPROVEMENT OF RESOURCES

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