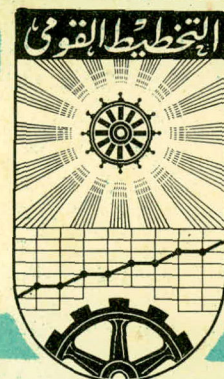


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2:1 SOCIAL CHANGE AND GROWTH

THE PLACE OF AGRICULTURE IN ECONOMIC
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TO TRANSITION FROM SUBSISTENCE TO CO-
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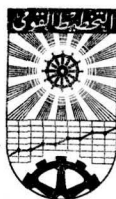
by

Dr. R.N. PODUVAL

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Specialised Course

MANPOWER and EDUCATIONAL PLANNING IN ECONOMIC DEVELOPMENT

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DR. R. N. PODUVAL

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1. Agriculture dominates the economies of the countries of Africa as in other less developed countries. The contribution of agriculture to the gross domestic product in most African countries is 60 to 65 percent;* agriculture provides livelihood to the bulk of the population (the active population engaged in agriculture varies from 90 percent in Ethiopia to 63 percent in UAR) and it is the main source of export earnings (share of agricultural exports in total export earnings is as much as 95-98 percent in Sudan, 90 percent in Uganda, 86 percent in Nigeria, 79 percent in Tanganyika and 76 percent in U.A.R.). Economic development hinges largely on the development of agriculture which has not only to provide food for human consumption and raw material for industry but also the resources for development by export expansion and import-substitution.
 2. Since we are concerned with the growth process, it is interesting to examine some of the changes taking place in the agricultural economy in the process of economic development. An essential aspect of the process of economic development is the transition from subsistence to commercial farming. With progress in economic development, the share of subsistence production tends to become smaller and the share of market production tends to increase. This is brought about mainly by the need for larger production for the market. The early stage of economic development is nearly always characterised by a rapid growth of population. In most of the countries of Africa, the rate of increase in population has been generally high, ranging between 2 and 3 percent per annum. Much more striking has been the increase in urban population. In U.A.R. during the period 1937-1957 while the total population increased by 45 percent, the population in cities over 100 thousand, increased by about 152 percent, representing an average increase of about 7.5 percent per annum. In the majority of the African countries, the rate of increase in urban population is probably in the range of 3 to 5 percent per year. This disproportionately rapid growth of urban population necessitates an expanding production for the urban consumer or for the market. Besides urbanisation, the increase in income consequent on increased economic activity leads to higher demand for food and other essential commodities. In the developing countries, the income-elasticity of demand for food articles (measuring the percentage
- * In Congo (Leopoldville), Kenya, Morocco, Tunisia and U.A.R., the contribution of agriculture to gross domestic product is less, ranging between 31 to 42 percent.

increase in food expenditure resulting from a 1 percent rise in per caput income) is quite substantial. FAO estimates for Africa indicate that it is of the order of 0.6 as compared to 0.16 for North America. Reliable estimates of income-elasticity are lacking for most of the countries in Africa. The income-expenditure survey conducted in Wadi Halfa in Sudan indicates that the income-elasticity of demand for cereals (wheat) in Wadi Halfa Town area is of the order of 0.8, which means that a 10 percent in income is likely to be associated with an 8 percent increase in the demand for cereals. The combined effect of population increase especially the urban population and income-elasticity of demand is the requirement of substantially larger production for the market.^{1/}

3. This cannot be brought about without marked changes in the system of agricultural production. It is usual to distinguish between the traditional and modern sector of agriculture in African countries; the former producing primarily for subsistence and the latter for the market, especially the export market. Some estimates have been made of the proportion of subsistence production to total agricultural production to total agricultural production in some of the countries of Africa. The percentage of subsistence production to total value of agricultural production (crop and livestock together) varies between 82 percent in Ethiopia, 76 percent in Northern Rhodesia, 62 percent in Nyasaland, 59 percent in Tanganyika and 20 percent in Southern Rhodesia.^{2/} If we exclude the production of European farmers, the range is estimated to be between 40 to 90 percent. An attempt was made in Sudan during the national income enquiry relating to 1955/56; to estimate the share of subsistence transactions in the consumption expenditure both for the country as a whole and for the regions. For the country as a whole, the estimate was 38 percent, while for the region comprising Equatoria, Upper Nile and Bahr El Ghazal Provinces, it was as much as 82 percent. There is of course considerable overlapping between production for the market and subsistence production. In most of the countries there is a combination of production of cash crops and of food partly for the market and partly for own consumption.

^{1/} On the consumption of a 2.5 percent annual increase in population, 2.8 percent annual increase in per caput income and income elasticity of 0.6, for Africa, the FAO study on Agricultural Commodity Projections for 1970 has estimated the total annual percent increase in demand for food in 1970 as 4.1 (2.5 percent due to annual increase in population plus 1.6 percent due to annual increase in incomes derived by multiplying the annual increase in per caput income by the coefficient of income-elasticity.) This means that the African countries have to increase food supplies by over 4 percent annually.

^{2/} These figures are taken from the paper on Transition from Subsistence to Market Agriculture in Africa by Mr. K. C. Abercrombie, FAO, to be contributed to the forthcoming FAO/ECA Expert Meeting on Government Measures to Promote the Transition from Subsistence to Market Agriculture in Africa. I am greatly indebted to this paper.

4. The rapid increase in urban demand for marketed supplies of such commodities as grain, milk, fruit, vegetables, oil seeds, etc. involves the progressive bringing of the subsistence farmers into the market economy. This is by no means easy especially in the conditions of Africa. Adequate provision of transport facilities which is lacking in most countries of Africa constitutes as essential requisite. Whereas in Uganda, transport facilities have been developed, (particularly road transport) production for the market is also higher. Where, on the other hand, transport facilities have been inadequate or woefully lacking as in Southern Sudan for instance, the share of subsistence production is higher. Transport facilities not only bring about greater movement of goods but movement of persons as well; the latter results in urban contact and thus makes the farmer market-oriented. Provision of organized marketing facilities, like storage and facilities for regular sale which in the past has been provided mainly for export products, has to be extended to products for domestic consumption as well. Changes in land tenure are sometimes important as in the case of Kenya and Southern Rhodesia, land consolidation and farm development in the former and introduction of individual land tenure in the latter have paved the way for the development of market agriculture. Provision of adequate incentives to the farmer in the form of price incentives is an important factor tending to increase the flow of marketed supplies as is evident in respect of production for export. Further, the resettlement of the nomadic population which in some countries, like Sudan, Somalia and Libya form by no means an insignificant part of the total population, may be expected to increase the flow of supplies to the market whereas at present the nomadic population is largely outside the market economy.

5. There has been some evidence of a gradual reduction in the proportion of agricultural production for subsistence, particularly in such countries as Kenya and Southern Rhodesia. The percentage of subsistence production to total value of agricultural production has declined from an average of 61 percent (average for 1954-57) in Kenya to 57 percent (average of 1958-61) and in Southern Rhodesia from 29 to 24 percent (average 1958-60)^{1/}. A decrease in subsistence production means a greater part of the output is produced for the market. With economic development, this tendency will tend to be accelerated. But as the process of development has been slow, marketed supplies in many countries of Africa have not kept pace with the increased urban demand, as is indicated by the sharp increase in food imports in recent years, which is pronounced in such countries as Ghana, Liberia, Libya, Nigeria and UAR.

6. The transition from subsistence to market agriculture has important implications. Trained manpower of various categories is required for the organisation of marketing services, to handle transport, storage, processing and distribution of farm products to the urban centres. Education can also play a part in speeding up the process of transition from subsistence farming to commercial agriculture by spreading primary and adult education in rural areas and thereby opening out new vistas to the rural people.

^{1/} Paper on Transition from Subsistence to Market Agriculture in Africa cited previously.

7. Another feature of economic development is the transformation of the economic structure. The less developed countries have a clearly defined employment structure, the greater part of the economically active population being engaged in agriculture and related rural activities. In almost all countries of Africa, the proportion, as mentioned earlier, is between 60 to 90 percent. In other words, the greater part of the active population is needed to produce the minimum requirements of living and only a small part is available for non-farm activities. In developed countries on the other hand, only a small part of the population is engaged in agriculture, 10 to 15 percent. Mr. H. W. Singer states that "an underdeveloped country may be defined as a country with 80% of its people in agriculture and a developed country as one with only 15% of its employment in agriculture, in both cases give or take a little according to foreign trade"^{1/}. Following Mr. Arthuv Lewis who defined the process of economic growth as the problem of transforming a country from a 5 percent saver to a 15 percent saver, Mr. Singer defines the process "as one of transforming a country from an 80% farmer to a 15% farmer." In an 80% farmer economy the surplus product of 80% engaged in agriculture feeds only 20% in other occupations, whereas in a 15% farmer economy, the 15% engaged in agriculture has to produce enough for themselves and for the 85% outside agriculture. It has been said that in the United States one farm family feeds 20 non-farm families. This is possible only with a rapid increase in labour productivity in agriculture. It has been estimated that in the United States, Argentina and state farms of USSR, 1-2 hrs. of labour time under conditions of extensive cultivation are sufficient to produce 100 kgs. of wheat, barley or rice, while some 4-5 hrs. are required in most of the Western European countries and in some of the less developed countries as much as 30-50 hrs.^{2/} The increase in labour productivity in agriculture not only enables more non-farm families to be supported but also facilitates the shift of labour from agriculture to other economic sectors by reducing the labour input required per unit of output. In the early stages of development, rise in labour productivity no doubt takes the form of reduction in agricultural unemployment or under-employment and an increase in the number of hours or days of work. In later stages, the main increase comes from a larger output per man hour. Improved agricultural productivity, whether by expansion of cultivated area or by adoption of intensive techniques, plays a crucial role in economic growth both by increasing farm incomes and by paving the way for the gradual decline in the percentage of labour force engaged in agriculture. Indeed, it is an empirical fact that economic development has been accompanied by a decline in the labour force in agriculture.

^{1/} The concept of balanced growth in economic development. Theory and practice by H. W. Singer: Malayan Economic Review, Vol. III, No. 2, October 1958.

^{2/} The State of Food and Agriculture 1963, F.A.O., Page 113.

8. Now, in order for one farm family to produce for 20 non-farm families, there must be 20 non-farm families to be supported. In other words, the non-farm sector must expand. An expanding urban market is essential for increase in agricultural productivity. With 80 percent farm employment, there are 4 families in agriculture to one outside; an average, therefore, each farm family has for its domestic market 1.25 families, itself and one-quarter of non-farm family. This domestic market is doubled when farm employment is reduced from 80% to 40 percent. Looked at from another

The following table is reproduced from The State of Food and Agriculture 1963 (Page 131) indicating the relative size of the domestic market at progressive stages of economic development.

<u>Percentage of labour force in agriculture</u>	<u>No. of families to each farm- family</u>	<u>Percentage increase in potential domes- tic market</u>
(1)	(2) 100/(1)	(3)
80	1.25	-
70	1.43	14
60	1.67	17
50	2.00	20
40	2.50	25
30	3.33	33
20	5.00	50
10	10.00	100

standpoint, the non-farm sector must expand to provide job opportunities to the farm population. Even a fall in agricultural population from 80 to 70 percent implies an increase of 50% of non-agricultural population. With a fall in agricultural population from 80 to 40%, the non-agricultural population must increase threefold from 20 to 60%. This shift of manpower from agricultural to non-agricultural occupations depends on a rapid growth of secondary and tertiary sectors. The rate of absorption of labour force from agriculture may be said to be dependent on three factors:-

- 1) Rate of population growth: We have seen that this is high in countries of Africa. A high rate of population growth creates more difficulties for the shift of labour force from agriculture to other occupations. The non-agricultural sector must at least be able to absorb the annual natural increase in farm labour force, otherwise, the agricultural labour force will continue to grow in absolute numbers and result in lower productivity per man. For some countries of Africa with scope for horizontal expansion of production, decline in productivity can be staved off for the time being by extending the area cultivated. But for other countries, like U.A.R., where there is already pressure of population on land, the growth in absolute numbers of the farm labour force will result in still lower productivity per man.

- 2) The rate of expansion of non-agricultural sector and its original size: A fast rate of growth of non-farm sector is of the greatest importance for agriculture. Hence the emphasis on industrial development and on investment in infrastructure in the development plans of most of the developing countries. But as in many of the less developed countries, there is still a large agricultural population, it would require very rapid rates of industrialization to absorb all the annual population increase in other industries and even more to reduce the existing surplus in agriculture. The point at which agricultural population can be expected to start declining is said to be when non-agricultural employment increases more than twice as rapidly as the total population. "The decline would take place close to 50:50 ratio if the non-agricultural population consistently increased twice as fast as the total population."^{1/} This would take quite a long time in the less developed countries where not only is the weight of the farm sector heavy but also the development of the non-farm sector is so slow.
- 3) The technique of production: If industry becomes more capital-intensive and therefore requires less labour per unit of output, the tendency to absorb labour from agriculture will be retarded. Labour-intensive methods on the other hand would contribute more towards absorption of agricultural labour force. Hence the emphasis in the development plans of countries like India on encouragement of cottage and small scale industries. Some of the methods followed are reservation of spheres of production for cottage industries, levy of excise duties on large scale manufactures to improve the competitive position of the small producer etc.

9. The possibilities of utilizing unemployed or under-employed rural manpower for such labour-intensive works as road building, minor irrigation works, soil conservation etc., are now receiving increasing attention both for fuller use of rural man-power and for accelerating the movement of manpower out of agriculture. Such projects could be organized during the off-season. The adoption of these labour-intensive projects is also facilitated by the availability of surplus foods in some of the developed countries and their channelling through the World Food Program sponsored by the United Nations and F.A.O.

10. Since increase in agricultural productivity, as we have seen, is crucial for economic growth, education and training for achieving higher levels of agricultural output and productivity assume increasing importance in all developing countries. Most of them are faced with a shortage of agricultural personnel of all categories, technical as well as professional and administrative needed for implementation of agricultural development programmes. Educational planning involves a forward appraisal of the demand for such personnel at different stages and phases of agricultural development and making arrangements for education and training well in advance. Equally necessary is a careful survey of trained manpower resources so that the gap between demand and supply could be ascertained and measures taken to bridge or narrow the gap. Educational and manpower planning is thus an integral part of any over-all development planning.

^{1/} The share of Agriculture in a Growing Population by F. Dovring, F.A.O. Monthly Bulletin of Agricultural Economics and Statistics: August/September 1959.