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# OBSTACLES TO AGRICULTURAL DEVELOPMENT IN UNDERDEVELOPED COUNTRIES IN AFRICA

by

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# Obstacles to agricultural development in Underdeveloped Countries in Africa

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I have been asked to speak tonight on Obstacles to Agricultural Development in Underdeveloped Countries, and shall try to give you the results of my observations and experience in Africa over a number of years. I shall certainly say a good many things which are not new to you at all, but I hope that we may afterwards have a discussion in which you can ask questions about different points which we may then examine together.

The first question which Africans always ask when you talk to them about Israel, and which I asked myself (this is my first visit to Israel) before I came here, is "what are the points of similarity and the points of difference between Israel and the tropical countries." In this talk I shall stress rather the points of difference and develop from them the principal obstacles to agricultural development as I see them. I shall omit the obvious differences of soil and climate between Israel and the tropical regions.

The first main difference is that you are dealing, here, with a population which was uprooted or has come from some other country

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and, therefore, is not fixed in its agricultural habits and agricultural calendars. This is an extremely important point of view for us who are dealing with populations which are fixed in this way, or with what we call "closed societies". A typical example of these are the cattle peoples of East Africa or West Africa - the Fulani in West Africa and the Masai in East Africa - who are living in a symbiosis with their cattle and their ecological surroundings. It is extremely difficult to produce the slightest change among those peoples because any variation will mean upsetting this equilibrium which has been established over hundreds, or perhaps thousand, of years. Agricultural populations are slightly more "open", but even so, they tend to be fixed in their ancestral habits ... especially their ancestral technology.

The second point of difference is, that in Africa we have very considerable land tenure problems. By land tenure problems I do not mean alienation of land or European occupation of land; I mean that tradition and custom has fixed the African in certain habits of land tenure, or in certain attitudes to land tenure, which are extremely difficult to change. This is important, as we shall see when we come to the question of conservation of soil, water and vegetation. It is very difficult for a African government to impose soil, water and vegetation conservation on Africans in the present state of customary land use. In Israel you have a far more favorable situation where, if I am not mistaken, the land is the patrimony of the State and the use of the land here is subject to rules of <u>good</u> land use.

The third point of difference between tropical countries and Israel is the influence of marketing problems on production. By this I mean that the African has to sell his produce to middlemen, to foreign companies, to a whole marketing structure in which there is no social justice whatsoever. Now this is, in my opinion, a major obstacle to development. In Israel this problem has been largely overcome by the organization of co-operatives and marketing boards, so that the marketing of agricultural products is almost entirely removed from the private sector.

These are, then, the three important differences between Israel and tropical countries: the lack of resistance to change representa1 by traditional technology; the system of land tenure; and the marketing structures.

I think you will agree that the aim of agricultural development is to increase and diversify agricultural production and, by definition, consumption. I insert "consumption" because many people look upon agricultural development as a technical process... and they forget that it is also an economic process; the best definiion that one can give of an underdeveloped country is perhaps a country in which there is under-production, under-consumption and absence of an exchange economy. The imprtance of internal exchange is often neglected by planners who state that they only have to increase their exports and they will automatically raise the standard of living. However, increasing the exports may have very little effect on the per capita income, and figures have been quoted by some

economists [1] for countries like Burma, Malaya and Indonesia between the years 1900 and 1940 showing that although exports increased many times over, per capita income remained about the same. I think the example of Japan is sufficient to show us that the increase in internal exchanges has been a major factor in the development of that country. There have been others, of course, but I believe that the relation between increased production and the development of trade between one part of the country and another is too often overlooked by planners.

Now I should like to divide the obstacles to the development of production and consumption into two categories: technical and economic. First of all, we may examine the technical obstacles to increased production, and once again, I apologize for talking about things which are very simple and very evident to you all. However I think it may be useful to list them.

The first factor, of course, is that of soil fertility. Our basic problem in tropical countries is that of maintaining and increasing soil fertility per unit area. Sir Joseph Hutchinson, who was Director of the Empire Cotton-growing Station at Namulonge, Uganda, and who is now, I think, Professor of Agriculture at Cambridge University, has said: "In my opinion, the greatest single problem of Africa is the shortage of combined nitrogen in the soil."

(1) Professor Hla MYINT and Gunnar MYRDAL.

I think this is evident if you look at the history of agriculture in Europe. We know that the soils in Northern Europe are by no means uniformly fertile; that they were, in many cases, heavily leached, badly drained... and that they have been improved over a great many years so that the very long fallows of the Middle Ages and the three-field system in more recent years have been eliminated.

In tropical countries we have not solved the basic problem of agriculture, which is to enable a family to stay on one piece of ground, put up its buildings, and maintain and increase the fertility of its three hectares or five hectares. That problem has not yet been solved... as it was not solved in Europe in the Middle Ages, when cropping systems depended on long fallows and wasteful land use. At that time there was no pressure of production on the land in Europe, and in the limited trading areas no great increase in production could have been sold.

Why has the problem not been solved in Africa: The results of research give many indications, but owing to the very considerable diversity of tropical soils we are very far from any general solutions. The basic nature of the problem is in the nature of tropical soils themselves. Tropical soils are of many kinds, and thus present varying problems in cultivation. Zonal soil groups corresponding to the humid tropics are represented by deep, freely drained profiles, containing no primary minerals except quartz, iron and aluminium oxides, and with kaolinite as

the dominant or exclusive clay mineral. The base-exchange capacity is low, and the soil solution very diluted.

It is likely that at least in some of the regions where the rain forest is now the climatic climax, similar vegetation has existed uninterrupted since a very remote geological period. Therefore, the Rain Forest of Africa is a very old formation which has experienced contraction and expansion of its northern and southern limits over a very long geological period. Soil formation has therefore occured over an immense space of time, and soils which may be derived from different parent rocks are often similar in appearance and share certain important characteristics. In color they are often bright red or yellow, with undifferentiated profiles, deficient in bases and plant nutrients in general, stable and inert from a soil chemical point of view - end products of the soil-forming process.

The red soils of the tropics or latosols (in the US terminology) which are found far outside the rain forest, are also strongly weathered and highly leached. By temperate standards regions they are low in all plant nutrients, and although rich in clay, the clays are less active than those of soils in the temperate regions, having low cation-exchange and high phosphate-fixing capacities.

The most simple definition of the process of laterisation is one in which silica is leached out, and sesquioxides of iron and aluminum, together with a certain amount of quartz, remain.

Now the other types are the types of soil that you will find

in the Sahel, or the dry area bordering the Sahara on the north, and the Kalahari on the south. I am talking of Africa because it is the area that I know; I cannot speak of Latin America, or Australia, although I know that similar soil types do occur in those areas. The Sahel is used principally as an exclusive grazing area and its soils (Serozems and red desert soils) are of little immediate importance for cultivation. Visible soil erosion of these areas is often preceded and sometimes replaced by deterioration in composition or structure of the surface layer of the soils, by removal or modification of colloidal elements of the soil which leaves a finely sandy or silt-like surface over a more-or-less featureless and compact horizon. This break-down of structure and subsequent compaction lends itself to surface wash and erosion.

In Africa we have four major river basins; the Nile, the Congo, the Zambesi and the Niger. It is interesting to note, from an historical point of view, that although in the Far East - and the Near East - great civilisations grew up in the great river basins: the Ganges, the Brahmaputra, the Yellow River in China, the Euphrates, Tigris and the Nile up to the fourth cataract, when the Nile ceases to become a Near Eastern river and becomes an African river - this is not the case in Africa. In fact, the earliest inhabitants in Africa, from what little archaeological remains we have, seem to have had in the Savannah area. The excavations in East Africa, particularly in the Olduvai Gorge in Kenya, where the earliest fossil human remains have been found,

dating back roughly 600,000 years, are these of a hunter in Savannah country - living like the bushmen of the Southern Kalahari today. There would appear to be only two aboriginal races, if we can call them such, in Africa today - the bushman in the Savannah and the Pigmy in the Congo forest.

As far as we can see from very scanty archaeological evidence the great river valleys in Africa have not been the site of intense human occupation as in other regions. Now this is for a number of reasons. The first, of course, is soil. In the Indian subcontinent there is a very large alluvial belt running over the north of the country from the Indus to the Ganges and the Brahmaputra. That belt certainly contains more alluvium then there is in the whole of Africa - although the total area of the Indian subcontinent is considerably smaller than Africa.

The other reasons are lack of control of water, diseases, wild animals etc.; however the main reason, probably, is the lack of alluvial soils, which are in Africa of quite limited extent.

Another important soil type are the heavy clays. Dark-gray and black soils which go under a wide variety of local names, such as tropical black clays, black cotton soils, Regur (in India) and "cracking clays". Although of small extent these soils are of great importance locally and are the scene of a number of development schemes. They have a very high clay content

and a poor structure, and cannot usually be cultivated by primitive tools.

Then we have also a series of tropical, high-altitude soils which are rare; the areas of tropical high altitude are limited to the Futa Djallon in Guinea, the Adamawa in Cameroun, Ruanda-Urundi and the Kenya Higlands, and Basutoland in the southern part of Africa (which is strictly out of the tropical region). Those are often very fertile soils of high potential, as their development in Kenya has shown.

I think that is sufficient to show the very wide variety of types of soils we have in tropical regions... and I have not nearly exhausted the regions - I have said nothing about the Catena formation often seen in East Africa, - a certain sequence of soil profiles from the tops of the mountains to the valleys where you have a series of different soils practically like a Neapolitan ice-cream; I have said nothing about the salty soils or about the littoral plains which are being used more and more for rice cultivation in West Africa.

However, I would like to get back to the chemical characteristics of tropical soils which themselves are responsible for this lack of control over fertility: the first is their inertness from the chemical point of view - the lack of exchangeable bases, the lack of easily assimilable plant nutrients; the second is that they do not always respond to chemical fertilizers in the way one might expect - they may even respond in a negative manner... in

adding phosphorus insoluble phosphoruses may be produced. Phosphate fixation in tropical soils is to a large extent due to the formation of insoluble compounds of iron and aluminum at the pH prevailing in these soils; thus, the most widespread deficiency in tropical soils is that of phosphorus.

There are many reasons - climatic, chemical and biological for the difficulties encountered in utilizing tropical soils, but I will come now to what is often considered to be a major factor. We know that the vegetation of Africa has been completely transformed by man except in the comparatively small area occupied by the rain forest. Over the major part of the dry, deciduous forest, the Sahel (which is mainly an Acacia-grass association) and the great areas covered by the Brachystegia- Isoberlinia association, called Miombo, in Central Africa an the areas of open forest which cover most of Rhodesia, Katanga and parts of Tanganyika. The vegetation has been transformed by man. All that area is a fire climax. Man has been burning the forest in Africa certainly for more than 10,000 years - perhaps for 50,000 years - and he has produced a fire climax, which has had a very profound influence on the soil.

In the rain forest, the soil and the vegetation form a closed cycle. In the rain forest which has an annual rainfall of over 3,000 mm. there is never a leafless period; all trees in tropical rain forests will lose their leaves during the year, but there is never a period when practically all the trees are leafless. Flying over the tropical rain forest, one sees some bare trees, others in

flower, others in full leaf and others in part leaf. In the rain forest, the vegetable matter of leaves and dry twigs is constantly falling to the ground. However, on the ground one does not find an organic litter - the "mor" or "mull" of the northern temperate regions. There is, instead, a very thin layer of dried leaves. Even fallen tree-trunks are rapidly broken up by the macro-fauna-termites and other insects, followed by bacteria, protozoa and fungi.

Trees in tropical rain forests are usually shallow-rooted. The enormous trees with the buttresses that one sees on pictures of the tropical forest - appear to use these as a physical support, very largely.

This closed cycle exists also outside the tropical rain forest in the dry deciduous forest where the clearing and burning of the natural vegetation cover of tropical soils leads to a very rapid decrease of organic matter content, especially those fractions which ensure a constant supply of nutrients ( N-P ) to the growing plant. In the forest there is an inital attack of large woody residues by the macro-fauna, followed by total decomposition by micro-organisms of which cellulose-decomposing and ammonia-producing bacteria are the most numerous. In areas with a definite dry season the activity of soil micro-organisms inceases considerably at the onset of the rainy season. Although in the rain forest a large proportion of the trees and shrubs are legumes or related families, it is exceptional to observe effective nodulation on

forest plants. Also, among soil micro-organisms there are normally few aerobic nitrogen-fixing bacteria and nitrifiers.

The tropical rain forest or the dry, deciduous forest is destroyed by the shifting cultivator who cuts down the trees, burns and plants in among them either mountain rice, maize , yams, sweet potatoes or cassava. An uprush of fertility occurs, and the capital is all used up . The essence of shifting cultivation is that the store of soil nutrients is used up over one or two years, and then rapidly declines because the closed cycle has been broken. The only way to restore some of this fertility is to allow secondary vegetation to grow on the land for ten, fifteen or twenty years. The cultivator leaves the land for ten, fifteen or twenty years, and then he turns and cuts down the vegetation again. The original forest with the big trees will not have grown up again, but there will be a secondary growth dominated by some species such as Lofira, in West Africa, or Ravenala, in Madagascar. The cultivator cuts this again, will again rapidly use up the store of fertility, which will give him a yield of perhaps 700 kilos of rice per hectare. This will decline rapidly to 400 kilos or less after two years.... and then he will leave it and pass on to new ground.

This outline of the process of shifting cultivation should show that the destruction of the vegetation in Africa has been a major factor, not only in degrading the soils but also in modifying the water regime, which I will now come to. Africa has four major

river basins - the Nile, Niger, Congo and Zambesi - and many smaller ones such as the Orange River, the Rufiji, the Senegal.

In Israel you suffer from a general lack of water; in Africa, water is lacking in some regions but, in many places, there is very adequate water if it is used efficiently. The main problem in Africa is that the water is neither stored nor controlled in any way ... and this is another of the reasons why the big river basins are not occupied: because man has no control over the water supply. The Rufiji, which is a large river in Tanganyika - draining about 25 percent of the land surface of Tanganyika (on which F.A.O. did a very comprehensive water resource survey from 1952 to 1958) - is in a primeval state. It is typical of many river valleys in Africa: there are violent floods, flash floods, seasonal floods - quite out of control the river shifts its course - masses of timber float down and these rivers are enormous and quite uncontrolled with flows of 40,000 to 100,000 cubic meters per second when in flood.

One of the reasons why the rivers are uncontrolled is that their drainage basins are, very often, subject to the progressive destruction of the vegetation cover, particularly in the drier areas. This has had an adverse effect on the water regimes.

Thus we can say that water is itself an obstacle to agricultural development in Africa, when there is no adequate control. Ground water supplies are also comparatively little developed, except for wells for cattle which have been sunk by Europeans

in East and South Africa, and wells which were sunk by the French an British Governments in West Africa in the drier areas - the Sahel, bordering on the Sahara.

Irrigation in Africa is very little known. Where it is known is on the fringe of Africa, which was occupied by people subject to Arab influence, such as Northern Nigeria - Sokoto. Now there, where the people came on the old route from Khartoum to Fort Lamy and across to Dakar (that was an old caravan route), is some garden type of agriculture carried out under irrigation. We know that in East Africa there was at some period - perhaps 2,000 years ago - a people who carried out terraced irrigated agriculture in some areas of Tanganyika which show up on our aerial photos; we do not know who those people were.

There has been irrigation - it has been lost in some places - but, in the main, the African is either a dry farmer... on the more fragile and drier soils - or he is occupying the lowlands just long enough, to get his crop out, before the flood comes down. And then, the whole of the benefit of the water is lost.

There are irrigation schemes in Africa. As you know, there is a major one on the Nile, which is the Gezira Scheme, but there again it is strictly out of Africa by the time it gets to Khartoum. There is a major irrigation scheme on the Niger, the Office du Niger, set up by the French. There are on or two small schemes starting up now in Nigeria; and there is a project on the lower Zambesi, which the Portuguese have studied but not yet put into

operation. But so far we can say that the only two rivers that have been used in any way for irrigation are the Niger and the Nile.

The third factor, which is important as an obstacle to development, is the lack of relationship between agriculture and animal husbandry in Africa. It is possible to classify the peoples of Africa into the cattle people and the agriculturalists:the grain eaters, the root eaters and the cattle people. The cattle people occupy mainly the drier Savannah. That is not to say that the cultivators do not own cattle sometimes, but, in the main, the cultivator keeps his cattle out in the bush and not on the farm. He uses his cattle as a savings bank.

This is a major step which must be taken in the control of soil fertility. In order to be able to fix the population on the land, we must also fix the livestock on the land, so that the cultivator has animal traction and manure... so that he has, in other words, power and a means of increasing soil fertility and all the subsidiary products such as milk, meat etc.

These, then, are some of the reasons for the low yields which are typical of tropical agriculture. It is quite common to have yields of 200 - 300 kgs per hectare for groundnuts, or even maize, and a yield of only 5 to 8 tons per hectare for cassava. The highest experimental yields are many times that - up to 5 tons for maize, and 30 tons for manioc. The gap between present

yields and possible yields is enormous, even in a country like the highlands of Madagascar, where rice is grown in properly irrigated fields and the average yields are only 1.7 tons per hectare; whereas in Japan, the highest experimental yields are said to be 11 tons per hectare.

Agricultural planners seem to neglect, very often, some of the important factors of production. They concentrate on one factor, which may be a large dam of a large irrigation scheme. Large primary irrigation works may be laid down, with little or no secondary or tertiary irrigation. Other important factors of production are often neglected, such as fertilizers, improved seeds, insecticides, tools, and, above all, the marketing structures. A high proportion of the investment in agricultural development in many countries is land and water development on a very large scale. It is much more difficult, of course, to equip the peasant with the factors of production which will make him a more efficient producer. But putting a man with his old tools, his old seed, his old techniques on a large irrigation scheme can often be a complete waste of money and yields remain low in relation to the large investment undertaken.

In many countries there is only one agricultural tool: in the Ruanda-Urundi most operations are carried out with a small curved knife: in Madagascar they have the "angady" (Demarara shovel), which is a very efficient spade, but the only tool they have. And sometimes there is only one in the village.

Another reason for the low yields is the lack of diversification. We have monoculture practically everywhere (due to an inadequate use of land, and lack of adequate due to the material and techniques). The main reason for the lack of diversification is not that the cultivator does not want to grow other crops, but that the land is inadequatelly used. The cultivator has so little control over the factors of production that he cannot diversify. Forage crops are often quite unknown, and when a man has already expended all his energy to obtain 300 kilos of maize per hectare on degraded soil there is not much enthusiasm for diversification and growing another crop.

I would like to discuss the economic obstacles to increased production. First comes land tenure. Land tenure systems seem to me to be vital in obtaining adequate conservation of soil, water and vegetation, which are fundamental to the maintenance of soil fertility. We cannot begin to improve the soil fertility position, to enable the cultivator to remain on a holding, which he can develop, put up buildings and hand on to his son and his grandson, until we have adequate conservation of soil water and vegetation. We cannot do that until we have a rational land tenure system.

At international conferences on land tenure problems there are often delegates who maintain that the problem will be solved by giving a plot of land to every peasant. From the point of view of land use for increased production I think it would be a disaster to give a piece of land to a peasant unreservedly at his present

level of technology. If you give a piece of land to an East African peasant, without at the same time convincing him that he must improve it and conserve it, in a very few years he will be the owner of a little desert, or a gullied piece of hillside... and in ten years there may well be no water, no soil and no vegetation.

This is not a problem to you in Israel, because you have the control over your natural resources. In Paris, if you wish to put up a building in the Avenue Foch you cannot put up a black and white Norman house, or a chalet or a silo, or something like that... you must put up a building which conforms to the rules of the Municipality of Paris: it must be of a certain height, built of certain materials and in a certain way. Nobody thinks of that as an intolerable interference with their liberty..!

In Africa if you impose control of methods of land use so, that the peasant is prevented from plowing up and down the slope, and engaged to cultivate along contours, to moderate a torrent control if a stream passes through his land, and to limit bush fires, it is often felt, that this is an intolerable infringement of his liberty! Now this is something we must fight and I would suggest, as you have many contacts with Africans who come to Israel, that you should bring these facts home to them, because the present low levels of soil fertility are a basic obstacle to production. This situation is probably getting <u>worse</u> every year. The natural resources are running down in many of these tropical

countries; yields are going down; water tables are falling; catchment areas are being eroded; forest are being burned and cut off... and this is creating an extremely serious situation for the future.

What is the relation of land tenure to this question of conservation? First of all, the soil, water and vegetation of one area cannot be considered as the property of any one man to do as he likes with for all time. They are part of the national patrimony: the property of everybody. This should be, I think, something that all leaders in Africa should be aware of.

Land tenure is of three main forms in Africa: traditional right and custom, in which the land is vested in the community and every man in the community has the right to cultivate land - so, that if he goes away and works in the mines for five years in South Africa, he knows that he can come back to his village and cultivate land. This is a form of social security. The second type is the system of land registration instituted by many governments under the colonial era. Africans have registered land which they consider their personal property; which, legally it is. The third type, of course, are the concessions which were given to Europeans.

Land tenure affects production not only from the point of view of conservation. The size of the exploitation is very important. I said earlier that the aim of agricultural production is to increase production, consumption and exchange, but the aim

of agricultural production is also to increase individual per capita income. And that we can do only if we increase the productivity per man, per unit of time, per unit of surface.

We cannot do this if the farm population remains on the same unit of surface: we have to increase the minimum size of the individual holding, we have to reduce not necessarily the total farm population - because in many African countries there is plenty of land available,- but rather increase the amount of land per person, and reduce fairly substantially the percentage of the total population which is engaged in agricultural production. This has been the experience of the United States and other industrial countries when their own industrial revolution takes place. In the French overseas territories agricultural experts at first considered that they should transplant French peasant methods to Africa. But in recent years there has been much criticism of this approach, because in France it is now evident that there is little future for the small peasant proprietor, unless he groups himself into a large unit. In many parts of France today the peasants are grouping themselves into marketing and production associations and are even re-alloting fragmented holdings. There is little future in Africa for the small peasant, with 1/2 or 1/4 hectare, sub-dividing it among his children, and I am sure that there is no need for me to convince you of that.

The lack of alternative employment is a major obstacle in reducing the total number of persons engaged in agriculture. This

is why we must never talk about agricultural development - we must talk about economic development. We cannot develop industry without developing agriculture; we cannot develop agriculture without developing industry. The lack of alternative employment in industry and in services is a major obstacle now to improving the size and efficiency of individual agricultural holdings, because the man who is living at a semi-subsistence level is at least fed on the land. If he is taken off the land and given an alternative employment, agricultural production must be increased, in order to feed the new industrial population. Normally, there is a lag in the increase of agricultural production, so that prices of foodstuffs will tend to rise in the towns....as is already happening in Africa.

I think we are approaching a period in which the rise in internal prices of foodstuffs will create difficulties in many African countries, of which there are signs already. Normally, a price rise does not automatically provoke increased production in these countries. The semi-subsistence producer is not sensitive pro price increases in the way, that a producer, in a monetary economy is sensitive. There may be a time lag of two to five years, before he catches up and he may even never catch up. This is a serious matter, because it means, that the city populations are worse and worse nourished - they spend their money in Coca Cola, tins of sardines and white bread, whereas out in the bush at least they get a maize meal and they eat a

lot of things which do not appear in the textbooks of nutrition experts - locusts, caterpillars, frogs, snails, mice and wild plants of all kinds - which are full of vitamins.

The lack of incentive is another major obstacle and I will return to that in the summing-up. But I would like now to come to the third point. I talked about production and consumption and I then said that another factor of under-development is this lack of exchange. This I think is often underestimated by people who write about underdevelopment. Increased production and increased exports are given as the solution for problems of underdevelopment, but less mention is made of the fact that people have got to exchange or trade among themselves (as well as export) to increase their per capita income and hence their own purchasing power. A healthy economy is one in which there are rising standarts of consumption and this means increasing purchasing power. Look at your Israeli production of fruit and vegetables here in Israel: you exchange it among yourselves; you do export some but the greater part of what you produce is absorbed by your interior exchanges which are constantly increasing as your standard of living rises. The same thing must happen in the African countries. They are hardly producing any fruit or vegetables in most of these countries. The quantities of eggs and poultry are negligible, as are most of the protective foods.

The last, and what I think is the most serious, obstacle of all is the system of marketing of agricultural products. Here

in Israel you are fortunate in not having an entrenched class of tradesmen between the producer and the market. You have fortunately started with a clear slate and you have been able to organize your marketing so, that the agricultural product does not disappear into the private sector. Those advisers who give this advice are not always popular in certain circles in Africa, but I firmly believe, that governments should take measures, to remove out of the private sector, the basic agricultural crops. Not all agricultural products, but the basic food and cashcrops. In Madagascar these are rice, coffee, vanilla, groundnuts and tobacco... for a start. These should be removed right out of reach of private dealing, speculation and price-rigging.

This will stabilize the cost of living; it will stabilize farm incomes, which is extremely important; and it will induce a certain stability in the agricultural sector, which will be reflected in an increased demand for consumer goods, for services and, in other words, provide a basis on which you can build a monetary economy. In the present state of farm incomes in Africa it is often impossible to build such an economy. Farm incomes cannot be estimated from one year to another. There is the anomaly that the developers are urging the peasant all the time to increase his production, and when he does increase it, he cannot sell it. The peasant is often quite willing to produce more, but only, if he can sell it at a price which interests him. Otherwise he makes a greater effort but his income remains the same.

Now, in this process of development, we, the priviliged, the well-fed, are asking the peasant to make a greater effort, we say: "You don't work hard" (He often says the same thing about us) - "You don't work hard, you've got to produce more; it's for the country" ("pour la patrie") and so on. When he does produce more, he can't sell it. Now isn't that the biggest obstacle of the lot?

In the typical colonial economy that has been inherited by newly independent African countries there is an entrenched entrepreneur class, usually foreign; they may be Indian, Chinese, French, English or Syrian. The peasant finds himself faced with a monopoly. He sells his five kilos of coffee to the foreign trader, from whom he also buys all his consumer goods and from whom he also borrows money from time to time. A few months ago I was in a foreigner's store. This store was long and narrow, with a long counter. The peasant entered at one end to sell his coffee, walked along the counter loocking at all the consumer goods and finally came to a little place, where the coffee was weighed in the dark, paid for in a mass of filthy notes, which, as he could not read, and as he was very polite he could not count, so that he did not know what he had been paid. Then, on going out along the counter he saw various things he wanted, so that the proprietor took practically all the money back from hin, and when he got to the door... there was the paraffin - so, he spent his last note on paraffin. Paraffin should cost 30 francs a liter. It is sold in little old tins. A friend of mine got a measure - it is called

a "kapok" in Madagascar - and he sent a number of people to buy a liter of paraffin in a number of these little tins. He found he was not paying 30 francs a liter, but 300 francs a litre.

I know I am presenting the peasant as if he were very innocent and all is the fault of the wicked entrepreneur. It is not entirely so. The peasant produces a product which is of very variable and often low quality. The idea of a standardized product is unknown in these countries. I think we have the two points at which we must attack this problem of marketing. One is the cooperative movement. In Tanganyika all coffee-robusta, and all cotton, is sold through producers' co-operatives, and then to marketing boards which export it. This system works well and, above all, in the interest off the producers. The other point is the Marketing Board. The marketing of a major product is taken right out of the hands of the speculators and private traders and placed in the hands of a government board, in which the private sector can participate but which controls the conditions under which that crop can be sold. It fixes the price; it fixes the quantity, if necessary: it fixes the quality, and organizes the sale.

The question of improved quality standards is fundamental to a system of <u>stable prices</u> for primary commodities. Standardization of agricultural products has a long way to go in Africa. One of the principal problems of the underdeveloped countries is

uncertainity of revenue due to the fluctuation of the prices of their products. Professor Thomas Balogh of Oxford has calculated that all the sums invested in the overseas territories by Britain, France, Belgium and Portugal between 1951 and 1959 were wiped out seven times by fluctuations in the prices of tropical products. In other words: the fluctuation in prices of tropical products lost to the countries seven times what they received in overseas aid between 1951 and 1959.

Now, my conclusion is, that at present the incentive to development is lacking in many of underdeveloped countries. We are telling these countries to develop themselves; we are giving them all sorts of technical and financial aid, but Mr. X in the bush, who has produced 10 kilos of groundnuts more, than he did last year, is not able to sell them, or else, is getting a worse price for them. I really believe - you may think, I am exaggerating- I really believe this is fundamental to the problem. In Madagascar a campaign of what they call: "animation rurale"has been launched. This, I think, in English is "rural leadership". In my opinion "l'animation rurale" is the money that goes into the peasant's pocket. Agricultural development is an economic activity; agriculture is an economic activity; man is an economic creature who works in order to be paid... and the planners often forget this. They think it is enough to make fine speeches and the peasant will produce more even if he earns less money. The peasant is the only man I know, whom we think we can ask to make a greater effort for nothing.

The second thing is: the structure of privilege in these countries will have to be altered. They have inherited from the colonial era a privileged society: they took over from their colonial masters the same jobs and the same salaries, the same cars, the same houses and the same habit of two months' holiday a year. Now, this will not work, and here I am in agreement with Professor Dumont in his latest book "L'Afrique est mal partie".

In certain African countries, Chef du Cabinet (Permanent Secretary) is paid 180,000 francs per month, which is 720 dollars. A worker on a sisal or a sugar estate gets 2,000 francs a month, which is 8 dollars. That is a difference of 90 to 1... 100 to 1, practically. This is an extreme example, but it is common to many countries where I have worked. This enormous difference in salaries, which is an unjustified structure of privilege, is a real obstacle to development in itself. There must be social justice in these countries before we can develop them. In under-developed countries there are the rich and the poor as elsewhere, but here the rich are getting richer and the poor are in terms of real purchasing power - getting poorer, in most of these countries. That is certain. We have an enormous lag in the technical training to overcome, if we are to overcome the technical obstacles, which I have gone through in some detail. Success in this field will depend enormously on the speed at which we can train technicians, not only at the higher level, but at the field level.

We are greatly in arrears with the technical training programme and I do not think we can do enough to train people faster. The last thing I should like to point out is this: agricultural development is difficult - and it is a very long - term operation. If you want to develop your own farm, it will take you ten years. In an underdeveloped country, it is going to take 100 years, probably, to change the present system of agriculture. You must train a generation which itself will train the next generation. These obstacles which I have outlined do exist, and I think the best service we can do is to realize, very clearly, that they exist, and in our own small way, when we have contact with people in these countries, press home the nature of these obstacles. They must find the solution. We cannot find the solution for them.