

DISCUSSION

Chairman :

I would like to suggest that we adopt the following practice, that we should first of all direct comments and questions to Mr. Leslie on his paper, and if there is still time, we could have questions and comments raised about Mr. Rees' paper, if it seems useful to do so, and then anyone who feels capable of making a useful contribution in relation to this is welcome to do so.

Dr. Jones :

I should like to comment briefly on one of the smaller parts of Mr. Leslie's paper. It refers to a rather important aspect of the economies of the tropical roots. In speaking of trade and commerce on tropical roots, he refers to the West African marketing system as being 'inefficient and disorganised'. We currently have four teams studying West African marketing systems, and it is our impression that they are efficient, well-organised, and capable of handling a very large volume of produce. After I read that section I tried to recall figures I had seen on the quantity of yams present in some of the Eastern Nigerian markets. As best as I can reconstruct it, they run in order of two to three hundred thousand pounds of yams present in the market at any one time. These are very large markets indeed, and some of the markets also serve as major distribution centres. In an area where the roots are as important in the dietary as they are in West African countries, there has to be an efficient marketing system to go along with it.

One other point, having to do with the position of the tropical roots in international trade, I suspect, though I am not sure, that one of the reasons they have not figured particularly in the post World War II period is because of increasing demand at home for the product which pushed prices up, and also interfered with the flow in the international trade, in such a way to cause them to lose foreign markets.

Dr. Rogers :

One interesting thing, in terms of international marketing in cassava, is the recent importation of very significant quantities of cassava roots into eastern cities of the United States due largely to the influx of Spanish American folks. In New York and all the big cities now, we find a very large market for almost all of the tropical root crops, in spite of the fact that they are inefficient to be shipped because of their high water content.

Mr. Courcay :

I would just like to confirm from my personal experience in Nigeria and Ghana, the comment of Professor Jones, on the efficiency of yam marketing, and also to mention the study of Dr. Hill, late of Ghana University, which is confined to the Ghanaian marketing, but is nevertheless a worthwhile study. In fact, when you consider the local conditions of shortage of capital, and compare the available labour, the marketing systems are extremely efficient.

The other point which was taken also was in interfering factors in international trade. It is very significant in this context, that the United Kingdom yams are traditionally supplied by Nigeria—a matter of eight or ten thousand tons a year. This was stopped suddenly by the decision of the Nigerian Military Government in February or March last year to prohibit the exportation of foodstuffs, including yams, owing to local shortages.

Mr. Pilgrim :

Just two minor points in connection with firstly, the efficiency of marketing systems of tropical roots. I do not know the situation in Africa, but certainly in the West Indies, the marketing systems for tropical root crops are relatively inefficient, when compared with the marketing systems for sugar, cotton, banana. With these

crops which I just mentioned, you know before-hand what the yields are going to be; you know, usually before planting what prices you are going to get for these crops; you do not have to market them yourself, in that the farmer can grow the crop and leave some other organisation to market the crop, and he is assured of a basic minimum price. This situation does not obtain for our tropical root crops in the West Indies, and I would say that as far as we are concerned, the marketing of these crops is relatively inefficient when compared with others.

On the matter of international trade for tropical root crops, I do not know the situation in Africa, but certainly in the West Indies the amount of this type of crop which is marketed abroad is very, very small compared with the value and quantity grown and consumed locally.

Mr. Yankey :

Mr. Chairman, I too am in no position to comment on the efficiency of the marketing systems in Africa for food crops, but what we know in this part of the world—the Caribbean—is that the pricing system on the domestic markets, which are concerned largely with food crops is not that effective, since the prices, particularly in the day, may vary from one point in time to another.

The second point is that the measures are very arbitrary. In fact, you would have a heap of dasheens sold in one spot for \$1, and in another area for 75c. It also depends on the knowledge between the buyer and seller, because in these markets you may find that certain sellers are well-known, and that certain buyers would prefer to patronise them rather than go to others. This makes the pricing system inefficient, because what you have here is an uncertain price throughout the day and sellers might be very reluctant in spending that time at the market, to know at the end of the day that they have got very little for the produce. In this part of the world, I think that the domestic market for food crops is very inefficient, and I would like probably someone to comment on the system in Africa relative to the pricing system.

Mr. Ferrer :

Mr. Chairman, let us not be too rash in condemning the inefficient system. The higglers, traffickers, etc., tend to be crucified by people who speak about an efficient marketing system. But one has to consider the pattern in which these crops are grown. You have small units scattered over a wide area, and I can tell you that I have personal experience in the collection of these parcels of commodities scattered over a wide area, and the cost of collection is extremely high. An investigator in Jamaica, some years ago, raised the same question, and he was rather doubtful whether with the pattern of production in these small territories, you can really organise an efficient marketing system which could really be a great substantial improvement on the system that exists at the present moment.

Dr. Johnston :

With regard to the contrasts that have been mentioned several times between the efficiency of marketing starchy root crops in Africa and the West Indies, I strongly suspect that the point that Mr. Pilgrim made the other day is very relevant here, namely the fact that for many years (basis of one doctoral thesis I'm familiar with) going back at least sixty years, in the case of Jamaica, there has been continuing substitution of imported rice, and wheat flour for the starchy roots, reflecting a situation in which the growth of demand for the purchased staple foods has been mainly met by imported supplies, so that the stimulus for developing a more efficient domestic marketing system for the starchy roots has been relatively weak.

The question I would like to put to Mr. Leslie is, to what extent there has been, or there is the use of a processed starchy root product here in the West Indies? In West Africa, manioc meal, as it is known there, or farina de manioca, as it is known in Brazil, is of very considerable importance in the urban areas, and unlike the fresh roots has an ease of transportation, storage and handling, very much like the cereals and it is therefore not subject to anything like the same degree of the special problems of distribution that affect the bulky starchy root crops, and I would like to ask whether any consideration has been given to the possibility that it might be introduced.

Mr. Leslie :

There is not, as far as I know, any significant processed form of the roots, except perhaps for cassava, farina. But there is no significant trade and no regular supply.

Dr. Sidrak :

I would just like to make a small comment on Mr. Leslie's paper, concerning Tables 1 and 2. In fact, the food composition of the root crops is not as bad as it appears here. It is simply because the calculations which are made in Tables 1 and 2 were not strictly made on dry weight basis, and if we calculate this on a dry weight basis, all the figures in Table 1 should be multiplied by a factor of 2.5 to 3, which brings about the food composition of these root crops to a bit more comparable values—to more or less comparable values—to what is found in maize and wheat and rice. If we really want to compare we have to compare in a particular and comparable basis, and this should be on a dry weight basis.

Mr. Leslie :

I took it, when I was compiling the statistics, that in most instances the tubers were consumed fresh, particularly in the West Indies, where I have the basis of my experience. With maize and wheat, the normal form is to have them in the dry, and this was the reason why I considered the basis of comparison did not necessarily exaggerate the picture.

Mr. Williams :

I would like to draw some evidence from the literature, because it seems to endorse Mr. Leslie's suggestion that breeding may not be the answer to the supplementing of additional nutrients supplied by the root crops. The evidence seems fairly clear. Time and again in the literature you can see exhaustive references by economists that breeding may be the answer. Dr. Jones from Stanford has spoken against the point, and I wish to endorse it. Most crops plants have evolved biochemical pathways towards the elaboration of products which might be carbohydrates primarily, or protein primarily, or oil primarily, but the significant thing is that there are other smaller levels of nutrients, other than the major nutrient elaborated.

About the turn of this century in Illinois Experiment Station, a team of geneticists showed that if you selected maize for high protein from the mean level of about 10.9 per cent, after fifty years, they were able to double it, but this is in about 50 years, so with the sophistication of extension methods nowadays, it would seem that the real answer could well be instead of trying to improve these things by breeding, to encourage people to change their food habits.

Mr. Doku :

Mr. Leslie, you stated that yields of root crops are low. I wish to inform you that in West Africa compared with the cereals, the yield of root crops is certainly higher than the cereals. You could easily get about 5 tons per acre for most of the root crops, whereas for two crops per year of cereals you might get something less than that.

Mr. Leslie :

I do appreciate that there are variations from one country to another, but in general, I think that yields are low.

Mr. Francis :

Mr. Chairman, I thought it unfortunate that Mr. Leslie did not point out the fact that temperate agriculture has emphasised traditionally the production of cereals and foods for people in temperate climates, whereas, in tropical agriculture we have to emphasise the production of raw materials and export commodities. I thought that this was particularly important, in view of the fact that he made an observation in his first paragraph, to the effect that these contrasts emphasise that once the primitive technology and low agricultural productivity of tropical agriculture which certainly is

not the case, we point to productions like sugar, rubber, cocoa, coffee, and a wide variety of products, which we produce primarily for export. I think if even a small proportion of our agriculture and investment in these particular areas were devoted to production of root crops, and if the research in our institution here was devoted to a larger extent to the production of root crops, productivity in agriculture would be considerably increased.

Dr. Edwards :

I am tempted to ask the Dean to comment on this, but I think I'll allow someone else to.

Mr. Ferrer :

The question I would like to ask is whether the market for starchy root crops is likely to expand or to grow in time. I asked the question because not so long ago I happened to be in England and I had a few discussions with some of the people who handle tropical products in the United Kingdom and a number of them expressed apprehension about the growth of the market in that the sons and daughters of people who now eat starchy root crops in the U.K. are growing up in a new environment, they are eating in the canteen with other English people, and they are losing taste for things like yams, tannias, and even things like pigeon peas. They are growing up on Irish potatoes and cabbages and cauliflower and such products and on the whole, the younger generation of these people are moving away from these root crops.

Mr. Persaud :

Mr. Chairman, I wonder if the problem of root crops in tropical countries is not one of demand, in the sense that demand for them is not really responsive to changes in incomes. This means that over time, you have a circular decline in prices, or the terms of trade are adverse to the people producing them. It may lead to this. Also we have an inelastic demand for these products, which means that with any increase in supply, prices tend to fall. These tend to discourage the production of these crops and probably leads to this problem of low productivity.

Dr. Edwards :

We have time for one last question or comment.

Mr. Hendrick :

We in the Solomons appear to be rather fortunate in view of what has been said, and what is said in this paper. We have no land shortage, we have no food shortage, but we do, however, have one thing in common — we have a tremendous marketing difficulty mainly due to the widespread nature of the country (a large number of islands and very poor communications). In an attempt to get over this, we have been forming a large number of co-operative societies, producer societies and marketing societies, and to date I think it is fair to say that they have been working reasonably well. In our producer societies we are attempting to bypass the one-man one-acre system which is predominant in the tropics, and this allows use to mechanise more easily and makes the extension work easier too.