

## DISCUSSION

### *Mr. Pilgrim :*

Dr. Johnston, that section of your paper which states 'The familiar arguments concerning the need for agricultural mechanisation in order to "release" labour from nonfarm jobs have little validity under the conditions that prevail in underdeveloped countries today.' Again here somehow I detect the feeling that the use of modern agriculture in an underdeveloped country must be limited and must advance only as jobs, nonfarm jobs, are provided for the people who will be displaced. This seems to be a general theory — I may be wrong. But isn't it part of our job to force to some extent this movement by improving the efficiency, by modernising agriculture in these areas, and even, if necessary, by displacing a certain number of persons who cannot be immediately absorbed elsewhere, thus forcing the pace, forcing governments, forcing the people to find ways and means of utilising what will then become excess labour. I'm rather worried about the attitude that you must find the other job before displacing the present agricultural worker. This seems to me to indicate that it will take maybe hundreds of years before we get out of the present subsistence agriculture in many areas. Are people really going to wait this number of years for the improvement which more and more they see in other countries and don't see in their own?

### *D. Johnston :*

It's an excellent question and I think there is certainly considerable validity in it. But I would mention as counter arguments that scarce capital funds and scarce foreign exchange that is used for investment in agricultural mechanisation is likely to reduce the availability of those exceedingly scarce resources for financing industrial development, so there is a competition that way. And secondly that there unfortunately seem to be real problems in supply creating its demand in the case of this kind of excess labour. What seems to happen too often (certainly in tropical Africa and I gather it's a very conspicuous phenomenon in some of the cities of Latin America) is that these people squeezed out of agriculture in such a way, many of them end up in shanty towns on the outskirts of the city — a sort of floating population — and even though there was a huge reservoir of labour available it does not seem to lead to an acceleration of industrial growth and employment opportunities in the industrial sector. I think this is partly a matter of faulty economic policies in some of these cases of holding wages artificially high for a privileged minority who do find jobs in the modern sector whereas a great part of the labour force finds productive employment neither in agriculture nor in modern industry.

### *Mr. McConnie :*

Quite apart from the point that Mr. Pilgrim just brought up, there is another factor which, subject to correction, I have not seen stressed in these papers, and it is a natural tendency of the youth of today to move away from these manual jobs on the farm anyhow. Most of them want to congregate where the bright lights are and whether we want to or not, it seems to me that this tendency to mechanize and increase efficiency would have to come. It is now for the economists to find out what we are going to have to do with this displaced labour force in other sectors.

### *Dr. Edwards :*

I think I sensed in what Mr. Pilgrim first said and the way Mr. McConnie followed it up, the frustration that many people with some responsibility for a future in agriculture in the West Indies feel for, as they see it, having to be responsible for meeting the unemployment problem in the West Indies, and in agriculture having to be a sponge which must not be squeezed and which must, even in some way, find capacity for more water, more workers. Various problems arise. We have thousands of microscopic farms, most of which don't provide any sort of decent living for the people and which are becoming increasingly less viable. And this of course is even more difficult to change when agriculture has to provide additional jobs required. I don't know if I'm right but I'm sensing a reaction to

this kind of position. The feeling that it is not fair, it isn't right, it isn't useful for agriculture continually to have to carry this burden largely alone because employment in the nonfarm sector hasn't grown very rapidly despite appreciable industrialisation programmes in the last few years. I suppose it's fair to say that in the early 1950's it was generally believed that industrialisation could solve some of the major problems of the West Indies. Now it's pretty obvious to us that it hasn't.

National income has increased substantially in some islands but employment has increased in the industrial sector hardly at all. And I think this is the reaction — people are unemployed, more have to be unemployed if agriculture is to become progressive and more modern. I suppose up to now I simply tried to summarize the problem and I haven't tried to answer it. There is, in many islands, scope in the form of unused and unutilised land. It's really quite remarkable how much land there is not being productively used in many of the densely populated islands of the West Indies. We have the labour, we have a fair amount of knowledge, why can't these be organised. But, I don't think I'll try to answer the question any more than that at this stage.

*Dr. Macdonald :*

I would just like to make a few comments on this question of mechanisation in peasant subsistence in agricultural areas. This is a very difficult aspect of policy and development. There is a natural assumption that if you put a tractor in you are going to displace people from the land. This, in some cases, can be correct. But if we go to America, which is the most highly mechanised agricultural country, although I believe there is one person working on the land and he can feed something like 26 people, in other words the agricultural population or agricultural labour is very low. In actual fact agriculture in America is the biggest consumer of steel and one has to remember that associated with the tractor driver is the vast industry which makes machines and tractors and also processing equipment. One of the problems in places like Uganda and East Africa is that if you do purchase a tractor, then there is a tendency to superimpose that tractor on to the peasant subsistence agriculture and of course it doesn't work. The peasant wants his sweet potatoes done in a tenth of an acre plot whereas the tractor will do it in 20 acre blocks. It is very difficult to superimpose the tractor onto this sort of system, but this doesn't mean that you cannot bring tractors into countries such as Uganda which has a fair amount of surplus land which is not being used. As an investment these tractors will go into agriculture on plantation scale and this is being done to a certain extent with sugar — I suppose competing with the West Indies.

*Dr. Johnston :*

Just two further points on this question of mechanisation. First of all, in so far as we are thinking of the domestic market the structure of a country in the early phase of development in itself does pose an inherent limitation on the demand for purchased food. If we have a few large mechanised farms of rapidly expanding production satisfying most of the growth of commercial demand for food this necessarily means that for the mass of the farm population that is engaged in small holder agriculture, the possibility of their expanding the cash incomes and among other things their use of purchasing goods is that much reduced and under certain circumstances the most rational strategy of agricultural development may be what is sometimes spoken of as a dual sized structure approach. A great many extremely small farms and relatively small number of large mechanised commercial farms (I have argued at some length in a paper — a paper on Agricultural and Economic Development with relevance to the Japanese Experience) that for many of the under-developed countries — the Japanese model — this process of gradually modernising, increasing the productivity of the nation's small farms, increasing your output much more by increasing the productivity of the land and labour already committed to agriculture by increasing crop yield and so forth, rather than a heavy reliance upon capital investment is likely to be the more promising strategy. But obviously there can be exceptions and one of the most important exceptions is in the case of a relatively small economy with good export potential. And then the export demand that it faces is completely elastic and there is literally within the relevant range no limit on the extent to which it can expand production

and export. But of course for the under-developed countries as a group the situation isn't too promising in that respect, and if the country is a coffee producer it is likely to have a coffee quota under the International Coffee Agreement to remind itself that on the overall scale the scope for expanding export production is not unlimited.

*Dr. Rogers :*

Dr. Johnston, you made a recommendation for the use of fertilisers, but it seems to me before you can make a recommendation to use chemical fertilisers to improve the output of these root crops that we must have a considerable amount of education. In the development of the south-eastern part of the U.S. the farmers had the attitude that if some fertiliser was good, more was better, to the point where they burnt out all the crops, at least at first; wouldn't you have a considerable educational programme to go through to get your farmers up to the level of using this input?

*Dr. Johnston :*

I think you would and I think I believe I learnt from our discussion on fertiliser use on Tuesday that there are a lot of other problems that have to be resolved before it would become widely economic to use fertilisers in tropical root crops. I'm simply trying to put forward the argument and welcome challenges to it, that because of the nature of these inter-relationships between agriculture and overall economic growth, a type of agricultural development strategy that concentrates upon reaching the point at which economic returns can be realised through varietal improvement, through greater use of fertilisers, through better insect and disease control and very probably through pre-emergent spraying to control weeds are likely to give specially high returns because of the fact that all of these are highly divisible, and can, given a reasonably competent extension programme, be applied on small farms. And, there is at least the presumption in terms of policies designed to be in the national interest that they will be more productive than investment in mechanisation which may be profitable for the individual operator particularly if he has an untypically large holding but for a country at the early stage of development it may not be in the national interest.

*Mr. Francis :*

With reference to Mr. Gooding's paper, Mr. Chairman, I am not quite convinced as to the reason why in arriving at his cost of production figures, in relation to both yams and sweet potatoes, in the case of sweet potatoes it's confined I think, to the spring planted crop. I am not quite convinced as to his reason for excluding the cost of harrowing, subsoiling and lining in arriving at the final figure. And I wonder whether it would not have been more realistic to have charged a proportionate part of that time which the yams occupied the land in arriving at this figure.

*Mr. Gooding :*

Yes, I have often wondered about this myself and in fact I have, from time to time, attempted to construct costings on that basis. There was a period when land was prepared and allowed to lie fallow. In the 1930's I remember as a boy we were always told that there was tremendous virtue in allowing the land to lie fallow — it regenerated, it recovered, it did all sorts of peculiar things and was much better — and then food crops were put on it and it was traditional not to charge any other operation other than those additional made by putting food crops on it, and I think that this has persisted. In fact, if you did of course charge for harrowing, subsoiling, lining and ridging, the amount of charge you would have to give to the food crop would depend on the number of years, the number of ratoons the cane was going to carry, probably an average about 5 and this would then be approximately a six month charge out of five. In other words, a tenth of the cost of those operations.

*Mr. Paneris :*

I would like to ask Dr. Johnson about one point here. In Table 5 he indicates that the full production now, compared with about ten years ago is doubled and since the population in Jamaica could not have increased that much in that time,

people must now be eating Irish potatoes in place of something else. This apparently would appear to be other root crops. I also gather that the land that is used in the production of Irish potatoes is not the same land that was used for the production of other root crops. I would like to ask about the impact upon the production and the possibility of growing root crops in Jamaica.

*Mr. Johnson :*

I think there has been a misinterpretation in Table 5. The fact that we have produced more Irish potatoes meant that we imported less. If you look at the Table 5, column 3, you would see the total available for the consumption, that is, of which local production has been varied considerably with imports so that production went up, imports went down, so that by 1966 in point of fact, we had 33 million short tons, as against 1955 in which we had 16 million short tons. This is only of Irish potatoes and on per capita basis. In 1966 it was something less than 20 pounds per capita population wise.

*Mr. Francis :*

There are just two minor points I would like to address to Dr. Johnson. In 1966, it was observed that the state of self-sufficiency was achieved to the extent that they were considering the discovery of the export markets for the surplus, but at the same time I noticed that about .6 million pounds was still imported. I was wondering how that fits in with any possible consideration regarding legislation to protect the local industry. That's only on observation. And I would be glad if someone could give us some idea of the actual comparison or the ratio in prices between the locally produced and the important Irish potatoes.

*Dr. Johnson :*

First question. The fact that in 1966 I said that local production accounted for 95 per cent of the total quantity available, and yet I assume that that was virtual self-sufficiency. Is that the question?

The fact that we have production does not necessarily mean that all that is consumable. One could look at it that way and I think that this .6 actually came in at the very late stage when we had to look in terms of the tourist industry. That is what happened here.

Now your second question, in relation to the comparable cost of imported potatoes as against locally produced potatoes. I am sorry that I have not all the detailed figures here but in general, what happens is that we import potatoes during the latter part of the year, and at that time we are buying largely 'old' potatoes and so sometimes the price is lower than the price we could get it for in Jamaica.

*Mrs. Rawlins :*

I really want to make a comment on the last question, tying together the three papers. In the case of the arrowroot industry of St. Vincent, we see where they are having some difficulties, and in fact, if they continue to operate it, largely on the basis of continuing Government's support to the industry in one form or another, the Barbados situation appears to be that they manage to produce the quantity of food crops that they do because of Government regulation and even Dr. Johnson's success story of the Irish potato industry in Jamaica suggests to me that it could not have been achieved without considerable help from the Government, in one form or another, not only on the research and technological side, but also in the form of subsidy, extension work and assistance to the farmers in one form or another.

Would other people care to comment on the suggestion that most of these root crop industries could only be modernised and made successful on the basis of this Government support in various forms and apparently there is not any basis for the individual initiative of the farmers in developing these industries.

*Dr. Johnson :*

In the case of Irish potato I cannot say that the farmers did not take an initiative in developing this industry, they did do this. It was only when production gained in

proportion that they asked for government assistance and this came largely through a subsidy. I mentioned that in 1961 the subsidy was abolished. At that time it was felt that the industry was sufficiently well on its feet for the subsidy to be withdrawn, so by and large as far as Irish potato industry is now concerned, if you have a subsidy, involved, it would largely be through marketing facilities which are provided.