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## Discussion Report

### *Discussion of Paper Presented by Dr. Ridwan Ali*

The discussion opened on the question of the kind of methodology used, and ways in which this methodology would be employed to examine alternatives presented in the context of diversification and rationalization of Caribbean agriculture. It was emphasized that the most serious question was in respect of the opportunity cost of the production of sugar, opportunity cost taken in terms of foreign exchange, employment, and so on.

It was suggested that in order to determine the opportunity cost of sugar, new farming systems could be compared to ascertain their contributions to the employment situation in relation to the employment of resources in sugar. Of course the analysis could be extended to wherever one's interest lies, whether it was the income criterion or foreign exchange. It would be fairly straightforward to compare results and then decide what changes were needed to meet demands. The final stage would be to work out new systems, and this could be viewed as one way in which that kind of methodology could be used.

At this point it was suggested that it was not simply a question of fitting acreage to demand. The problem was how to allocate acreage and whether the methodology should or could provide such a solution. The reply was that there had been so far no single empirical model which could provide such a solution, but a decision would be taken on the basis of the results of a series of studies. There was also the matter of putting in certain restrictions in any model, for example, restrictions of minimum or maximum time period.

Dr. Ali then went on to describe a dynamic linear programming model for project evaluation purposes which he had developed with application on a national level. Sugar was an activity and there were restraints on foreign exchange and employment. The model was tried out at the project level where it worked very well because trade-offs between the revenue and employment and foreign exchange had been established. This model could also be used on a regional basis but then it would require a different kind of approach.

The choice of the nutrient balances approach over the consumption function analysis of cross-section data involving per capita income and its distribution is to lose sight of the fact that even after determining the quantities required there still remains the question of purchasing power which is an income problem. The traditional approach involving the computation of income elasticities had been tried but since the retail index did not exhibit a regular pattern, it was, therefore, difficult to predict changes in the retail index and project real per capita income.

In the matter of implementation policy, several levels could be envisaged. The real problem here was of course the zoning of land for specific use. Mention was made that in the West Indies there was no legislation controlling land values and since this triggered-off demographic and capital movements it could be seen that such legislation should be instituted. As regards taxing policies in relation to zoning, it was stated that the character of industry and commerce differed greatly from that of agriculture as capital flowed easily into the most productive areas. One could take the lead from the international situation where industries which received incentives have been providing aid to others.

Next came the matter of integration. The linear programming model facilitated the objectives of this policy at the levels of farmer, Government, and private sector. Such planning involved, for example, risk reduction, and allowed the question of benefits from the projects to become extremely important. There were, however, various implications for model building. For example, our extension services concentrated on the technical aspects rather than overall farm management and farm organisation function. It could be that extension officers were not trained for this function and that the problem affecting adoption might well be lack of knowledge of the effects of new techniques. Extension services could be rearranged and there was need for more farm management training and the use of organised structures as models in training. Structures should be planned with service work separated from extension work, and such planning policy should in every way include the farmers.

Dr. Ali's study also provided guidance for those persons not wanting to embark upon the agriculture of traditional crops. Its objective had been to show contrast between the existing model and a proposed organisation where targets were set and extension officers decentralized to make service more accessible. Decentralization of extension services and a permanent exhibition site, as proposed, would facilitate the assessment of productivity. Extension work was therefore an important variable.

The problems of import substitution and diversification could not be left at the farm level. They would have to be dealt with at the national level. Farmers did not necessarily keep records especially when there were no benefits to be derived from so doing. And even when records were kept farmers were not equipped to analyse them. This again emphasized the importance of extension services which could be applied in working out methods of quick analysis.

A question was asked concerning the amount of weight that might be put on the internal rate of return which could be expected from diversification. Dr. Ali replied that international bodies emphasized the internal rate of return but that was not the important criterion since the contribution to employment may be significantly high although there may exist a low rate of return.