

AN EXPERIMENTAL SAMPLE LAND UTILIZATION SURVEY

INTRODUCTION

There is an imperative need in most Colonies to increase agricultural production in order to safeguard the food supplies of an ever increasing population and to raise the standard of living of the people by the export of cash crops.

An indispensable preliminary to all investigational, extension and advisory work aiming at increased agricultural production in a territory is a survey of the existing land utilization. When data of the land utilization of a particular area are available then one has a basis on which to work in calculating such important factors as the general level of prospective food supply for the area and hence its estimated human carrying capacity, or the acreage of cash crops in the area, or the potentialities for future development in the area. Without the data from a land utilization survey calculations of the three items mentioned above are at best only a rough approximation and not satisfactory for general application.

The type of land utilization survey undertaken in the area will depend to a large extent on whether the area is in a highly developed stage or not, on the size of the area to be surveyed, on its topographical features, on the natural vegetation and agricultural crops of the area, on the use which is to be made of the information collected, and perhaps most important of all, upon the resources at the disposal of the organiser of the survey.

The technique of sampling has universal application and when applied to a land utilization survey does not restrict the type of survey to any particular set of circumstances or conditions, e.g. an area having all types of topography and bearing all kinds of vegetation can be sampled. The advantages of a sample survey over a total survey of a given area are that:

(a) the sample survey takes less time; (b) the number of staff required is less, closer supervision can be achieved and the estimates obtained should therefore be more accurate; (c) costs are much less; (d) it should be possible to obtain more detailed information; (e) owing to the reduced volume of material that has to be handled the quality of abstraction and analysis should be higher. Mahalanobis (1952) directed a National Sample Survey in India on a sound statistical basis and found a discrepancy of some 20 to 25 per cent. between the actual quantity of grain consumed and the supply as estimated from the agricultural statistics. All the advantages to be gained in carrying out a sample survey are lost if the samples chosen are not representative of the whole aggregate, i.e., the errors introduced by the sampling process (the random sampling errors) are so large that they invalidate the results for the purposes for which they are required.

The main objects in carrying out this survey were to evolve the best sampling methods and surveying techniques to employ in an area such as the Northern Plain of Trinidad. The question of providing information of practical value on the utilization of the land in this area was considered incidental to the main objects. No similar survey had been carried out in Trinidad previously and little work has been done in this line elsewhere.

Five postgraduate students worked together on the survey and provided an excellent example of team-work. It was considered that as much planning as possible was desirable in the office before commencing the field work, and the five members of the team met regularly in the planning stages of the survey to discuss the design and working details under the chairmanship of Dr. A.L. Jolly.

It was decided that each member of the survey team should act as the supervisor of the other four members of the

team for certain operations to be carried out both in the office and in the field. This procedure, it was thought, would give experience to the students who might be employed in this type of work in the future and supervising staff elsewhere. The supervisor had to work out the details of the operation assigned to him and then issue instructions either verbally or written so that, had the other four members of the team been poorly educated assistants, they would have understood these instructions thoroughly. By carrying out this procedure it was thought that the organisation of the survey would simulate that normally required in most Colonial territories where five enumerators of the educational standard of the members of the survey team would be very unlikely to be available. In undeveloped territories more demands are made upon enumerators than in developed territories due to the inability of the local population to complete questionnaires and so it is essential that instructions given to enumerators are fully understood.

The members of the survey team provided their own transport as each member was a part-owner of a car. The number of cars required each day and the distance to be travelled whilst surveying in the field were closely studied by each supervisor to ensure that the most economical use was being made of the facilities available.

The main handicap of this survey was the very limited time available for field work. The only time available for surveying the sampling units in the field was during the three weeks of the Christmas Vacation, 1954, not a period of the year to be relied upon for dry weather. Consequently the scope of the survey was restricted in the choice of the frame, the sampling method, the sampling fraction, the nature of the information to be collected and in the methods of surveying.