

I. INTRODUCTION

In most tropical countries the food supply is inadequate. This is to some extent due to the fact that agricultural resources are relatively undeveloped in many parts of the tropics. It is, therefore, the aim of agricultural departments throughout these backward countries to increase agricultural production by the improvement of existing agricultural practises, and by the introduction of new methods wherever this may be practical.

However, the failure of a number of agricultural development schemes (Stamp 1953) has shown that it is necessary to use a certain amount of caution in connection with the introduction of new principles.

Before improvement plans for an area are put into action, in fact, before such plans are completed, some type of agricultural or land utilization survey should be made. The type of survey made will, of course, be largely determined by the information sought. Surveys may be usefully employed to expose problems of agricultural development, among which may be problems involving production potential, population density, drainage and irrigation, pests and diseases, transportation and accessibility, local customs and beliefs, and so forth. The success or failure of an agricultural development programme may depend on recognizing and allowing for such problems. The waste of time and money might often be avoided by a careful examination of the results of an agricultural survey. Therefore, a survey should be one of the first steps in agricultural re-organization or development (Economic Development of Jamaica 1952).

A complete land utilization survey provides information on every unit of the population investigated. Such detailed information may be required. For example, to increase the production of a certain tree crop, a government might

propose to provide fertilizers for every farmer, according to the number of trees he owns. In order to calculate the total amount of fertilizer required for the scheme, a complete survey would be required to determine the exact number of trees grown.

It is not often required that land utilization surveys be so detailed since they are usually employed to investigate an area as a whole.

Sufficiently accurate information on land usage may be provided by a sample survey, which can be carried in a much shorter time, at a much lower cost than a complete survey. Because manpower requirements are also lowered, a sample survey may be undertaken as a convenient project for a student group.

Two land utilization sample surveys have been carried out by post-graduate students of the Imperial College of Tropical Agriculture (see: Castle, Devonald, Hannagan, Humphreys, Mitchell, 1955; Buckler, Furber, Morgan, Murfitt, 1956.)

The 1955 group used a technique of area sampling to survey a large area in the northern plain of Trinidad. The 1956 group surveyed the same area again, but used a line sampling method. With other modifications in surveying technique, they improved upon the accuracy of the results obtained by the preceding group. It is doubtful that the accuracy could be further increased without making a more intensive and detailed survey. This would require more time and a greater number of investigators, and would be largely repetition. To carry out the same type of survey in another part of Trinidad would be impractical for a student group of the Imperial College. Another area of comparable size would be either too remote or too mountainous. If a distant survey area were chosen, too much time and money would be spent in travelling. The same could be said for a mountainous area where farms are inaccessible and widely scattered. The attentions of the 1956-57 team were, therefore, turned in other directions.

Several possible subjects for survey work were examined. Surveys of tree crops, rice growing areas, and fertilizer practises were considered, but were rejected either because of a narrowness of scope for field measurement, or because of the lack of a suitable sampling frame.

In Trinidad political circles there has recently been talk of increasing home food production to help reduce imports. It is apparent, however, that very little is known about food production. In fact, there are no available figures on which to base estimates of either quantity or quality of vegetables and ground provisions produced in Trinidad. It was felt that food gardens would provide ample scope for the development of measurement techniques. A very convenient sampling frame was also available (see Section 3). For these reasons, and because of local interest, it was decided that the present team should carry out a survey of food gardens.

Most of the food crops grown in Trinidad are grown by peasant farmers, and most of the produce is home consumed. Few, if any, peasants keep record of any sales they make. The only records one might find would be those kept by the government in connection with exported produce. With the possible exception of a few bananas, none of the export crops are grown in food gardens.

Peasant farmers in the wet tropics growing a variety of crops, tend to plant them somewhat haphazardly in mixed stands (Shephard 1950). Because of such irregular planting methods, and because of wide variation in the standard of cultivation throughout peasant areas, it is very difficult to estimate food production (Halcrow, 1947; Hunt, 1952). To carry out a survey, it would, therefore, be necessary to devise a method whereby these rather complex food gardens may be measured or sampled to estimate their individual production.

An attempt has, therefore, been made to develop a technique of sample surveying for food gardens, and a survey has been carried out with the following objectives:

1. To determine the numbers of ground provision and vegetable crops grown in an area of Trinidad.
2. To determine what definite crop combinations, if any, are used in planting mixed stands.
3. To estimate the area planted in food crops.
4. To investigate the standard of cultivation and the use of fertilizers in food gardens.
5. To investigate the methods of food crop disposal.

Since this survey was conducted as student project work, it has been subject to certain limitations, some of which have already been pointed out. Because of a shortage of time it has been necessary to limit the area to be surveyed. For the same reason, the extent to which the results were analysed, was also limited. The latter point will be more fully discussed in Section VII.

The present survey team consists of eight post-graduate students of the Imperial College, under the supervision and direction of Dr. A.L. Jolly. Each member of the team was elected to supervise the surveying of a part of the total survey area, and/or to concentrate his attentions on certain parts of the work. For a complete detailed review of this survey, reference should be made to seven other reports. (See: Currie, Gunn, Hill, Mawley, Meredith, Waterworth, Watson.)

In order to get an even wider picture, the county of St. David was admitted into the survey area. The predominant crop is again cocoa, but the gardens in this county are very remote from large markets. In addition to the above diversities, some variation in climate, topography, and soils exists within the survey area (Chenery, 1952).

Thus the survey was planned to cover the three