CHAPTER SIX

AN OUTLINE OF THE METHODOLOGY FOLLOWED IN THE FIELD STUDY

VI. 1 The need for the field study

The discussions in Chapter four on the state of agriculture in Assam are based on aggregated data about the agriculture sector of the state collected from various government and semi-government sources. The problems of agriculture in Assam have been analysed in that chapter from a macro-standpoint by looking into the performance of the agriculture sector as a whole. However, it has become clear from the discussions towards the end of that chapter that such analysis based on aggregated data suffers from certain limitations and that they leave a number of questions about the persistent backwardness of agriculture in Assam unanswered. Macro-level studies can describe the present state of affairs in the agriculture sector of the state and indicate its relative position compared to agriculture elsewhere in the world. But they cannot answer satisfactorily questions such as - 'which factors are responsible for the stagnancy and low productivity of farm output in the state' - or - 'why have technological changes in farming proceeded here only at a snail's pace so far'. To obtain answers to such questions it is necessary to approach the problem from a micro point of view, i.e. to analysis the problems of agriculture at the farm level. This in turn calls for a field study with individual farm households as units of observation.
Accordingly a field survey was carried out as a part of the study during the winter of 1987-88 at a few selected areas of the state.

VI.2 Aims and objectives of the field study

The ultimate aims of the field study were identification of factor restricting the diffusion of new farm technology in the state and prescription of policies for removal of obstacles to technological transformation of agriculture in Assam. Hence collection of data about the sample observations in the study was carried out with an eye towards identification of various factors affecting farmers' adoption of the new technology. These factors would include not only the ones that induce and enable farmers to adopt the practice of new farming methods, but also those which impair a farmer's incentive and ability to adopt and utilise the new technology effectively. The field study was aimed at identification of factors belonging to both these categories, so that the right configuration of factors, which would be conducive towards wider adoption and more effective utilisation of new technology, could be worked out. Once this is accomplished, the task of laying down policy guidelines for making conditions of larger section of farmers in the state conducive for better utilisation of the new technology, would be a lot simpler and easier.

VI.3 Selection of area for field study

The field study to be truely representative should cover a fairly large number of spots representing adequately
all six agro-climatic zones of the state. But keeping in view
the resource constraint of a rather small project of an
individual researcher like the present one, it is difficult
to ensure that the coverage of the field survey would be
extensive in area as well as intensive in information about
the sample observations. Wider coverage of area by spreading
thinly the limited resource over a large number of
observations would be possible only at the cost of cutting
down on the details of information to be collected on each
observation. Since the purpose of the study was not so much
to obtain estimates for the entire state, as to identify
factors responsible for limited adoption and utilisation of
the new technology by the farmers here, it was decided to
limit the number of observations to be covered and instead to
collect data on each observation in some details.

As a first step towards limiting the spatial coverage
of the field study, it was decided to select the sites for
sample survey from the four agro-climatic zones of the
Brahmaputra Valley only. Thus two agro-climatic zones of the
state, namely the Barak Valley and the Hills, were completely
left out from the field study. The exclusion of the hills can
be justified on the ground that the problems of agriculture
in that zone are not quite the same as those of the plain
districts of the state. In fact a detail analysis of the
problems of agriculture in the hills requires special studies
for that region. The exclusion of the Barak Valley, which in
itself form a separate physiological division of the state,
was however prompted by some physical problems including that of limitations of time and financial resource.

The four agro-climatic zones of the Brahmaputra Valley are named as (1) the North Bank Plain, (2) the Upper Brahmaputra Valley, (3) the Central Brahmaputra Valley and (4) the Lower Brahmaputra Valley. From each of these four zones one Agricultural Extension Officer circle (henceforth referred as A.E.O. circle) was selected for field study. The selection of A.E.O. circles was done in consultation with the officials of the state agriculture department. The selection was based primarily on two considerations. First, the selected circle should be fairly representative of the whole agro-climatic zone, i.e. it should contain the basic characteristic features of the zone and it should be neither a particularly advanced nor a particularly backward circle of the zone. Secondly, the necessary infrastructure for the use of the new farm technology should be available at least in some villages of the selected circle.

VI.4 Selection of the sample

The sample design used in selecting the sample in each A.E.O. circle was that of two-stage random sampling, in which villages constituted the primary sampling units and the farm households were the secondary and ultimate sampling units. Thus, in the first stage of selection, in each circle five villages were selected at random, subject of course to the condition that at least in one of the selected villages agricultural infrastructure (mainly irrigation) was
reasonably developed for the use of the new technology package of H.Y.V. seed, fertilizers and water. In the second stage, about ten percent (10%) of farm households in each selected village were then selected at random. Two hundred and five (205) farm households selected in this manner from the four selected A.E.O. circles of the Brahmaputra Valley constituted the whole sample of the field study.

1.5 Collection of data.

Data on the general background and the farming methods of each farm household in the sample have been collected by interviewing a senior member (usually the head of the household) of the farm family. For carrying out these interviews and for recording the information given, a schedule of questions was used. This schedule of questions was prepared in consultation with the supervisor of the study and finalised after a number of test checks in the field.

Data on the general background of the four circles in which the field survey was carried out, have been collected from the Agricultural Extension Officers of the respective circles.

VI.6 Presentation and analysis of the data collected in the field survey

Presentation and analysis of the data collected in the field survey have been laid out over the five chapters from chapter seven to chapter eleven of the present dissertation.

'A general background of the four A.E.O. circles in which the field survey was carried out, has been presented in
Chapter eight presents the general background of the sample of farmers in the four circles and describes the extent of adoption of various improved farm practices among them. On the basis of these data an attempt has also been made to outline the broad patterns of technological changes taking place in farming in the four circles.

Chapter nine is about adoption and use of high yielding rice varieties by the sample farmers. This chapter is comprised of three main parts. The first part deals with the definition and interpretation of the term 'high yielding varieties of rice' in the context of agriculture in Assam. In the second part, the differences in the patterns of adoption of these varieties by the sample farmers in the different rice growing seasons of the state are being drawn out and analysed. The third part is an attempt at identification of factors which influence the extent of use of high yielding rice varieties by farmers. To examine the significance of various factors in this context, a multiple regression analysis of the sample observations has been carried out.

The problem of effective utilisation of the new farm technology by farmers is the subject of discussion in chapter ten. The first part of this chapter is an exposition of the extent to which sample farmers using H.Y.V. seeds were able to utilise effectively the new farm technology package. The rest of the chapter is devoted to explanation of the differences in the rate of utilisation of the new technology.
package by farmers and identification of the right configuration of factors which would enable a farmer to utilise the technology package most effectively.

Chapter eleven summarises the findings of a case study of fourteen successful adopters of the new farm technology among the sample farmers. The case study was taken up with the objective of identification of the factors which were crucial in the reasonably successful adoption of the new technology package by these farmers.

*********************