CHAPTER II

METHODOLOGY AND SAMPLING DESIGN

UNDEREMPLOYMENT in the present study, as shown in the last chapter, has been explained in terms of the wastage of man-days per acre of the holdings. For finding out the man-days in the field of the present survey, account has been taken of the six different stages of cultivation. It has been noted how many days are spent by how many labourers (taking both family and hired labour together) for completing each stage. The break-up of these six stages of cultivation is as follows:—(i) land preparation and ploughing, (ii) sowing and transplanting, (iii) weeding and manuring, (iv) cutting, (v) binding and carrying and (vi) thrashing. Now, multiplying the number of heads by the number of days spent for completing the work of each stage per acre, the figure of man-days used for each stage per acre has been worked out. The man-days used for each of the six stages have then been added up to get the total number of man-days employed per acre for a full cultivation operation of rice crop of local Aman variety, with which we are concerned in our present survey. For each of the farm families surveyed in Midnapore and 24-Parganas (our two survey districts) we have got the figures of these total number of man-days used per acre.
Underemployment has then been measured as a difference between this actual work performance, that is, the number of man-days used per acre in our sample farms and the standard, that is, the number of man-days used per acre in the 'controlled' farms, taken as norm in our case. In the present study we are mainly concerned with the cultivation operation of local Aman variety of rice crop, inasmuch as both the districts under survey are mainly Aman-producing ones. (In 24 - Parganas an area of 1215, 100 acres during 1970-71 were used for local Aman against 69, 800 acres for local Aus and 2200 acres for local Boro. In Midnapore during the same period, cultivation of local Aman covered 1718, 700 acres as against 158, 700 acres and 11, 100 acres used for cultivation of local Aus and local Boro respectively. The areas under the cultivation of H.Y.V. Aman and Aus are relatively much insignificant in both these districts — the data on which have been furnished in the next chapter).

It can be maintained that if more man-days are used per acre for a full cultivation operation of rice crop (the cultivation of commercial crops like jute, oilseeds, sugarcane, etc., is not considered since in our survey areas it is of minor importance and hence negligible) than what ought to be needed for production, the surplus of labour comes into picture, which is what we aim at verifying through empirical test in our study. This surplus labour, measured in terms of the redundant man-days used per acre, cannot be said as gainfully occupied, and hence
there arises the question of underutilisation of labour resources. Our objective, here, is to show whether there exist in agriculture such extra or redundant man-days per acre of the holdings, pointing to the existence of surplus labour which may be identified with underemployment of labour. Seasonal idleness of farm workers has also been found out after working out the average number of days of unemployment per year for the cultivators and land-less agricultural labourers covered under survey.

The survey was conducted through a direct approach to the cultivators and agricultural labourers in the field. Information was gathered from spot enquiries. For internal consistency our questionnaires had provisions for cross-checking.

In course of the survey of the agricultural families, for each such family (sample farm) account has been taken of the family-size (with the break-up of adult male, adult female and minor children within the family), the size of holding, irrigated and unirrigated areas, occupational pattern (with the break-up of primary and secondary occupation), working months in a year and working days in a month on an average, use of labour inputs (both family and hired labour), yield-rate, daily wage rate on an average considering payments in terms of cash and kind, and, above all, employment of man-days used per bigha (converted into acres) for each of the aforementioned six
stage of cultivation. It may be mentioned here that though the information about yield per acre for each sample farm have been collected in this sample survey, all the required data about the output aspect, particularly the data required for establishing the production function, in its entirety, for each sample farm, were not available.

Sampling design:

For choosing the representative farms or holdings, we have taken resort to sample survey. As regards the two districts of Midnapore and 24-Parganas, as considered in the field of analysis of the problem at hand, we had to study each district separately and also to make a comparison between the two.

For the purpose of the study a sample of farms was chosen from each district. For choosing these sample farms we had to make use of a two-stage sampling method. First, from all the villages in a district, a certain number of villages were chosen at random, in the statistical sense of Random Sampling; and next from the farms in each selected village a certain number of farms were chosen also at random.

The total number of Community Development Blocks covered in the two districts of Midnapore and 24-Parganas is 27. Out of this total, 12 Blocks fall within the jurisdiction of Midnapore and 15 within that of 24-Parganas. As per 1961 Census estimate the total number of Blocks is 52 in Midnapore and 31 in 24-Parganas.
In the case of Midnapore which comprised 10,618 villages as per 1961 Census report, the sample consisted of 17 villages spread over these 12 Blocks and from each such village 10 families were chosen as the families of land-holding agricultural cultivators and 4 families as the families of landless agricultural labourers. Thus, in all, 170 families of land-holding cultivators and 68 families of landless labourers have been covered under our survey, so far as Midnapore district is concerned.

In the case of 24-Parganas, according to 1961 Census report, there were 3,899 villages. Out of this total, 19 villages under the jurisdiction of the said 15 Blocks, came under the sample. Here again from each selected village 10 holdings were chosen from among the families of land-holding cultivators and 4 from that of families of landless agricultural labourers. Thus, in this district the total number of families of land-holding cultivators, as covered by the survey, is 190 and the total number of families of landless labourers surveyed is 76. Therefore, covering these two survey districts (Midnapore) and 24-Parganas) as many as 360 farm families of cultivators and 144 families of landless agricultural labourers have been surveyed.

In making the random selection at each stage, we made use of Random Sampling Numbers (Tracts for Computers No. XV) by L.H.C. Tippett.

While taking a random sample of the villages in the districts we took as our sampling frame the list of villages appearing in the District Handbooks of the Census of 1961 published by the Government of India.
In each case the head of the family was approached and the required information was obtained from him. Of course, on certain points the information gathered may not be reliable, as in the absence of any records, the head of the family had to depend on his memory and guesswork in order to give this information. However, it is hoped that even with its limited reliability, the data obtained would give a fairly useful picture of the employment pattern of the districts covered by the survey.

Now it is necessary to have some general information, quite relevant for our study, about the districts of 24-Parganas and Midnapore as our survey districts. Against the background of such information, we may go to study some general characteristics of our sample farms, as revealed by the sample survey in these two districts. So we switch over to the next chapter which gives general information about the districts of 24-Parganas and Midnapore.