CHAPTER III

METHODOLOGY
This chapter deals with the procedure adopted for the fulfilment of objectives and testing the hypothesis formulated for the study. The whole chapter is divided into two sections. The first section deals with the data source and sampling design and second one describes specification of analytical tools used to attend different objectives and test of hypothesis.

A: Data Source And Sampling Design

The study is mainly based on micro level survey and analysis. The relevant information required for the study were collected from both the primary and secondary source. The census and
sample method of survey are widely adopted in most of the social studies, however, in the socio-economic studies like this, the sample survey method is preferred because of its merits over the census method. In the present study, the sample method of survey was preferred mainly because of the limitation of resources and time of the researcher's disposal. While the selection of the district and the block under study was made purposively, a multi-stage random sampling technique was adopted for the selection of villages and sample farmers (i.e. household).

A.1: Selection of District and the Block

The district of "Varanasi" has been selected purposively. The purpose of selection is supported by relatively better orientation of the researcher to the district's agro-economic setting as it is his home district and also the district ranks second in foodgrains production in the Eastern Uttar Pradesh. Out of 22 development blocks of the district, Chandauli Block was also selected purposively because of the fact that paddy is one of the most important crop enterprise and the block is equipped with better irrigation and infrastructure network. The block is very well served by two of the major markets of the district viz. Chandauli and Bisheshwarganj markets, one unregulated and other regulated respectively.
A.2: Selection of Villages

A list of inhabited village under the block was prepared. The Chandauli Block comprises of 155 villages. This village were stratified into three categories.

The first category of villages were those where the area under paddy was below 25 per cent of the gross area sown, the second category of villages were those where the paddy occupied 25 to 50 per cent of the gross area sown and the villages in third category were those where the area under paddy occupied 50 per-cent and above of the gross area sown. A sample of two per-cent of the villages was drawn randomly. Thus a total of 9 villages came under the sample for the present study.

A.3: Selection of Farmers

From each selected village a list of owner cultivators was obtained and arranged in ascending order of the size of their operated area. Further these were stratified into three size groups namely below 1.00 hectare, i.e. small farmers, 1.00 to 2.00 hectares, i.e. medium farmer and 2.00 hectares and above, i.e. large farmers. 20 Per-cent of the farmers from each size group were selected randomly. The survey thus covers a sample of 90 farmers.
Distribution of sample farms by size groups

<table>
<thead>
<tr>
<th>Size groups (hectares)</th>
<th>Total No. of farms</th>
<th>No. of farms in each size group</th>
<th>% of Total farms in sample</th>
<th>Area covered (hectares)</th>
<th>% to total area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 1.00</td>
<td>199</td>
<td>39</td>
<td>43.33</td>
<td>26.99</td>
<td>15.74</td>
</tr>
<tr>
<td>1.00 TO 2.00</td>
<td>151</td>
<td>30</td>
<td>33.33</td>
<td>39.71</td>
<td>23.16</td>
</tr>
<tr>
<td>2.00 &amp; ABOVE</td>
<td>99</td>
<td>21</td>
<td>23.33</td>
<td>104.75</td>
<td>61.10</td>
</tr>
<tr>
<td>ALL FARMS</td>
<td>455</td>
<td>92</td>
<td>61.09</td>
<td>196.17</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Selection of Markets

Majority of farmers and the bulk of produce from Chandauli Block is disposed off in Chandauli and Bisheshwarganj markets, the former being unregulated whereas the latter one is regulated. Chandauli market is located within the block and is well connected with rail and road. Bisheshwarganj market is biggest foodgrain market of eastern Uttar Pradesh. The market is located in the heart of the city of Varanasi and is very well connected with the transport and communication facilities. In order to collect the field data connected with the marketing aspects of the study, these two market have been selected for the present study.
Method of Survey

The present study is based on both the secondary and the primary data. The secondary information related to the study was collected from various published and unpublished sources. For this, different offices and agencies were consulted as and when it was required. However, the primary data were collected through the personal interview of the sample farmers with the help of specifically designed survey schedule. The schedule of enquiry was prepared as per the demand of the study and its suitability was pretested in the area, before it was finalised. The period of enquiry pertains to the year 1989-90.

B. Analytical Tools:

The tabular method of analysis and presentation of facts was used for most of the parts of study because of its inherent quality of purporting the facts in a simple form. However, for the functional analysis, the linear and the Cog-Douglas forms of function were used. Modular form of these functions are as follows:

1. Linear function

\[ Y = a + b_1 x + b_2 x^2 + \ldots + b_n x^n \]
2. Cobb-Douglas function

\[ Y = ax^1 b^2 x^n \]

In the above two forms of the function, \( Y \) stands for the dependent variable, \( x \) represents the \( i \)th factor that is \( i \)th independent variable which may have an effect on the dependent variable. In the present study there are two sets of variables for which the above forms of the functions were tried. One set comprises with marketable surplus as dependent and proportional area under the paddy, total production of the paddy and the estimated consumption and size of family in adult units as independent variables while the other set consists of marketed surplus as dependent and the proportional area under paddy, total production of the paddy, the actual consumption and size of family in adult units as independent variables, \( a \) and \( b \) are the constants devoting intercept and regression coefficients respectively in linear function and functional coefficient and elasticity to sell/to be sold respectively in Cobb-Douglas function. The expanded forms of the functions and more details can be seen in the ensuing chapter related to the results of functional analysis. Further \( t \)-test was applied to test the significance of the effects of individual independent variable on the dependent ones.