Chapter Three

Methodology
In order to try to answer some grey areas emerging from the preceding chapter, and especially, to try to answer the question that would emerge from the last part of the previous chapter, the present research endeavour has been made in line with the study design given in the following pages of this chapter. The following are the sub-headings of this chapter:

A. Statement of the problem
B. Title of the present study
C. Objectives of the study
D. Crops selected in this study
E. Selection of villages
F. Area of study
G. Respondents in the study
H. Tools of data collection
J. Some operational definitions
K. Frame work of analysis
L. Limitations of the study

**A. Statement of the problem:**

Ever since independence, plan after plan, the Government of India has been placing sufficient emphasis on agricultural development and has been allocating substantial amount for this in the outlay of 5 year plans. Agricultural development in India has come to be synonymous with modernisation of agricultural practices,
so much so a number of agencies have jumped in to the task in this direction. Yet the total number of farmers who are getting trained under different programmes is still a poor match for the millions of farmers living in rural India. Notwithstanding this, refreshingly enough, the number of farmers involved in modernised agricultural practices to a lesser or greater degree is much higher than the number getting trained. Therefore there is a dire need to understand what is happening at the grassroots level in terms of the impact of training programmes, so that the trend of modernisation in agriculture can be made to pick up a greater tempo while such an understanding will definitely lead to a toning up of the farmers training programmes. Hence this study.

F.3 Title of the present study:

The present study, in line with the thrust of the statement made above, makes an attempt to understand as to what exactly is transpiring between the trained and untrained farmers as well as how exactly the trained farmers themselves go about their task of cultivation following their training. The precise title of the present study is: "GRASS ROOT LEVEL IMPACT OF TRAINING IN MODERN AGRICULTURAL STRATEGIES".

C. Objectives of the study:

The objectives with which the present study was set about are as follow-

1. to understand the nature of actual practice of Modern Agricultural Strategies by the trained farmers (crop wise i.e. paddy and sugar cane separately);
2. to analyse the grass root level interaction taking place between the trained farmers and their untrained counterparts with respect to Modern agricultural Strategies;

3. to know about the sources of information that are influencing the intrained farmers in the realm of agricultural modernization;

4. to understand the situation of agricultural modernisation from the standpoint of rural women of cultivating families; and

5. to be able to identify areas for grass root level action as well as for on'mg up of farmers’ training programmes.

D. Crops selected for the study:

Agriculture modernisation in India has taken in its stride a whole variety of crops and farming systems with a view to bringing about a large scale agricultural productivity. In the present study it was decided to choose one food crop and one commercial crop. Paddy was chosen as the food crop and sugarcane as the commercial crop.

i) Paddy:

Wee is the major item in the diet of half of the world's population and Paddy is one of the most important food crops in India itself. The production of rice is a predominant part of agriculture in India and the national policy is directed towards self-sufficiency in paddy cultivation. Paddy is the most important extensively grown staple food crop occupying 42.3 million hectares representing 40% of the total area under cereal crops.
In Tamilnadu the area cultivated under rice is 21.1 lakh hectares with a production of 6.5 million tonnes during 1991-92. The availability of an adequate supply of rice and other food commodities means more than simply providing for people's nutritional needs; rice has economic importance in local and international trade with significant political and social implications and for many people rice production is an integral part of their culture.

At present major thrust is being given to rice production to get higher yield per hectare. All the districts in Tamil Nadu are having paddy cultivation as a primary one. Also, the urgent need to increase food production to meet the requirements of a rapidly growing population is widely recognised.

ii) Sugarcane:

Being a commercial crop, the sugarcane farmers are considered to be progressive ones among the rest in a village. Sugarcane is an important crop and it accounts for about two-thirds of the world sugar production. Sugarcane occupies a pivotal position in India's agriculture economy. Grown over about 2 per cent of gross cropped area, it contributes 7 per cent of total value of agricultural output in the country. About 25 million growers are engaged in sugarcane cultivation. Sugarcane sustains the country's second largest agro-industry & provides employment to over 4 lakh people through about 400 sugar factories scattered in different parts of the country.

Sugarcane is one of the crops which attracts a lot of attention by the central and state governments, because of its foreign exchange value. This is not
only because of the revenue it earns for the governments, but is also a symbol of agricultural prosperity of a given state, district, taluk or a region.

**E. Selection of the villages.**

The data compiled in the study is of primary nature collected through the use of a pie-tested questionnaire administered directly to the study samples. For the purpose of finalising the list of respondents in the study, the following method was adopted.

Dindigul Anna District was chosen as the universe of study; two blocks of the district were pinned down on the basis of the proven performance in agricultural productivity. One of the blocks chosen was noted for paddy cultivation and the other noted for the cultivation of sugarcane. The villages in each of the selected blocks were listed and categorised into two groups on the basis of the irrigational strength/weakness. Thus in the final tally, four villages were identified for the purpose of carrying out the research.

**F. Area of study:**

As per the method described under section E above the following four villages* were selected for the present study:-

* Pseudonyms have been adopted for all the study villages in order to conceal their identity.

In all tabulations of the data in the present study as also through the interpretation, abbreviations have been used to refer to the villages, (see next page)
1. Keeranur (PIK)
2. Thuv ah man (PUT)
3. Kalluthu (SIK)
4. Andipatti (SUA)

The abbreviation mentioned within the parenthesis for each village bears the following connotation:

1. First letter refers to the crop selected for study i.e. "P" for paddy, "S" for sugar cane.
2. The second letter refers to the irrigational status of the village i.e. "T" for good irrigational facilities, "U" for poor irrigational conditions.
3. The third letter in the abbreviation is the first letter of the pseudonym of the study village.

(a) Keeranur is located at a distance of 1.2 kilometers on the western side of the GRI campus. This village has a total of 1800 households out of whom 800 households are paddy cultivators. This village possesses the following facilities;

1. Primary school & Higher secondary school
2. Post Office
3. Community Hall
4. T.V. & Radio
5. Borewell
6. Well
7. Transport
8. Primary Health Centre
b) Thuvariman is located at a distance of 20 kilometers on the Western side of the GRI campus. This village has a total of 1600 households out of whom 800 households are paddy cultivators. This village today possesses the following facilities:

1. Primary School
2. T.V.& Radio
3. Borewell
4. Balwadi

c) Kalluthu is located at a distance of 24 kilometers on the North Western side of the GRI campus. This village has a total of 1500 households out of whom 98 households are sugarcane cultivators. This village today possesses the following facilities:

1. Primary School
2. Post Office
3. Community Hall
4. Sugarcane growers forum
5. Cooperative Bank
6. Bank (Canara Bank)
7. Sugarcane development office
8. Agro-service centre
9. Primary Health Centre

d) Andipatty is located at a distance of 30 kilometers on the North Western side of the GR campus. This village has a total of 220 households out of whom 92 households are sugarcane cultivators. This village today possesses the following facilities:

1. Primary School
2. Radio & T.V.
3. Borewell
4. Balwadi
5. Community Hall

**G. Respondents in the study:**

In each of the four villages, the farmers who had been exposed to training/orientation in modern agricultural methods were identified to begin with. From the rest of the farmers in the village an adequate number was selected through the stratified random technique. The method followed was to identify first among the rest of the families those involved in cultivating the particular crop (paddy or sugar cane as the case may be). Wherever the number of these families was much larger than the size of the trained farmers sample, matching was done based on the following characteristics. (In the order of importance):
1. Extent of land and irrigability of land:
   Marginal and small; irriguous and non-irriguous lands *
2. Family size inclusive of the sexwise identity of children; and
3. Age of the respondent.

While matching the trained farmers sample with the cultivators in the general population, no sacrifice was made with the first two characteristics as they were considered rather crucial. With respect to age, however, wherever one-to-one matching was not possible, individual with one year above and one year below were both included in the sample.*

In actual sampling experience no matching was needed in the case of SIK and SUA; because the numbers available were small all of them were included in the study. Only in the case of PUT the matching as described above needed to be resorted to. And in the case of PIK, because the number of paddy cultivators were too large, a five percent sample was drawn through stratified random technique. The stratification had to be resorted to in order that there would be some weightage in favour of males in view of the fact that their representation among the trained was much higher than the women. Below are given in tabulated form the sample sizes of the present study.

* See serial J further in this chapter for the operational definitions of these terms
** For want of sufficient numbers in the study villages, big farmers were omitted in the study. This researcher, in his capacity as, CTO at KVK, has the first hand experience of extremely limited participation by big farmers. (See page 83 foot note)
# Paddy cultivators’ sample

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Category of farmers</th>
<th>Name of the Village</th>
<th>Irrigous</th>
<th>Non-irrigous</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
</tr>
<tr>
<td>1.</td>
<td>Trained</td>
<td>PIK</td>
<td>33</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>2.</td>
<td>Untrained</td>
<td>PIK</td>
<td>19</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>3.</td>
<td>Trained</td>
<td>PUT</td>
<td>18</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>4.</td>
<td>Untrained</td>
<td>PUT</td>
<td>23</td>
<td>7</td>
<td>14</td>
</tr>
</tbody>
</table>

# Sugarcane cultivators’ sample

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Category of farmers</th>
<th>Name of the Village</th>
<th>Irrigous</th>
<th>Non-irrigous</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
</tr>
<tr>
<td>1.</td>
<td>Trained</td>
<td>SIK</td>
<td>29</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>2.</td>
<td>Untrained</td>
<td>SIK</td>
<td>22</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>3.</td>
<td>Trained</td>
<td>SUA</td>
<td>12</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>4.</td>
<td>Untrained</td>
<td>SUA</td>
<td>24</td>
<td>7</td>
<td>18</td>
</tr>
</tbody>
</table>

**Note:** For the distinction between irrigous and non-irrigous lands see chapter on methodology section 1.
H. Tools of data collection:

(i) The major tool of data collection was a 10/20-items interview schedule with the relevant sub-questions for each item. After pretest the schedule was used for the major data collection with trained and untrained farmers*

(u) Anecdotal notes:

A post graduate in Rural Sociology was oriented on the design of the present study and was used for conducting group interviews with the KVK training staff. He sat in separate sittings with the Training Associates and Training Assistants. The theme of these group interviews was to make the training personnel narrate their training experience both on and off the campus- based on their interactions with the trained and untrained farmers.

The participants in these group interviews were guided to narrate their anecdotes on issues related to the broad realm of agricultural modernisation as the process takes place at the grass roots level. Many foot notes of the chapter on analysis in this research dissertation have been drawn from these anecdotal notes.

* see annexure -1 for the fascimile of the interview schedules used in the study.

* See Ch. Radha Krishna Murthy et al. “Communication Behaviour of Paddy Growing Farmers in Guntur District of Andhra Pradesh”, The Andhra Agricultural journal. 40(1 to 4) 34-39, 1993 in which the authors describe the reservations the big farmers have in grass root level communication with small and marginal farmers
(iii) Small group discussions (Audio-recorded).

Two small group discussions were held and groups were composed trained as well as untrained farmers. The discussants were randomly drawn from a batch of trainees attending a training programme relevant to the crop at KVK. They belonged to the same block in the district that has been selected for this study. Two such small group discussions were held: one for paddy and another for sugarcane.

(iv) Case study interviews:(Audio-recorded)

Two progressive farmers were selected for case study interview: one was drawn from PIK and other from SIK i.e. one for paddy and another for sugarcane. They were both well recognised as cultivators of the particular crop in their own village. And also they have been in constant touch with the training programmes of KVK. As at the time of study they have been following all the eight technologies that have been included in the current study design.

Because these farmers have been functioning as convenors of farmer’s groups at the village level, their views were considered very valuable for a pragmatic understanding of the grass root level communication patterns. Therefore in the case studies these two farmers were made to speak out on all the aspects related to Modern Agricultural Strategies that they considered relevant concerning the interaction between the trained and untrained farmers.

**J. Some operational definitions:**

(i). Trained Farmers:

Trained farmers have been defined in this study as those cultivators from the villages (in this case, cultivators of paddy or sugar cane) who have attended any of the following training programmes:
a. Farmer s Training programmes organised under T & V system;
b. Demonstration - cum - training programmes
   (irrespective of the organising agency);
c. Training programmes organised by KVK.

For any given village, but for the "trained" farmers identified in line with the above definition, the rest of the cultivators of the particular crop have been regarded as "untrained' even though they have "gathered' information through other sources and are practising one or more of the modern technologies.

(ii) Irriguous land:

Irriguous land has been defined as that kind of land under cultivation which has sufficient supply of water for irrigational purpose either in the form of ground water or due to its locational proximity to source of water like dam, canal etc. (head reach).

(iii) Non-irriguous land:

Non-irriguous land has been defined as that land of land under cultivation which is deficient in ground water as also at the tail end of the canal irrigation system. It is apparent that farmers with such type of lands are at the mercy of either the rain-god or the other cultivators who are better placed in this regard.
iv). Modern Agricultural Strategies:

The term 'Modern' in the expression "Modern Agricultural Strategies" has been seen and defined in a relative sense in the present study. All those methods that are "new" to the traditional ways of cultivation have been included under this so long as the input of a training programme for farmers includes such a technology. This study has recognised eight such.

K. Frame work of Analysis:

The variety and nature of responses were not readily amenable for a convenient scoring pattern. Therefore no statistical method could be applied in data analysis.

The analysed data has been tabulated with a view to bringing out comparisons of the following types;

1. between the trained farmers and the untrained farmers;
2. between sufficiently well irrigated area and relatively poorer irrigated area; and
3. between a food crop (paddy) and a commercial crop (sugarcane).

* wherever reference is made to agricultural modernization in terms of strategies, the expression "Modern Agricultural Strategies" (MAS) has been used. This has been done so throughout this report wherein the reference is meant to the technologies mentioned above unless otherwise spelt out. Throughout, wherever the expression "agricultural modernisation" for "modernisation in agriculture" has been used reference is meant for the general process including or excluding the above mentioned technologies.
In view of the small number of women respondents who could be included in the study, comparison between men and women was restricted to the minimum.

L. Limitations:

(i) It must be mentioned here, that the present study was limited to only eight technologies-, there is no contention on the part of the researcher either that there are no more technologies beyond the list or that these are the most important. Following justifications are offered as responsible for delimiting the list of technologies:

1. The need for shortening the list in order to contain the same within the framework of a viable study design.
2. In a way the pre-test indicated a delimitation because the study involved mainly a comparison between the trained and the untrained farmers.
3. In view of the selection of two crops for study the list of technologies, had to run preferably common to both the crops.

(ii) One major limitation of the present study has been that the researcher has clone it on a part time basis and thus could not give more time for first hand observations and interactions at the grass root level. However, major part of this is offset by the fact that as the Chief Training Organizer of KVK, this researcher has been continuously exposed to a whole diverse groups of farmers of the district as they come for attending the training programme. Another limitation has been with respect to money i.e. in the sense that the study was not supported
by any financial assistance and no investigators could be appointed for carrying out
the data collection.

Further, there has been a time constraint in the form of keeping the
researcher busy with the organisation of training programmes. Devoting more
time than what was actually done would have perhaps led to a deeper insight into
the grass root level issues. Another notable limitation has been in the selection of
crop: paddy and sugarcane do not quite represent the scene of modern agriculture
in Dindigul Anna district but yet these two crops were chosen for study for the
value they hold in terms of generalisation in the realm of agricultural
modernisation.