Chapter- 2

METHODOLOGY
AND RESEARCH DESIGN

Approaches to Data Collection
Approaches to Impact Analysis
Sampling Plan
Research Limitations
Chapter 2

METHODOLOGY AND RESEARCH DESIGN

2.1 Introduction

To investigate the proposed objectives and verify the hypothesis at field level, a sample survey was undertaken following multi-stage purposive random sampling design in selection of SHGs in the study area. Factual opinions were collected from the participating functionaries of the programme such as Banks, Government Departments, NGOs and the common public. A combination of both the analytical and descriptive design was employed for the present study. In the following section some of the approaches employed towards data collection aimed at maximizing the accuracy of the study are elaborated.

2.2 Approaches to Data Collection

A planned approach has been employed for data collection so that the facts that are near to reality and free from aberrations are elicited for impact evaluation. The data were obtained from primary as well as secondary sources. The primary data were collected by conducting a survey. The secondary data were collected from the NABARD's publications, Banks' publications and other Governmental/Non-Governmental Organisations' publications. The primary data were obtained by administering a pre-tested schedule designed for the study. Wherever necessary, the collected data from both the primary and secondary sources have been compiled and presented in the form of tables and charts to make the presentation of the study more impressive. Some of the typical data collection methods employed for study are presented in brief in the ensuing section.
2.2.1 **Data Collection Methods**

Some of the methods employed for the purpose of data collection are;

1. Observation method
2. Questionnaire method
3. Mailed Questionnaire method
4. Telephone Interview

By employing the **Observation Method**, an attempt has been made to collect the requisite information personally through observation. With sufficient experience and exposure in the field of microfinance for about 15 years the researcher was adequately skilled and knowledgeable to elicit useful quality primary data.

**Questionnaire Method** as is quite popular was useful while personally interviewing individuals in structured format both to the convenience of the interviewee and the interviewer. By using friendly discussions, this questionnaire method could facilitate in extracting accurate and relevant data. This method has provided flexibility and supervision and control possibility for the interviewer while ensuring authenticity of the response. Questionnaire is indeed the heart of primary data collection. In view of this, questionnaires were designed with utmost skill. The questions are clear, simple and to the point. They are so organized from the point of view of the respondent’s level of understanding of the subject of inquiry. Questionnaires are structured, sequenced as short as possible.

The **Questionnaire-1** has been developed keeping in mind the nature of information required such as;

1. Age level of SHG
2. Size of the group
3. Locality of the group: rural / semi urban / urban
4. Education level of the members of SHG
5. Who is the promoter? Bank / NGO / GOVERNMENT
6. Activity of SHG: Agriculture and Allied Activities / ISB / RCI
7. Category of the group: SC/ST / OBC / GEN
8. Gender of the group: male / female
9. Regularity of Savings of the group: weekly / monthly
10. Per month income of the members of the group: before SHG / after SHG
11. Per annum income of the members of the group: before SHG / after SHG
12. Total savings by the group
13. Loans availed by the group
14. Rate of Interest charged by the bank and by the SHG
15. Loan cost incurred
16. Transaction cost incurred
17. Welfare cost involved
18. Recovery performance by the group
19. Loans outstanding
20. Profit earned
21. Loss incurred if any
22. Loan utilization pattern: consumption/production/repayment of other loans / investment
23. Per Family food expenses: before and after formation of SHG
24. Per Family Non-Food expenses: before and after formation of SHG
25. Common assets if any
26. Regularity of meetings of the group: weekly/fortnightly/monthly
27. Social status: improved/not improved after SHG
28. Extension programmes conducted
29. Opinion of other villagers and opinion makers around

A format of Group Questionnaire-1.A is placed in Appendix-2.1.
Further, in order to elicit the views of the office bearers of the Group Questionnaire-1.B has been designed and a format of Questionnaire-1.B is placed in Appendix-2.2.

Questionnaire-2 has been developed to elude the expert opinion of Microfinance Practitioners [NGOs]. A format of Questionnaire-2 is placed in Appendix-2.3.

Questionnaire-3 has been developed to bring forth the expert opinion of the Linkage Bankers. A format of Questionnaire-3 is placed in Appendix-2.4.

By means of Mailed Questionnaire Method, different sets of questionnaire were framed in order to bring out the valued and relevant information especially from the microfinance practitioners, group leaders, federation leaders, bankers and NGOs. This method has helped in saving the valuable time of both the interviewees and the interviewer. Further, this method could facilitate the interviewees to form their considered views and opinion. This method could provide wider and more representative coverage to the primary data. Further, the Interviewer bias is avoided besides providing adequate time for the interviewee to shape his/her views and opinion on the subject. While mailing the questionnaires introductory letters were sent so that recognition of the importance of the respondent is acknowledged whereby he/she feels renowned about his/her accomplishment in the SHG activity.

Telephonic Interview Method has been useful in obtaining valued opinions and views from elite personalities involved in microfinance activity so that their time constraint is overcome for elaborate interview or for answering the mailed questionnaire. This quick way of obtaining data was of low cost and requirement of field assistance was overcome.

Further, Pre-testing of the Questionnaire was also made in order to ascertain the effectiveness of the questionnaire in eliciting the required data for this study. Pre-
tests were conducted in an informal manner so that suitable reviews could be made in order to establish clarity, simplicity, relevancy, accuracy and prioritization of questioning.

2.2.2 Primary Data Collection

Efforts were made to extract the primary data by attending group meetings and participating in workshops on the subject. Field investigations and direct observations were undertaken in order to identify and extract quantitative as well as qualitative changes that were taking place and to elicit the perspectives of the poor. Key stakeholders are covered during the discussions.

In order to collect the first hand information about the functioning of SHGs the following activities were undertaken;

- Broad interactions with Bankers who are actively involved in the SHG-Linkage programme.
- Detailed consultations with the NGOs who are involved in the Microfinance activity.
- Direct observations of SHGs operations at the grass root levels.
- Visits to homes and micro-enterprises of borrower-members
- Interviews with others: husbands and others in the village communities.
- Discussions with non-members and new members
- Participation in workshops on SHG-bank linkage organized by NABARD, where participants engaged in microfinance activity were invited from different states and districts and recording their perceptions and field experiences.
• Participation in block level and village level programmes on SHG-bank Linkage conducted by erstwhile Sahyadri Gramin Bank in Shimoga district and obtaining the views and experiences of the operational level workers as well as microfinance beneficiaries.

• Visit to Bankers Institute for Rural Development [BIRD] - a premier institute of rural development being managed by NABARD (which is spearheading lot of conceptual work on linkage of SHGs with Banks) and gained national level perspectives about the microfinance activity.

• Some interviews of NABARD officials, district level bank officials were conducted to capture the expert views on the microfinance activity.

In the following section it is attempted to briefly explain how the secondary data have been collected.

2.2.3 Secondary Data Collection

Secondary data are the data collected and processed by some other agencies on the subject of SHGs. Some of the sources of secondary data are:

• existing literature and data in websites

• various publications of Central, State and Local Governments

• various publications of international bodies like UNO, FAO, UNESCO, UNDP, WHO, WORLD BANK, WTO and others

• various publications of national institutions like NABARD, RBI, BIRD, CAB, NIRD, NIBM and other agencies

• publications of various NGOs such as MYRADA, BASIX, SEWA, PRADAN, PRAYOG, RMK and other organisations
While the qualitative aspects of the study can be observed out of the researcher's vision and experience, the quantitative aspects need to be evaluated in conformity with the prevailing standard approaches for quantification of impact assessment. In this direction the following section explains how the efforts were made towards selection of good indicators for quantification of impact assessment in the study.

2.2.4 Selection of Good Indicators

Majority of indicators included in the study are “impact” indicators that establish criteria to measure the impact of the SHGs on the development of rural economy. For quantification of impacts, some of the indicators employed for impact assessment in the subject study include the following factors at the individual level in case of member of SHG:

1. Monthly income – before and after SHG intervention
2. Annual income - before and after SHG intervention
3. Savings - before and after SHG intervention
4. Credit (Loan) availment - before and after SHG intervention
5. Per Family Food Expenses (PFF Expenses) - before and after SHG intervention
6. Per Family Non Food Expenses (PFNFF Expenses) - before and after SHG intervention
7. Production levels - before and after SHG intervention
8. Asset Creation levels - before and after SHG intervention
Further, some of the indicators employed for quantification of impacts in the subject study include the following factors at the SHG activity / programme level in the district:

i. Credit-Savings Ratio - before and after SHG intervention

ii. Interest Rates on credit availment - before and after SHG intervention

iii. Repayment Performance - before and after SHG intervention

iv. Transaction costs of lending for banks

v. Transaction costs of borrowing for the poor

vi. Cost of co-ordination and management for promoters of SHGs

vii. Risk costs involved for financial intermediaries

viii. Participation of Women and Men

ix. Participation of Social Classes – SC/ST, OBC and GEN categories

The selection of indicators is based on experience of the researcher in the field of microfinance, standard approaches in impact evaluation, available information, and to a degree, common sense. The selected indicators are considered in view of their following characteristics:

• **valid**—measure what they are intended to measure and capture effects due to the programme intervention rather than external factors;

• **reliable**—verifiable and objective so that if measured at different times or places or with different people, the conclusions would be the same;

• **relevant**—directly linked to the objectives of the study in order to evaluate the impact;

• **technically feasible**—capable of being assessed and measured;
• **usable**—the indicator should be understandable and ideally provide useful information to assess programme performance and for decision-making;

• **sensitive**—capable of demonstrating changes and capturing change in the outcome of interest (national per capita income is unlikely to be sensitive to the effects of a single intervention);

• **timely**—possible to collect relatively quickly;

• **cost-effective**—the information provided by the indicator is worth the cost to collect, process, and analyze; and

• **ethical**—collection and use of the indicator is acceptable to those providing the information.

Questionnaire-1. A designed with about 29 parameters enables to quantify the impacts through the questionnaire method as it is primary data originated directly from the sample groups and their members during the field visits.

Some of the criteria planned for evaluation in this study based on the above mentioned data collection methods are mentioned in the ensuing paragraph.

### 2.3 Approaches to Impact Analysis

To make a proper economic impact evaluation of the SHGs on the development of rural economy particularly with reference to the study area suitable criteria for evaluation and appropriate econometric techniques are required to be used in order to bring out flawless results from the analysis. Accordingly in the following sections the criteria for evaluation and the econometric techniques employed for impact analysis are described in brief.
2.3.1 Criteria for Evaluation include factors like:

1. Ease of Adoption by All Stakeholders
2. Quick Replicability
3. Smoothness and Ease of Providing Credit to the Poor
4. Capital Formation
5. Credit – Savings Ratio
6. Interest Rates
7. Repayment Performance
8. Production Levels
9. Impact on Poverty Levels
10. Improvement in Asset Creation Levels
11. Impact on Food Security
12. Impact on Non-Food Expenses
13. Outreach of impact of SHGs
14. Transaction Cost of Lending for Banks
15. Transaction Cost of Borrowing for the Poor
16. Costs of Co-ordination and Management for Promoters
17. Risk Cost of Funds for financial intermediaries

2.3.2 Econometric Techniques employed for Analysis

Quantification of the impacts for before and after impact situations of any intervention is normally attempted using the most popular statistical tool i.e. Paired-Sample T-Test. The Paired-Samples T-Test procedure is used to test the hypothesis of no difference between two variables. It computes the differences between values of the two variables for each case and tests whether the average differs from 0.
Accordingly *Paired-Samples T-Test* has been used here to determine whether there is statistically significant difference between the income levels, food and non-food expenses, production and asset creation levels, savings mobilization and credit off-take levels, interest rates on borrowings and credit-savings ratio levels of the members of the SHGs: before and after the intervention of SHG approach.

Further, appropriate arithmetical techniques are also used for quantification of the results of the analysis in the study.

In order to make an impact assessment study involving huge size of the target population, it is very much required on the part of the researcher to employ a most suitable statistical tool for sampling. The sample design and the sampling technique selected for the study are explained briefly in the succeeding section.

### 2.4 Sampling plan

#### 2.4.1 Sample Design and Choice of Sampling Technique

For the subject study, all the Self Help Groups in Shimoga district constitute the relevant population. The Sampling frame constitutes the broad account of units of population i.e. different sets of SHGs in the district and it is adequately constituted to be a perfect frame that identifies each element only once.

*Proportionate Stratified Random Sampling* technique has been selected keeping in view purpose of the study, measurability, degree of precision, information about population, the nature of the population, geographical area of study, size of population, financial resources, time limitations and economy. *Proportionate Stratified Random Sampling* technique is explained below in detail.
This Sampling involves drawing a sample from each stratum in proportion to the latter’s share in the total population in order to give proper representation to each stratum thereby increase the statistical efficiency. In this method, in view of the diverse nature of data, the population is sub-divided into homogeneous groups or strata, and from each stratum, random sample is drawn. Stratification is necessitated in order to increase the sample’s statistical efficiency, providing adequate data for analysing the various sub-populations and applying different methods to different strata. Further, this has ensured representation to all relevant sub-groups of the population.

Stratification of SHGs in the district has been made on the following lines;

1. Block wise
2. Gender wise
3. Category wise
4. Age wise
5. Size wise
6. Activity wise
7. Performance wise
8. Rate of Interest wise
9. Repayment wise

Multi-staging of the population of SHGs is made into block levels and then into different parameters of significance. Size of the sample is adequate and representative in order to provide sufficiently high precision. It is believed that the larger is the sample size the higher is the precision.
2.4.2 Sample Frames

The trends of SHG movement in Shimoga district and their linkage with formal banking are presented in the form of sample frames to lay groundwork for initiating the research study. The trends are used for selection of samples as per the sample design planned as per the methodology elaborated earlier. The base figures for impact analysis are as at March 2003 as the subject study was commenced after this period. SHG-bank linkage represents the linkage of SHGs with the formal banking system by means of availment of credit. For the sake of this study, the classifications / trends are prepared / developed basing on the facts ascertained during the field visits and also based on the field experience of this researcher as a rural banker since eighteen years.

Sample frame-1: Self Help Groups and their Linkage – Block wise

Shimoga district has 7 blocks of distinct features of climate, geography, living styles and standards, economic activities, income levels and culture. In view of this, the number of SHGs formed and linked with the bank loans are required to be understood. Also, it is important to know the percentage of SHGs linked with the banks to that of the total number of SHGs in each block and thereby the district as a whole. In the district there were in all 4621 SHGs of which 2755 SHGs were linked with bank loans. The percentage of SHGs linked with the bank loans to that of total SHGs in the district is about 60%. The block wise figures of number of SHGs, the number of SHGs linked with bank loans and the percentage of SHGs linked with bank loans to the total number of SHGs is presented in Table 2-1.
Table 2.1: Self Help Groups and their Linkage - Block wise

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of the Block</th>
<th>No. of SHGs</th>
<th>SHGs linked with Bank loans</th>
<th>% to total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shimoga</td>
<td>978</td>
<td>678</td>
<td>69.33</td>
</tr>
<tr>
<td>2</td>
<td>Bhadravathi</td>
<td>875</td>
<td>456</td>
<td>52.11</td>
</tr>
<tr>
<td>3</td>
<td>Shikaripura</td>
<td>780</td>
<td>476</td>
<td>61.03</td>
</tr>
<tr>
<td>4</td>
<td>Soraba</td>
<td>579</td>
<td>357</td>
<td>61.66</td>
</tr>
<tr>
<td>5</td>
<td>Sagara</td>
<td>569</td>
<td>325</td>
<td>57.12</td>
</tr>
<tr>
<td>6</td>
<td>Hosanagara</td>
<td>390</td>
<td>210</td>
<td>53.85</td>
</tr>
<tr>
<td>7</td>
<td>Thirthahalli</td>
<td>450</td>
<td>253</td>
<td>56.22</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>4621</td>
<td>2755</td>
<td>59.62</td>
</tr>
</tbody>
</table>

Master Sample Frame:

*Stratified Proportionate Random Sampling of SHGs - Block Wise / Gender Wise / Size Wise / Category Wise*

Gender is an important aspect of analysis in impact study. Accordingly, in this study, SHGs are studied according to the gender viz., women groups, men groups and mixed groups. Size of the group is also an important parameter of impact analysis. As such, it is planned to understand the distribution of SHGs according to their size. Size of the SHG means the number of members constituting the group. Normally, the size of the group ranges from a minimum of 10 to maximum of 20 as is uniformly practiced by all the types of promoters of SHGs. Here, two sets of size wise classifications are considered viz., 10-15 size and 16-20 size.

In order to understand the trends of organisation of groups according to the social classes the groups are broadly classified as SC / ST, OBC and General. SC / ST mean those groups which consist more number of members belonging to Scheduled Castes and or Scheduled Tribes categories. OBC mean those groups, which consist
more number of members belonging to Other Backward Classes. General [indicated in the table and elsewhere in the study as GEN] mean those groups, which constitute more number of members belonging to those classes other than those mentioned above.

It is also felt necessary to study the distribution of loans issued by the SHGs in terms of rates of interest charged by them on their members. Further, the success of any microfinance programme hinges on the loan repayment performance. In order to understand the trends of loan repayment performance of the groups linked to the age of the groups an attempt has been made to present the distribution of the groups accordingly in the master sample frame presented here below.

Master Sample frame in Table 2.2 presented here below has been finalized after considering the above mentioned dimensions of SHGs and keeping in mind the various criteria such as the purpose, measurability, degree of precision, size of the population, time limitations and the nature of the SHGs.
### Table 2.2: Master Sample frame

<table>
<thead>
<tr>
<th></th>
<th>Bhadravathi</th>
<th>Hosanagara</th>
<th>Sagara</th>
<th>Shikarpur</th>
<th>Shimoga</th>
<th>Soraba</th>
<th>Thirthahalli</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>SLT</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>OBC</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>GEN</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>WMN</td>
<td>80</td>
<td>16</td>
<td>35</td>
<td>7</td>
<td>52</td>
<td>12</td>
<td>72</td>
<td>14</td>
</tr>
<tr>
<td>SLT</td>
<td>18</td>
<td>3</td>
<td>8</td>
<td>1</td>
<td>11</td>
<td>2</td>
<td>16</td>
<td>3</td>
</tr>
<tr>
<td>OBC</td>
<td>23</td>
<td>5</td>
<td>10</td>
<td>2</td>
<td>15</td>
<td>3</td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>GEN</td>
<td>39</td>
<td>8</td>
<td>17</td>
<td>4</td>
<td>26</td>
<td>7</td>
<td>38</td>
<td>7</td>
</tr>
<tr>
<td>Mxd</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>ST</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>OBC</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>GEN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>85</td>
<td>20</td>
<td>37</td>
<td>8</td>
<td>56</td>
<td>14</td>
<td>77</td>
<td>18</td>
</tr>
<tr>
<td>G-total</td>
<td>105</td>
<td>45</td>
<td>70</td>
<td>95</td>
<td>120</td>
<td>70</td>
<td>50</td>
<td>555</td>
</tr>
</tbody>
</table>

### Table 2.2A: Classification of Sample Groups according to Master Sample Frame

<table>
<thead>
<tr>
<th>SL No.</th>
<th>Sample Category</th>
<th>No. of Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>According to Size</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>All Sample Groups</td>
<td>555 Groups</td>
</tr>
<tr>
<td>2</td>
<td>Groups of Size 10-15</td>
<td>454 Groups</td>
</tr>
<tr>
<td>3</td>
<td>Groups of Size 16-20</td>
<td>101 Groups</td>
</tr>
<tr>
<td></td>
<td>According to Gender</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Women Groups</td>
<td>510 Groups</td>
</tr>
<tr>
<td>5</td>
<td>Men Groups</td>
<td>37 Groups</td>
</tr>
<tr>
<td>6</td>
<td>Mixed Groups</td>
<td>8 Groups</td>
</tr>
<tr>
<td></td>
<td>According to Social Classes</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>SC / ST Groups</td>
<td>129 Groups</td>
</tr>
<tr>
<td>8</td>
<td>OBC Groups</td>
<td>157 Groups</td>
</tr>
<tr>
<td>9</td>
<td>General Groups</td>
<td>269 Groups</td>
</tr>
</tbody>
</table>

36
Graph 2.1: Sample Groups according to Size

Details about legends in the Pie diagram:
1 => Groups of Size 10-15 = 454 Groups
2 => Groups of Size 16-20 = 101 Groups

Graph 2.2: Sample Groups according to Gender

Details about legends in the Pie diagram:
1 => Women Groups = 510 Groups
2 => Men Groups = 37 Groups
3 => Mixed Groups = 8 Groups

Graph 2.3: Sample Groups according to Category of members

Details about legends in the Pie diagram:
1 => SC / ST Groups = 129 Groups
2 => OBC Groups = 157 Groups
3 => General Groups = 269 Groups
2.4.3 Research Limitations:

This research has limitations that are ought to be taken into consideration. First, similar to comparable previous studies about the impact evaluation of SHGs, it is very difficult to construct a statistically representative sample given the large size of the population (No. of SHGs in the area) and its geographic extension. However, in order to mitigate this limitation to an extent, *Proportionate Stratified Random Sampling* is employed involving a sample size of 555 SHGs, which accounts for about 12% of the population of the sample.

Second, this study countenances the difficulties similar to previous researches regarding the exactness or accuracy of the data that are not systematically collected by the implementing agencies. For example, banks, Government Departments and most NGOs do not collect information about the longevity of SHGs, which is the best indicator for their sustainability.

Third, this study believes that the obvious factors of economic impact on rural development such as the role of Government, the effect of inflation and resource endowment in the study area are limited or the same when compared to the pre-SHG situation and the post-SHG situation. This assumption is prompted by the most popular understanding that SHGs have had a lasting impact on the economic living of the poor in the area and dominate the other variables of analysis for economic development.