5) Methodology and Work Plan

- **Methodology:**

  The present data is based on both primary and secondary source. Primary data is obtained from agriculture officer and farmers. The secondary data is collected from various journals research articles, books and annual report of Ghodganga Co-operative Sugar mill. The data information of Sugarcane cultivators will obtain from Agriculture officer, Tahasildar, Talathi and Ghodganga Sugar Mill, Nhavara, Tal. Shirur, Dist. Pune (M.S.)

  Considering a village as a unit for the Shirur tahsil in Pune District of Maharashtra State, the data required for different aspect of the study area is collected from the village tahsil office, Shirur, Department of Irrigation, department of soil conservation and other department of the Shirur tahsil and agriculture departments. The data portioning to the period from 1980 to 2010 and the provisional statistics of 2011 are considered for the study. Moreover, some information regarding sugarcane cultivation will be collected through the group interviews of the sugarcane growers and knowledgeable persons. A questionnaire will be prepared for collecting information from agriculture officer, talathi and sugarcane grower also.

- **Computer and GIS Techniques:**

  For preparation of summery tables from matrix of village wise score of sugarcane of 17 parameters computer techniques have been found suitable. The analysis and integration of multivariate and multi date data may be carried out and presented by using GIS techniques. The vector based GIS software grammars will be used to prepare maps to show intraregional variation.

- **Workplan:**

  - **First six month**
    1) Literature survey.
    2) Collection of primary data.
    3) Interview of farmers.
4) Mapping.
5) Sketching.
6) Photographs.
7) Use of Auto-Cad to draw maps.
8) Interview of Sugarcane workers.
9) Data collection from Kukadi Project and Vasantdada Sugar Institute, Manjri.

- **Second six month**
  1) Use of different statistical methods.
  2) Use of GPS.
  3) Mapping of different sugarcane production division of Tahsil.
  4) Visit to sugarcane fields.
  5) Visit to sugar factory and data collection.
  6) Data collection from fertilizers’ shops.
  7) Data collection from soil and water conservation department, Govt. of Maharashtra.
  8) Information collection from Ghod and Kukadi project.

- **Third six month**
  1) Analysis of data collected by various statistical methods.
  2) Preparation of maps with the help of AutoCAD map.
  3) Comparison of various method used by farmers in cultivation of sugarcane.
  4) Information from VSI of New High yield varieties of sugarcane.
  5) Collection of best practices of sugarcane cultivation introduced by PADEGAON sugarcane research center.

- **Fourth six months**
  1) Writing of research papers and publication of research papers.
  2) Thesis Writing.
  3) Typing and binding of the research thesis.
  4) Submission of thesis.
**Significance:**

1. To carry out research work for diversifications and value addition in sugarcane productivity.
2. To survey and summarize the existing knowledge on the effect of meteorological factors on the growth, development and yield of the sugarcane crops.
3. Remedies to improve wasteland for sugarcane cultivation.