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I N T R O D U C T I O N

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### 1.1 THE PROBLEM :

The cultivation of grape-vine, though started during 13th century in Maharashtra, is the recent phenomena<sup>on</sup> in South Maharashtra. The semi-arid areas of Sangli, Satara and Solapur districts have emerged out as significant areas for grape-vine cultivation. The cultivation of sugarcane, on irrigated land has been replaced by this crop considerably due to its lucrative gains in this tract. The arid-upland climate of this zone has promoted the development of grape-vine cultivation. The tahsils of Tasgaon and Miraj have attained significant position in regards to area and production of this crop during the last two decades in Sangli district. However, the limited water supply for irrigation is the main constraint for such cultivation in the region. The eastern semi-arid parts of Miraj tahsil have the dominance of well irrigation where farmers have devoted their irrigated lands to grape-vine cultivation. Although western parts (Krishna flood plain) of this tahsil have assured irrigation facilities, grape-vine cultivation is insignificantly developed due to deep black soils and poor drainage conditions. The existing water resources are economically used for the cultivation of grape in ~~the~~ eastern and northern parts of the study region. However, the regional variations are observed in the growth, productivity, concentration, crop economy, marketing of this crop. The present work is concerned with the spatio-temporal variations in grape vine cultivation as agricultural geography deals with the spatial

variation in agricultural patterns. The cause-effect relationship is examined in the work. The commodity approach is adopted to analyse the detailed spatial pattern of grape cultivation at micro level (village) in Miraj Tahsil. The study also deals with the growth, requirements, distribution, concentration, production, processing, economy, and marketing of grape.

Thus present work deals with the spatio-temporal dimensions of grape-vine cultivation in Miraj tahsil. The grape-vine cultivation though risky, due to climatic hazards, is lucrative as compared to other cash crops like sugarcane and cotton in the region. Before seventies the diffusion of this cultivation was slow due to the constraints of marketing, transportation, poor farm technology. However, the farmers are awared about these aspects and new farm technology is being adopted by them. The small farmers are turned towards such cultivation. Since income level of farmers is increased, the farmers are able to invest more for the development of agriculture and to improve his socio-economic status. Thus, the earnings from grape-vine cultivation have made favourable impact on the rural economy of the region.

The geographical analysis is undertaken here for the following reasons.

- 1) The study of grape-vine cultivation has remained untouched in the studies of agricultural geography of the state.
- 2) Though the crop occupies less area (0.73%) of the total cropped area it has influenced the regional economy to a

considerable extent due to high returns per hectare.

Thus, it has become boon to the farmers in dry areas as this crop requires less water as compared to sugarcane.

- 3) There are spatio-temporal variations in regards to the area, concentration, production, consumption, marketing and economy of grape cultivation in Miraj tahsil.
- 4) The extent and nature of irrigation has determined the development of grape-vine cultivation. Thus, regional pattern of grape cultivation corresponds with irrigation facilities.
- 5) The application of fertilizers and manures varies within the boundaries of the region which is closely related to productivity of this crop.
- 6) The <sup>cost</sup> of production varies spatially in the region and the marketing structure of grapes is unevenly distributed in the region.
- 7) The author is familiar with grape-vine culture from his childhood.

## 1.2 SELECTION OF THE REGION :

The present work proposes to analyse grape-vine cultivation from geographical point of view in Miraj tahsil of Sangli district in South Maharashtra (Fig.1.1). Miraj tahsil is one of the agriculturally developing and leading tahsils in Sangli district for grape-vine cultivation. The grape-vine occupies 565 hectares of the area in the tahsil. Agriculture is the basic

# MIRAJ TAHSIL LOCATION & INDEX OF VILLAGES

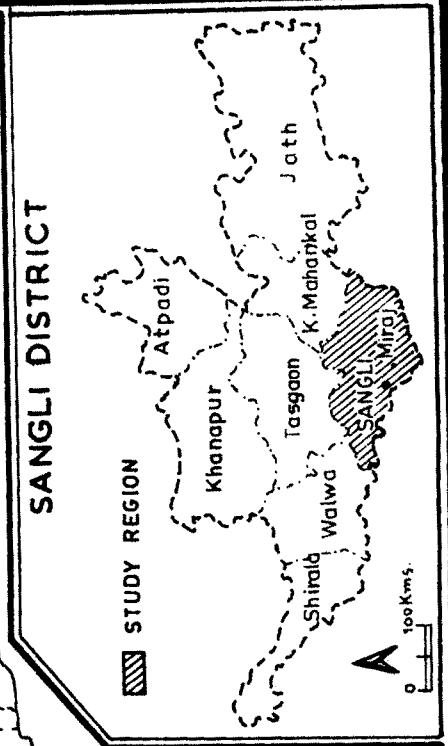
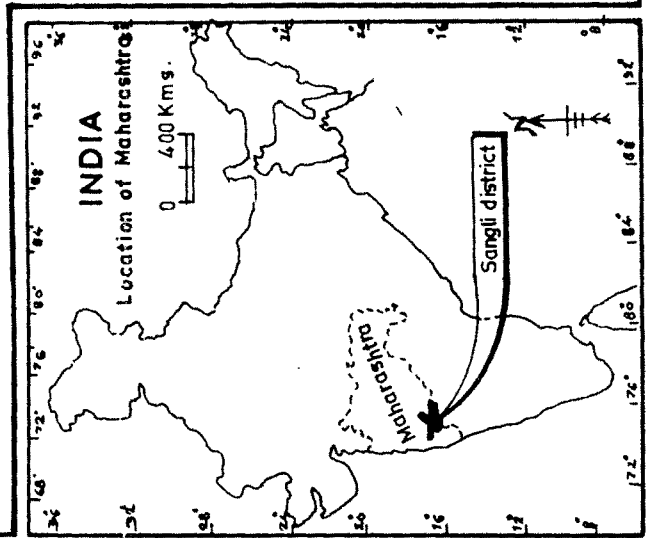
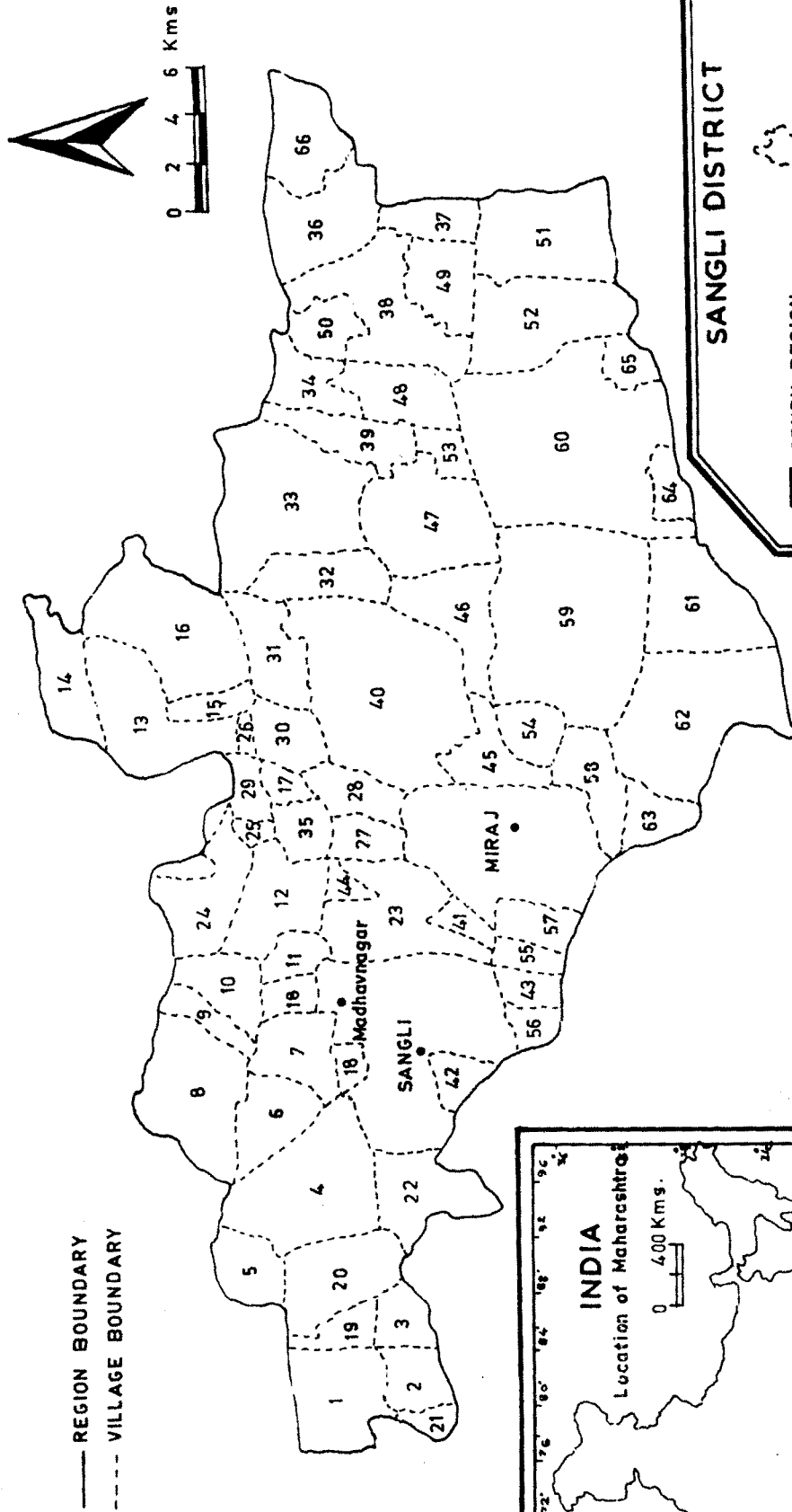


Fig. 1-1

MIRAJ TAHSIL - LOCATION & INDEX OF VILLAGES

Location Code No.	Name of village	Location Code No.	Name of village
1	Dudhgaon	22	Samdoli
2	Sherikavathe	23	Kupwad
3	Kavathe Piran	24	Kakadwadi
4	Kasabe Digraj	25	Rasulwadi
5	Tung	26	Mhaisal (Sangli)
6	Mouje Digraj	27	Savali
7	Karnal	28	Tanang
8	Nandre	29	Kharkatwadi
9	Kavji Khotwadi	30	Kalambi
10	Bisur	31	Siddewadi
11	Budhgaon	32	Gundewadi
12	Kavalapur	33	Khande Rajuri
13	Soni	34	Dongarwadi
14	Karoli (Miraj)	35	Kanadwadi
15	Patgaon	36	Salgare
16	Bhose	37	Junraowadi
17	Manmodi	38	Belunki
18	Padmale	39	Payapachiwadi
19	Savalwadi	40	Malgaon
20	Sambarwadi	41	Wanlesswadi
21	Mola Kumbhoj	42	Haripur

Conti..



activity of the region with 506,320 population (1981) in 69 villages and two towns. The tahsil stretches in west-east direction of which the western part falls in Krishna basin proper with deep fertile soils and perennial irrigation facilities. The eastern part is, however, affected by scarcity conditions and topographically upland in nature having dry climatic conditions. The grape-vine cultivation is mainly confined to northern and eastern parts but due to increasing scarcity conditions and lack of water for irrigation, it is sprawling towards irrigated tracts of the west wherever pedological conditions are suitable. The dense network of road transportation, availability of local and regional markets, Miraj as a railway junction, role of Grape Grower's Association, availability of different inputs and conversent nature of farmers, all have led to the development of grape-vine cultivation in the region.

### 1.3 OBJECTIVES :

The study is attempted with the following objectives.

- i) To map and examine the spatial aspects of environmental factors and landuse pattern of the region.
- ii) To map and analyse the spatio-temporal variations in the basic inputs i.e. irrigation and fertilizer application.
- iii) To examine, map and analyse the spatio-temporal patterns of grape-vine cultivation in the region. Further, to assess the relationship of different variables with grape cultivation.



- iv) To study the economy of sugarcane and grape-vine and to attempt comparative analysis of the both crops.
- v) To analyse the marketing aspects of grape in the region.

#### 1.4 HYPOTHESES :

The following hypotheses are attempted in the work.

- (1) Irrigation is the basic input which has limited the extent of grape-vine cultivation.
- (2) The application of fertilizers and manures has become essential part of grape-vine cultivation. Besides, the proportion in the use of this input is unevenly distributed in the region.
- (3) The productivity of grapes varies spatially in the region.
- (4) The net returns of grape are more than sugarcane.
- (5) Market and transportation facilities have encouraged the cultivation of grape-vine in the region.

#### 1.5 DATA BASE :

The work is mainly based on primary data which has been generated through field work. The schedules were filled in at the spot survey. The interviews and discussions with the grape growers were attempted during the visits. Village is considered as a unit of analysis in the work. For the detailed analysis of crop economy random sampling (15%) was adopted to select grape growers of different sized holdings in the case study villages. The village level data pertaining to the area under grape, per

hectare production, cost of production, income, per hectare consumption of fertilizers and manures, watertable, area under irrigation was generated through the field work. The secondary data was collected from the published records, district statistical abstracts, Sangli, census handbooks. The same was also obtained from the village revenue officers, Tahsildar of Miraj and records of private organisations.

#### 1.6 METHODOLOGY :

The year of 1986-87 was considered for investigation whereas for specific purposes the period from 1970 to 1987 was taken into consideration. The collected data through different sources were edited, processed, classified and some statistical procedures were employed. The cartographic techniques such as isopleth, choropleth were used to represent processed data. The graphs were also drawn in some cases. The charts and tables were used wherever limitations existed for mapping. Some statistical techniques, were used to calculate the indices like concentration, intensity, composite index etc. Besides, Pearson's co-efficient correlation technique was used and correlation matrix was prepared to show relationship of various variables. The details of procedure of each technique have been discussed at appropriate places in the text. Each chapter ends with the list of references.

### 1.7 LIMITATIONS :

There were some limitation of data for certain aspects. The data on irrigated crop pattern, per hectare production of crops and fertilizer consumption, seasonal fluctuations in watertable etc. were not available in published form. Many grape growers have not maintained the records like income, expenditure, marketing, production, fertilizer application, turns of irrigated water to crops etc. Most of the farmers, due to illiteracy, could not give correct and relevant information. These difficulties, however, were overcome by repeating the questions and confirming them to other farmers, discussions with educated farmers and experts. In view of scattered nature and lack of authenticity the data regarding the processing of grapes was not collected.

### 1.8 ORGANIZATION OF THE WORK :

The whole work is organised into six chapters. The first chapter opens with the introduction of the work. The second chapter presents general profile of the region dealing with physical environment and general landuse pattern. The spatio-temporal analysis of irrigation and application fertilizers and manures is the subject matter of third chapter. The fourth chapter is concerned with a detailed geographical analysis of grape-vine cultivation like, concentration, intensity, growth, agronomic practices, spatial pattern, ranking, planning factors

of grape cultivation etc. The fifth chapter deals with economics and marketing of grape cultivation. The first section of this chapter highlights the details regarding the crop economy of grape and sugarcane of three case study villages and the cost-benefit analysis is attempted. The second section studies marketing of grapes, especially, methods of marketing, prices of grapes and consumption, marketing flow, market centres. The sixth chapter is the summarization of the work. This has been followed by the list of appendices and bibliography.