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CONCLUSION

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Geographical analysis of cash crop like grape-vine is of vital importance in the context of regional economy. During the last two and half decades, Sangli district has come to occupy a significant place in grape-vine cultivation accounting for one third production of the State of Maharashtra. Owing to favourable climatic conditions recent developments in irrigation and farm technology most of the farmers are turned towards this lucrative but risky enterprises. Miraj tahsil has marked significant achievement in grape-vine cultivation during the last two and half decade. Although the proportion of this crop to total cultivated area seems to be less it has proved to be gainful to the farmers. The income level of vine cultivation has gone up as compared to sugarcane cultivation which in turn is being used for the development of agrarian structure. In fact, the cultivation of grape-vine has shown the transformation of agriculture and people's economy too.

The foregoing analysis indicates that the region under study presents varied physical characteristics which affect the nature and extent of agriculture. Moreover, the flood plains of Krishna river in ^{the} west, with its perennial nature have been shown remarkable progress in irrigation and thereby in sugarcane cultivation.

The deep black soils with their poor drainage are suitable for cane cultivation. However, recently salinity



problems of these soils have affected the productivity and consequently economy of this crop. In view of this, these soils seem to be unsuitable for grape cultivation as it requires proper drainage. The eastern and northern part of the region is upland in character with favourable pedological conditions. The grape-vine cultivation has been flourished wherever irrigation facilities are available in this zone. The scarcity of water is major constraint for the development of grape-vine cultivation in the east. Climatically the region possesses suitable temperature conditions. The clear skies during winter season has encouraged this cultivation. However, occasional climatic hazards like hail-storms, overcasted skies, cold waves etc. have hampered the grape cultivation many times.

Irrigation is the major institutional factor controlling the grape cultivation in Miraj tahsil. The eastern parts record however, more proportion than the west. The well (26.93%) and lift (73.07%) are the major sources of irrigation in the region. The watertable has been depleted and is not uniform all over the region. The field studies have manifested that the eastern zone requires more number of irrigation turns as compared to the western and middle parts due to varied soil conditions. The post rainy and pre-rainy seasons are further characterised by more requirement of irrigation water. Well is the traditional form of irrigation in the region. The number (15,036) of wells is unevenly distributed in the region. The seasonal changes in the

watertable of these wells have discouraged grape cultivation in the tahsil. The middle part of the region has recorded the watertable at greater depth (21.40 Meter) which is followed by eastern zone (19.50 meter) (Table 3.3). The spatial pattern of intensity of irrigation corresponds with the distributional pattern of grape cultivation (Fig.3.5). Owing to perennial nature of Krishna river, the flood plains have attained high intensity of irrigation. The availability of water for irrigation always determines the productivity of grape (Fig.3.7) in the region.

The application of fertilizers and manures has become an essential part of grape-vine cultivation. However, the proportion of its application varies in space and time. The nitrogenous requirements of this crop (395 to 435 kg) are rather more than potash and phosphorous contents (Table 3.5). The average intensity of fertilizer consumption of the region is about 101.94 kg per hectare for grape-vine. However, it varies spatially within the region accounting for more than 150 kg in the central parts. Such intensity during post-plantation period differs considerably in quantity of application. The high intensity during this period is more than 250 kg in the middle part. The assured irrigation has promoted the use of fertilizers. The eastern part, however, due to paucity of water has recorded low intensity of fertilizer consumption. The spatial pattern of manure application is also similar to

that of fertilizer (Fig.3.4). The fertilizer application is an essential input resulting in the increase of grape productivity (Fig.3.5). The manure application has also shown favourable increase in grape productivity in the region (Table 3.4). Usually these inputs are used twice a year after the cutting of vine yards. The quantity, however, differs in both seasons (Table 3.5). While conducting gardenwise survey it was observed that the grape growers were facing some problems like inadequate and untimely supply of fertilizers, saline problems, scarcity of water for irrigation etc.

The cultivation of grape-vine is not new to India. The references in old literature indicate the antiquity of its cultivation. It was introduced in Maharashtra during 13th century and presently it has become leading state with 7,131 hectares (54.32%) under this cash crop. Besides Sangli-Solapur zone (Table 4.2) accounts for 47.04% area of the state during 1987-88 Sangli is one of the leading (26.72%) grape growing districts in the state and further Miraj (565 hect.) and Tasgaon (834 hect.) tahsils are worthy to be mentioned in grape-vine cultivation. Miraj tahsil recorded only 9 hectares under this crop in 1969 which rose to 565 in 1987 i.e. 1088 percent increase over the base year. This phenomenal growth of hectareage can be attributed to relatively attractive prices, increase in irrigation facilities and their proper management, innovative nature of farmers, market facilities, modern techniques to minimise risk

risk of such enterprise, encouraging role of co-operatives. The distributional pattern of grape-vine is, however, not uniform in Miraj tahsil. The villages like Kavalapur (71.14 hect.), Mhaisal (69.92 hect.), Malgaon (60.60 hect.) have substantial proportion of area under this crop. The low proportion (below 10 hect.) is confined to extreme western and eastern parts. Water is the main controlling factor in the east.

The size of grape-vine yards also differs within the villages and the region too (Fig.4.9). The number also varying from village to village. Takali village records 150 vine-yards whereas Kupwad registers 21 yards. The eastern and central parts have recorded more number of gardens. In regards to the ranking of irrigated crops, grape vine stands first in eight villages (Table 4.7) and second in fourteen villages after sugarcane.

The productivity of grape varies spatially in Miraj tahsil. Gardenwise survey has revealed the fact that yields per hectare vary considerably (Table 4.8). Based on this, the region has been divided into four productivity zones (Fig.4.11). The high productivity zone is confined to 6 villages in the south-west. The grape-vine cultivation faces some problems like small size, inadequate availability of varieties and seeds, natural hazards, pests and diseases, imbalanced use of fertilizers and water, lack of training and information to farmers etc.

Correlation analysis has proved the inter-relationship of about 16 variables highlighting the reasons for spatial variations in grape-vine cultivation. The micro level study of vine yards of different sizes in three sample villages has highlighted comparative cost-benefit analysis of two crops i.e. sugarcane and grape-vine. Besides, the organisation and functioning of marketing of grape in Miraj tahsil is considered in Chapter V. The study of cost-benefit of sugarcane and grape-vine is attempted to understand the level of profitability per hectare of different vine yards with varying sizes. It is observed that grape-vine has recorded more cost for inputs than sugarcane per hectare. But the outputs are comparatively higher and net returns too (Table 5.9) in all these villages. This has, probably, encouraged the farmers to undertake the enterprise of grape-vine.

Marketing of grapes is complex process or functions consisting of harvesting, collection and assembling, grading, packaging, transportation, storage, financing and distribution in the region. Recently Grape Grower's Association of Sangli has played positive role regarding the marketing of grapes on co-operative basis. About 7.42 percent share has been contributed by this association which seems to be insignificant. In fact, the association has bright scope to promote marketing, and processing of grapes. This will enable farmers to get reasonable prices to their produce. Five methods of marketing of grapes are found in the region i.e. retailing at garden (22.32%), local

stalls (2.73%), Khoti (10.15%), agents (59.38%) and association (7.42%).

There is regional variation in prices of grapes received to farmers (Table 5.2). The marketing flow of grapes passes through different channels (Fig.5.1). There are some marketing problems in the region like labour, transportation, price, fluctuations, credit, packaging material, storage etc. The grape produce of Miraj tahsil covers almost all regional, national and even international markets too. On the whole, if the major constraint of inadequate water is removed by introducing lift irrigation schemes, proper management and planning is made and looking to it as business, the future of grape-vine cultivation seems to be bright. This needs consistent efforts of co-operative sector to offer remunerative prices to grape growers. The small farmers should be encouraged to undertake the cultivation offering them subsidies. There is considerable scope for grape processing industries for dry grapes. In fact, this would lead to sound agrarian economy of the region.