



The foregoing analysis reveals the fact that irrigation happens to be major input to agriculture. It plays vital role in meeting the increasing demands for food and fodder. The farmers are able to take two or three crops in a year due to irrigation. Perennial irrigation facilities leads to overall transformation of the region. Thus, it has become boon to dry-land agriculture. In Phaltan tahsil, irrigation has brought about many changes during last five decades. The canal irrigated tract, in the north, has emerged out as progressive tract of the tahsil. However, there is uneven distribution of irrigation facilities which has been controlled by physical, social and economic factors. The region under investigation has 59.58 percent of the total cultivated area under irrigation. Therefore, there is scope for bringing additional cultivated area under irrigation by adopting modern techniques. Rainfall distribution in the region is highly uneven and it is mainly from monsoon. The post monsoon period, with its acute scarcity conditions invites the need of irrigated water to sustain crops.

There is fair concentration of rainfall in the rainy season but the region has experienced gaps of drought. The dry months are characterised by the shortage of water for crops. This has created the need of irrigation in the region. Therefore, the region has only alternative to store rainfall water within the dams and regulating it when it is required to standing crops.

The general landuse pattern shows that 85.50 percent of land area is useful for cultivation. Irrigation is important input which brings about changes in agricultural landuse and general landuse as well. The northern and central parts have been characterised by irrigation facilities. The high (above 90 percent) proportion of irrigation is observed in Hole, Phaltan and Assu. Taradgaon, Barad and Girvi circles have moderate (60-90 percent). The low (below 50 percent) proportion is confined to Adarki. Among the irrigated crops, sugarcane shares 45.51 percent of the gross irrigated area. It is largely found in the northern circles of Phaltan tahsil (Fig.2.5-A).

The region has different sources of irrigation (Chapter III). Well irrigation is the leading source of irrigation occupying 63.40 percent of the total irrigated area as compared to 54 percent of state level. It is mainly confined to the southern parts of the circles. Canal irrigation (33.30 percent) is mainly observed in the northern parts, particularly in Hole, Phaltan and Assu circles. The other sources (3.36 percent) are observed in northern portion of the region (Fig.3.1-A, B, C, D).

The intensity of irrigation, from all sources, varies remarkably in the region (Fig.3.4-A). Such regional imbalance in the development of irrigations is due to physio-socio-economic conditions. The low intensity (below 70 percent) is noted in southern and western parts of the region. It's

moderate proportion (70-90 percent) is found in the southern and eastern portions and high intensity (above 90 percent) is observed in Hole, Phaltan and Assu circles. In this belt villages like Gunaware (100%), Vedani (100%), Assu (96%) have recorded very high intensity of irrigation.

The study, regarding the development and requirement of irrigation, reveals that the present development of irrigation is not according to the needs of the area. The greater priority of irrigation should be given to those areas where it needs most (Fig.3.5-B). First priority zone comprises the areas of Taradgaon, Adarki and Girvi circles where intensity of canal irrigation is low. Second priority zone, with 8502.03 hectares of area, lies in Barad circle where rainfall is less than 615 mm. The northern part comprising the area of Hole, Phaltan and Assu circles, with 123661.59 hectares area shares no priority for irrigation. This is mainly due to the availability of canal irrigation.

The investigation also indicates that the villagewise, cropwise and sourcewise regional variations are observed in the economics of irrigation. The regional disparity in the economics of well irrigation may be related to the availability of water. The cropwise cost-benefit analysis indicated that sugarcane is economically beneficial crop as compared to wheat.

The irrigation has always been shown positive impacts on the agriculture productivity, consumption of fertilizer and

the level of mechanisation in the region are favourably affected by irrigation (Chapter IV). The high productivity of crop is largely affected by perennial and regular irrigation facilities. Contrasting to this, away from the canal irrigated regions, the productivity is reduced. The fertilizer consumption is directly related to the availability of irrigated water (Table 4.2 correlation matrix).

Mechanization of the agriculture has become an essential characteristic of irrigated area. The modern and improved implements are increasingly used in the irrigated tracts. The correlation matrix (Chapter IV) reveals that the relationship between irrigation and agricultural productivity, fertilizers and mechanization is positive.

It is observed that due to the improper use of irrigated water and unsuitable soil management, the soil problems like salinity, alkalinity and waterlogging are developed in many parts of the irrigated tract. An extensive area is affected by this man-made problem.

The levels of agricultural development are mainly related with the extent and nature of irrigated water (Chapter v). There are various factors which combinely affect the development of agriculture. However, their combination is varying in the context of space and time. Thus, the regional variations in agricultural development takes place in the region

Phaltan tahsil can be divided into three zones with high, medium and low levels of agricultural development. The spatial variations in physical, social and economic factors are reflected in the regional differences in the levels of agricultural development. The zone with high level of agricultural development is confined to fertile tract along Nira river course in the north having substantial irrigation facilities from the canal. The southern most region, being hilly in nature, has attained low levels of agricultural development.

The village Gunaware is representative of irrigated tract. There is favourable impact of irrigation on the productivity, mechanization and fertilizer consumption. Sugarcane is dominant crop occupying 60.12 percent of irrigated area. There are some problems like salinity, alkalinity and water-logging in the village area due to overuse of canal water.

In general, Phaltan tahsil is one of the progressive tahsils of Satara district. However, regional disparities in irrigation has led to regional imbalances in agricultural development. Irrigation can be regarded as the boon to rain-fed agriculture of the region. The efforts should be made to extend the irrigation facilities in the southern parts which has been deprived of irrigation. However, with heavy capital outlay, on co-operative basis, the irrigation facilities can be made available. Beside this, proper management

of irrigated water is another problem about which the farmers seem to be passive. Through proper management, with modern techniques, the water could be saved and could be utilized to those areas which have always drier need of irrigated water. The modern techniques like drip, sprinkler irrigation, instalation of water meters and techniques the conservation of water may be adopted in the region. In brief, attempts should be made to use every drop of water economically and for this farmers be made trained and awared.

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