

CHAPTER - VI

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C O N C L U S I O N

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## C O N C L U S I O N

The region is characterised by different physical features which have affected the methods and development of irrigation. As the study of irrigation conducted in the Karad taluka reveals the spatio temporal pattern of irrigation. It is observed that the hectarage of area under irrigation has increased about 10,102.18 hect. during the last 27 years. This is mainly because of the lift irrigation development in the two river valleys of the taluka. These two river basins are suitable for canal and lift irrigation. Whereas, western, southern and eastern hilly region is in favour of well irrigation. However, in this taluka some small portion of the cultivated land have scarcity of irrigation.

The whole study region depends for its water need on southwest monsoon which is irregular both in space and time. Hence, irrigation is essential for the growth of crops in dry months. An evidence suggests that the lift irrigation is an important source of irrigation constituting 51.32 percent of the total irrigated area of the region. This is followed by well irrigation, irrigating about 27.89 percent in north and eastern part; on the contrary canal irrigation is more evidence in southeastern and central part of the region. But the western part of Karad taluka is influenced by other local sources of irrigation. The terrain and soil types have dominated the

methods of irrigation. It is found that the border and furrow methods of irrigation are commonly practised in the central, northern and southeastern parts, whereas curruigation is practiced in southwestern and western part of the region. Moreover sprinkler and drip methods are recently adopted by some rich farmers. Since, such type of irrigation needs more investments and technical knowledge.

The present research work is designed to test validity of several hypothesis in context with irrigation and cultivated land. The first important hypothesis of the present work is to test the association of irrigation development and the use of other inputs in agricultural activities. It is observed that the use of mechanical and biological inputs has increased in irrigated area. Wooden ploughs are replaced by iron ploughs and oil engines by electric pumps. Moreover, the use of tractor is also increased. The use of chemical fertilizers and HYV seeds is confined to the irrigated pockets of the region. The use of above inputs is low in unirrigated area.

The second significant hypothesis of the present work is to test the association of irrigation and inputs with cropping pattern and crop productivity. It is observed that irrigation played a dominant role in changing the cropping pattern. It is seen that more than 80 percent of irrigated land is used for the cultivation of sugarcane . The percentage of area under

rice, wheat and jowar has also increased. Whereas, groundnut and pulses have decreased. The crop diversity is high throughout the region. The intensity of cropping is high in hilly area and low in river basin. The proportion of cultivated land is increased with the development of irrigation facilities. As some cultivated waste land is brought under cultivation. Umbraj, Undale, Shenoli, Kole and Karad circles have high percentage of cultivated land. It is proved by correlation analysis that there is a positive correlation of sugarcane, rice and wheat with irrigated area. The area under sugarcane and rice has increased with increasing irrigation facilities. However there is negative relationship between groundnut, maize and jowar with irrigated area.

The analysis of level of agricultural productivity shows that there is direct relationship between the irrigation and per hectare yield and production of different crops in the region. The yield of sugarcane, rice, jowar, wheat, maize and groundnut have increased with the development of irrigation facilities. The relationship between yields and irrigated area under selected crops stands positive throughout the region. It is also observed from the present study that there are regional disparities in the levels of productivity which is related to agricultural inputs used. The eastern and central circles have high productivity than the western. So far as the temporal changes are concerned there is tremendous change in the productivity. The Umbraj and Undale

circles with low productivity in 1961-64 have attained high grade in 1984-87. High productivity is noted in irrigated fertile soils of Krishna and Koyana Valley, covering 44.51 percent of irrigated area. Whereas about 29.3 percent of total area has recorded a low level of productivity. These are the 'weaker' areas characterised by relatively inadequate irrigation facilities, unfavourable topography and poor soils. Therefore, it has been concluded that the development of agriculture in the region is commensurate with the development of irrigation.

The third hypothesis of present work is to test negative influence of irrigation on cultivated land. It is observed that, due to the improper use of irrigation water and unsuitable soil management the problem of soil salinity, alkalinity, waterlogging etc. have seriously emerged in canal irrigated tracks of central and southeastern part of the region. It is seen from the Table 5.1 that in 15 villages, about 1965.82 hectares of fertile sugarcane land has gone out of cultivation by the abuse of irrigation. The excess use of irrigation, inadequate drainage and the heavy doses of chemical fertilizers have resulted such problems in the region. If this land degradation is not kept under control, cultivated fertile land would rapidly decrease, which is known as incurable cancer of soil. For solving these problems the government and private sectors have made an attempts to bring

the problematic land under cultivation. In this context some suggestions for improving irrigated farming and agricultural productivity have been made. They are as follow.

The farmers in canal irrigated area use excess water for crops. If the farmers in these areas guided properly and convined them significances of judicious use of water, the problems would be controlled to some extent.

The farmers make use of traditional methods of irrigation, such as flood, border methods in which water is wasted, therefore, they should be trained to use scientific methods of irrigation viz. sprinkle, drip etc. to save water which would help to irrigate additional land.

The percentage of degraded land is greater in the ill-drained villages. Therefore, it is essential to improve vertical and horizontal drainage systems in order to check the extention of the waste land. The surplus water should be diverted to rivers. The application of overdoses of fertilizers is also another reson of soil degradation, therefore chemical fertilizers should be used according to the need of soils. Land in the lower reaches of valley remain uncultivated owing to the presence of salt in the soil. Hence, as a first measure salt tolerant crops should be grown and a detailed chemical analysis of soil and drainage survey of the area should be undertaken. The other methods of reclamation of degraded soil have already been discussed in detail in the text.