

CHAPTER - IV

REGIONAL IMBALANCES IN THE DEVELOPMENT OF IRRIGATION

4.1 The intensity of irrigation :

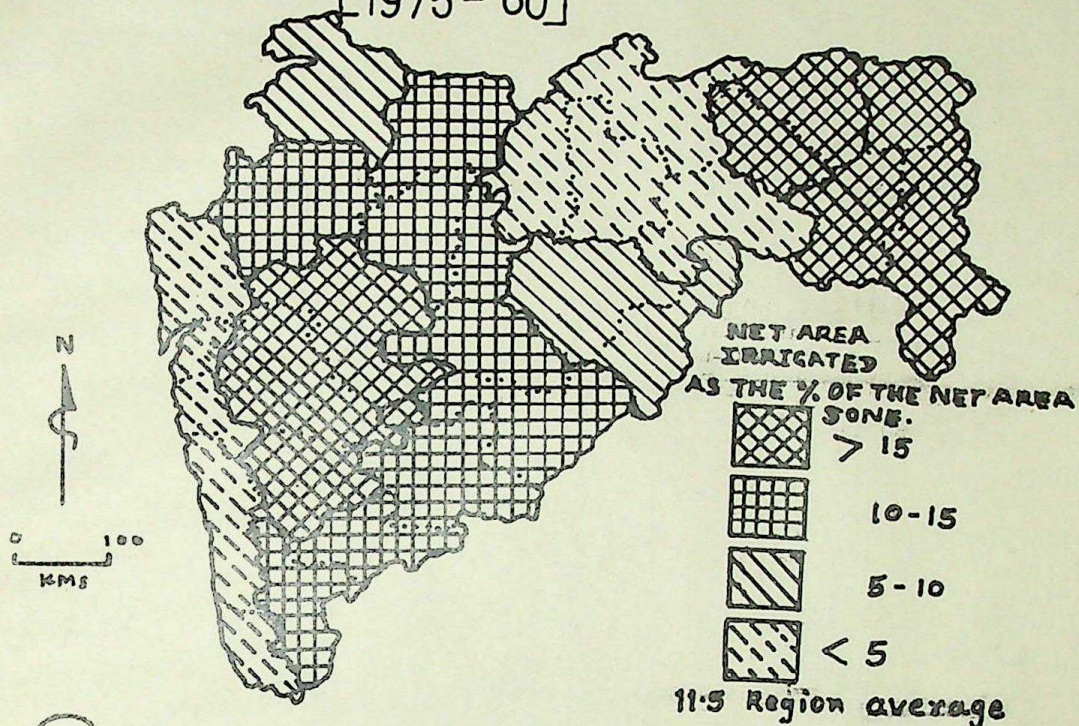
The intensity of irrigation (i.e. net area irrigated as percentage of net area sown) from all sources varies considerably in different part of the state (Fig.4.1A). The prevailing physio-socio-economic conditions are responsible for existing regional imbalances in the development of irrigation.

The intensity of irrigation is relatively high (above 15%) in western upland districts (Satara, Pune and A.Nagar) where canal irrigation is developed considerably. It also exists in the eastern part of Vidharbha (Bhandara, Chandrapur and Gadchiroli districts) where traditionally tank irrigation is dominant. The moderate intensity of irrigation (10 to 15 percent) prevails in the central zone of Maharashtra. It includes districts of Jalagaon, Aurangabad, Jalana, Beed, Osmanabad, Latur, Solapur, Sangli and Kolhapur. This is a drought prone area where need of irrigation is high. The well irrigation is the major source of irrigation in this part of state.

A belt of low and very low intensity of irrigation (5 to 10 and under 5 percent) is noted in littoral districts in

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(A) INTENSITY OF IRRIGATION [1975-80]



(B) RELATIVE INCREASE IN INTENSITY OF IRRIGATION. [1951-55 TO 1975-80]

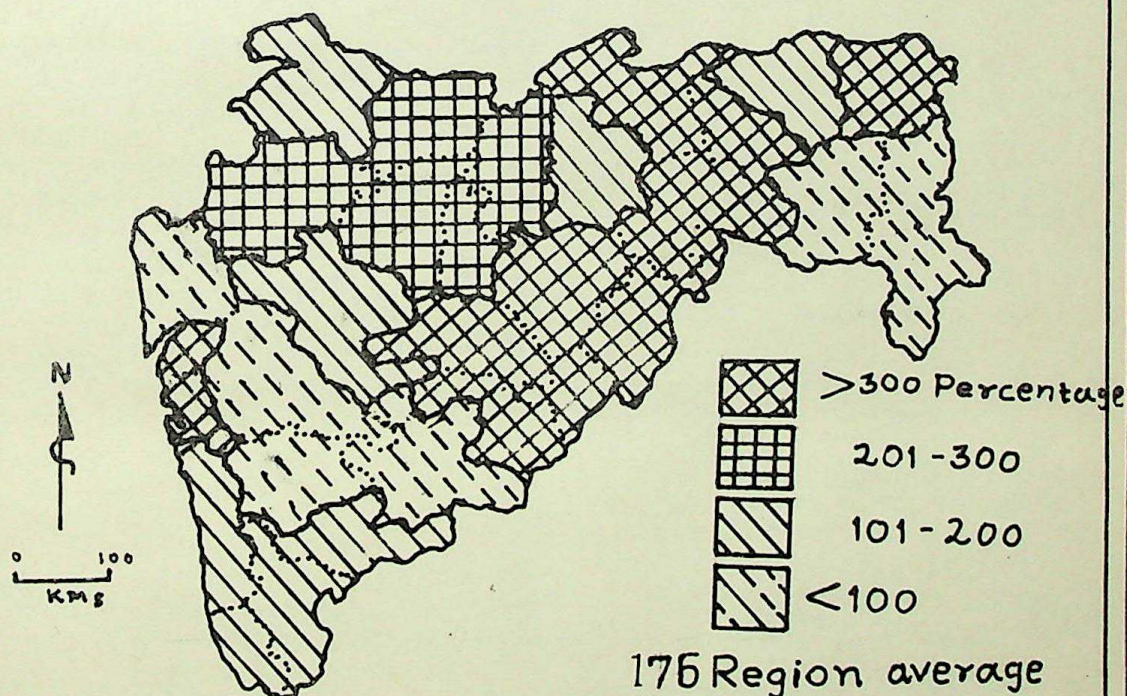


FIG. 4.1

the west and whole of the Vidharbha region except extreme east districts. This may be attributed to relatively less need of irrigation in the western part and less developed water resources in the Vidharbha region.

4.2 Relative increase in the intensity of irrigation :

An indication of relative increase in the intensity of irrigation has been accomplished in Fig.4.1B, which reveals the profound increase that occurred during the plan period. The high and very high relative increase in the intensity of irrigation (200 to 300 and over 300 percent) is confined to the Marathawada and Vidharbha area. These are the areas which were formerly rainfed and having less developed irrigation facilities. During the plan periods efforts were made to tap the rich groundwater resources through dug wells. In some of the areas new irrigation projects have brought arable land under irrigation.

The moderate increase (101 to 200 percent) in the intensity of irrigation is noted in the southern part of Maharashtra which includes the districts of Ratnagiri, Sindhudurg, Kolhapur and Sangli, along with Ahmadnagar, Dhulia, Akola and Nagpur, elsewhere comparatively low increase (below 100 percent) in the intensity of irrigation is found in two pockets, one in the east which includes districts of Chanda

and Gadachiroli and another to the west comprising districts of Solapur, Satara, Poona and Thana. These are the areas where either tank irrigation or canal irrigation were formerly developed. However, there seems to be a lot of scope for increasing the intensity of irrigation in the state. As it is estimated by Maharashtra State Irrigation Commission Report (1962), that it would be possible to bring under irrigation about 61.94 lakh hectares when all feasible irrigation sources both surface and under ground would be fully exploited. However, the ultimate irrigation potential, both from surface and groundwater resources, is presently estimated at 70.61 lakh hectares, 52.61 lakh hectares from surface water resources and 18 lakh hectare from under groundwater resources.

4.3 Regional pattern of irrigation :

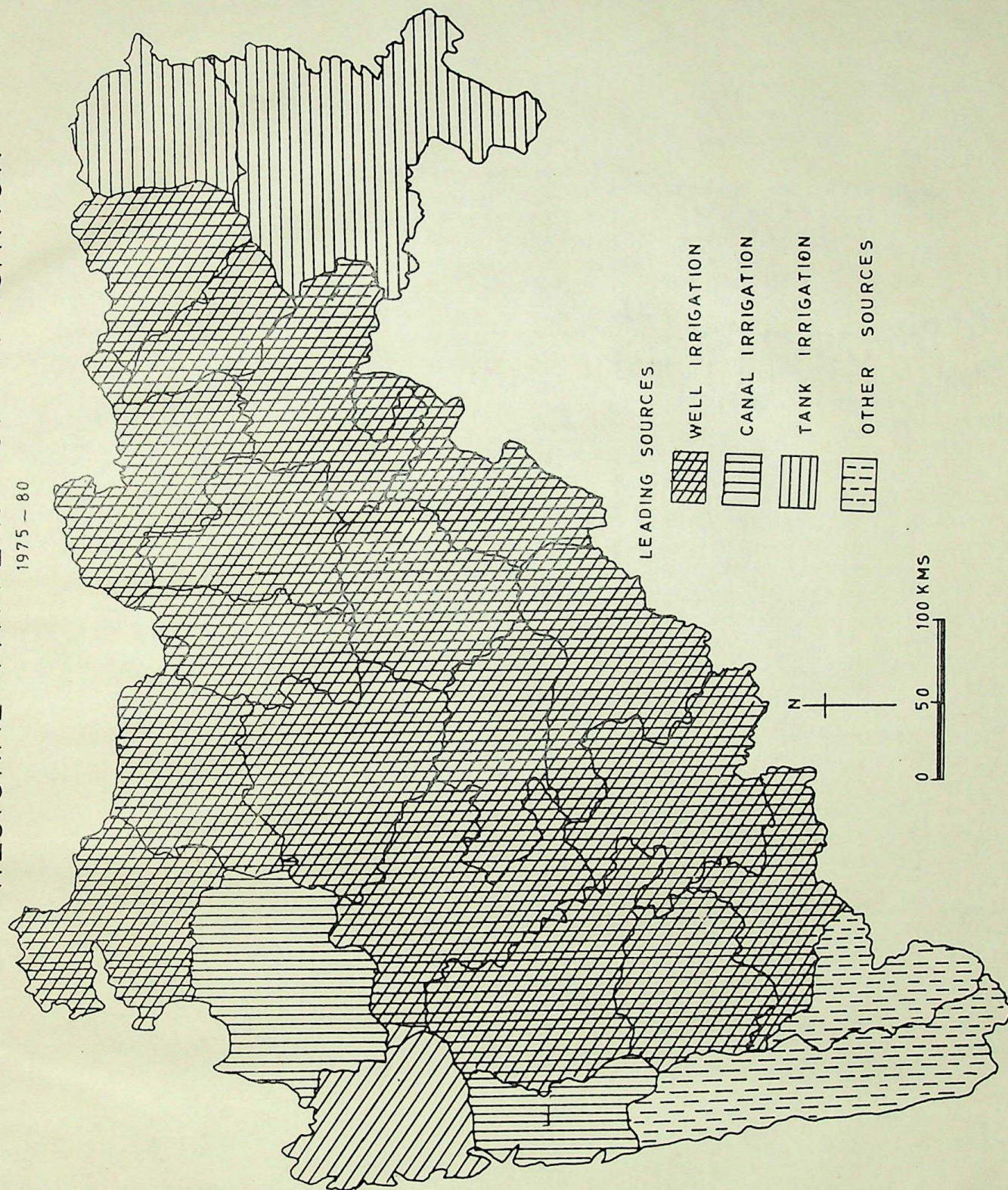
The aforesaid analysis indicates that the state is characterised by variation in physiography which in turn gives rise to specific types of irrigation. As such the plateau area of the state has predominance of well irrigation, the undulating land of southern part has dominancy of lift irrigation, whereas canals are developed only along river vallies. The tank irrigation seems to be dominant in the eastern part only.

Hence the regional pattern of leading source of irrigation can be imphasised by considering the percentage

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REGIONAL PATTERN OF IRRIGATION

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occupancy strength of shared by individual source. Thus four different zones are recognized (Fig.4.2).

Well Irrigation Region :

Well irrigation region comprising most of the plateau districts except Kolhapur and Nasik in the west and Bhandara, Chanda and Gadachiroli to the east. This region shares major area of the state i.e. 74.42% of the total geographical area.

It is worthy to note that during period under study no change in this regards is observed. It is because the farmers of the plateau region have to wholly depend on ground water only.

Canal Irrigation Region :

The canal irrigation region is represented by two districts namely Nasik and Raigad. It shares about 7.4% of the geographical area of the state. Here private canal occupies major portion of the total irrigated area. The rugged topography and seasonal nature of small streams have facilitated the development of this source. It is mainly used for Kharif crops. The well, tank and lift irrigation are not developed here due to the unsuitable topography for these sources.

Tank Irrigation Region :

This is confined to the eastern part of the region including Bhandara, Chanda and Gadachiroli districts only.



This region occupies only 11.32% of the total geographical area. The topography is suitable only for the development of tank irrigation. Other sources, due to adverse topography for their development are not developed.

Lift Irrigation Region :

This region is represented by south-western part of the state by Kolhapur, Ratnagiri and Sindhudurg districts only. It occupies 6.85% of the total geographical area. The spread of this source is due to the presence of rivers like Panchaganga and Krishna, spread of co-operative movements and finance given by the sugar factories etc.

In general one can state that the irrigation regions formed appears to be influenced by topography and availability of perennial streams in those part of the state.

CONCLUSION

Maharashtra is characterised by variations in the physiographic setting which in turn has given rise to variation in water resources and specific types of irrigation. Based on natural drainage the state is divided into basin like Krishna, Bhima, Godavari, Wainganga, Tapi and Konkan rivers. The magnitude of the water in these rivers is influenced by the intensity of rainfall and its variability. Whereas presence of groundwater is affected by how far the surface runoff is conserved to recharge the groundwater.

The foregoing analysis reveals that there are large regional variations in groundwater recharge and withdrawal also throughout the region. The higher recharge is confined to the western and eastern hilly parts where extraction is very low. These areas provide a high potential for digging additional wells. Whereas poor recharge of groundwater is noted in western central Deccan plateau where extraction is relatively more. It is being the only dependable source of water available and more need of irrigation in this part. The density of wells observed here is also comparatively high. Although some of the micro-watersheds in the state are fully exhausted and are in hire need of artificial recharge, there seems to be plenty of scope for digging additional wells

which will bring about twelve lakh hectares of additional land under irrigation. However, to utilise these potential fully the technical know-how for proper location and sinking of wells, rational allocation of financial aids to peasants and separate water management board are essential.

The irrigation facilities (source wise) developed in the state also indicate the dominance of particular source in particular region. The central part i.e. Deccan plateau has a dominance of well irrigation, the eastern part i.e. Chandrapur, Gadachiroli and Bhandara are endowed by tank irrigation, while lift irrigation is wide spread in south-western part of Maharashtra. The canal irrigation is developed only along major river basins. Out of the total irrigated area, well irrigation occupies about 54.85 percent followed by canal (22.59%) and tank irrigation (14.88%). Lift irrigation occupies only 7.68% of the total irrigated area in the state. Recently percolation tanks are widespread in the middle drought prone area as a measure to enrich the groundwater and augment the well irrigation.

Presently, the development of irrigation facilities in the state are imbalanced. About 10 percent of the net sown area in the state is irrigated which is less than the National average of 24.5%. Relatively high intensity of irrigation is observed in the western upland districts of the state along with Chandrapur, Gadachiroli and Bhandara in the east. Here wells, canals and lift

irrigation are developed simultaneously. The moderate development of irrigation is noted in the central drier part, whereas poor development is remarkable in Konkan region and Western Vidharbha region.

Although irrigation in study area is increased from 4% to about 10% of net sown area during last three decades, still there is plenty of scope for bringing additional area under irrigation. Even the Dandekar, Deuskar and Datta Deshamukh, report to the government imposed a limit of 8 months a year for the utilization of such water for irrigation. Thus, they claimed, would bring 70 percent of the cultivated land under irrigation in Maharashtra with existing irrigation facilities.

Moreover, two different ways can be adopted to increase the irrigation facilities in the state. Firstly, by improving the existing facilities through reduction of water losses by adopting the new methods of irrigations and by reducing evaporation losses. Secondly, for extension of irrigation facilities, various means such as, the conjunctive use of surface and ground water; recharge of groundwater for dug wells by constructing contour bunding, Nala-bunding, Percolation tank, afforestation need be practiced. Such measures will help to increase the area under irrigation and to remove the regional imbalances in the development of irrigation facilities in the state.