

A C K N O W L E D G E M E N T

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INTRODUCTION :

Irrigation is an important input for the development of agriculture. It is regarded as an integrate part of sound infrastructure and the basic ingradient of agriculture activity. To be successful and well developed agriculture requires supply of water at regular interval and in required quantaties. Modern agriculture technology such as use of high yielding varities of seeds, use of fertilizers and pesticides can be adopted only when the assured water supply is available.

For the country like India, whose 50 percent national income comes from agriculture and about 70 percent of the total labour force is engaged in agriculture, irrigation is of much use. It is said that Indian agriculture is gamble of Monsoon. It is due to the erratic nature of Monsoon all over the country. And to surpass this danger of uncertainty of rainfall, irrigation i.e. artificial supply of water to crops at required time and in required quantity is the only solution.

In this regards, present study attempts to analyse the spatio-temporal development of irrigation facilities and regional imbalances their in for the states of Maharashtra, which is renounced as one of the agriculturally prosperisous state of India. The attention is also focused to the sources of irrigation corelating them with physiography and climate of the region. It is



proposed to assess the groundwater resources considering recharge and withdrawal and scope for its development. An attempt is also made to delineate the irrigation regions considering the leading source of irrigation in the enumerating unit of area.

SOURCES OF DATA AND METHODOLOGY :

The work of the data used in the study is based on secondary sources, published by States and Central Government viz. Statistical abstracts, Census handbook, District Gazetteets, Irrigation monographs etc. The data regarding the groundwater recharge and withdrawal is obtained from the Groundwater Survey and Development Agency, Government of Maharashtra. The data is made available for 1467 small watersheds. The districtwise potential of groundwater assessed on different criterias is related to the geographical area per 100 sq.kms. and represented cartographically. The para-meters of groundwater recharge were considered on the basis of field observations of aquifer conditions, geohydrological survey and observations of water table fluctuations etc. Average annual rainfall, area irrigated, area bunded etc. are some of the important criteria for estimation of groundwater recharge. The calculations for withdrawal has been worked out based on performance of wells and number of wells. The balance would indicate the available

groundwater potentiality. The additional irrigation wells feasible were assumed to have an average annual draft of 14,796 cubic meters per well. The density of wells is computed by comparing number of irrigation wells to per 1000 hectares of cultivated area. The variability of rainfall is calculated by considering the previous 30 years rainfall data for all the raingauge stations in the state. The need of irrigation is co-related with the rainfall variability. The intensity of irrigation is computed by comparing net area irrigated to net area sown. Whereas to find out the irrigation regions leading source of irrigation is considered.

THE DESIGN OF THE WORK :

The whole report is grouped into five chapters. The first of its deals with regional setup which includes physiography, geology and climate of the region. The water resources are highlighted in chapter second. Whereas, third chapter deals with the spatial distribution of irrigation facilities sourcewise. The regional imbalances in the development of irrigation is analysed in chapter four. The last chapter attempts the conclusion of the study.