P R E F A C E

After independence, Goverenment of India launched a massive programme of constructing large dams to increase the agricultural production. This resulted in self sufficiency in agricultural aspects but demand of food and fibre goes on increasing with increase in population. Land resources are shrinking with the development of cities, industries, road network etc. and water resources are limited. The conservation of each and every drop of water will be the cry of the coming years. Hence judicial use of water in agricultural production is of vital importance.

During preperation of pilot project for the Narmada command area in 1982, I came across with some difficulties in collection of such data and respective crop water requirement values. Since then the idea of development of regional relationship was in memory. Generally in most of the irrigation projects, Penman method is being used for crop water requirements. It is observed that it overestimates for Indin conditions. During post graduation work, my guide Prof. P.M. Modi also suggested, to work on crop water requirements for Vadodara District. During this study, my guide emphasised a need for such research for Gujarat region considering vast

development of irrigation activities in the state.

Thus an idea initiated as long as in 1982, was provoked by Prof. Modi, and it was decided to develop a regional relationship. I have tried to develop a few empirical relationships simple in nature based on availability of long term meteorological observations. As Gujarat state has a vast variation of climate, this relationships hold good for five districts viz. Banaskantha, Kheda, Vadodara, Rajkot and Junagadh and other similar agro-climatic zones. However these relationships can also be used with variation upto 5% for Gujarat region.

I hope the work done under this research will be useful to the Irrigation and Agricultural engineers of the state.

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