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IMPLICATION OF IRRIGATION WATER REQUIREMENT FOR WHEAT AND CLIMATE CHANGE PARAMETERS-A CASE STUDY OF COMMAND AREA OF URBC.

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ABSTRACT

The major changes in climatic parameters are temperature and in rainfall which have direct impact on irrigation water requirement in arid and semi-arid region. In order to establish the implications of irrigation water requirement and the climate change parameter, the recent past (say 2015) irrigation requirement and 5 decades later in the year 2065 the irrigation water requirement were calculated based on prediction for a particular crop in the study area. Considering negligible change in the regulations relating to agriculture and irrigation over the period of 50 year, the variation in IWR were observed increased significantly. The observed increase in irrigation water requirement after 50 years is mainly due to increase in temperature, population raising and probable industrial growth. This study will be helpful to propose the improvement in surface water supply, regulation of green house emission by anthropogenic activity and better usage of ground water resources to supplement the excess irrigation requirement of crop. In future, for sustainable irrigation system, only the current data and conventional methods are no longer survived to overcome the irrigation water requirement. The global change in climatic parameters need to be considered remarkably.

Keywords: Irrigation Water Requirement (IWR), Metrological parameter, FAO 56, CROPWAT.

1.INTRODUCTION

Ukai right bank canal is one of the oldest irrigation project of Government of Gujarat in India. Ukai Right Bank Main Canal off take from Kakrapar Right Bank Main Canal at 46.6 km and was constructed after coming up of Ukai Dam to provide irrigation facilities to 61309 ha among agricultural area of region lying between Kim River and Narmada River. The designed capacity of canal is 1590 cusecs. The canal is unlined. The canal runs at 1100 cusecs at H.R. against designed capacity 1590 cusecs. Ukai Dam to provide irrigation facilities to area of 61,375 hectore. The study area in central region, lying between Narmada River and Kim River of Gujarat state.

The climatic parameter such as temperature and rain fall has significant impact on the environment for human as well as the irrigation requirement of crop. The IPCC is the international body for assessing the science related to climate change. The Intergovernmental Panel on Climate Change was set up in 1988 by the WMO and

UNEP to provide policymakers with regular assessments of the scientific basis of climate change, its impacts, future risks, options for adaptation and mitigation.