

## **ESTIMATION OF IRRIGATION WATER REQUIREMENTS OF SRIKAKULAM DISTRICT, ANDHRA PRADESH USING BLANEY-CRIDDLE AND PENMAN-MONTEITH REFERENCE EVAPO TRANSPIRATION**

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### **ABSTRACT**

The irrigation development in Srikakulam, a north coastal district of Andhra Pradesh is mainly dependent on tanks. But during the past five decades the district recorded a negative growth rate of irrigation. This necessitated a systematic study to be conducted on irrigation water requirements considering all principal crops grown in the district. Irrigation systems can be improvised by taking into consideration various climatic factors and local conditions. Selection of the crop coefficient, the relationship between the Reference Evapo transpiration (ET<sub>o</sub>) and crop water requirement of specific crops are certain important factors in determining the irrigation needs of a particular place. The Blaney-Criddle method is one such method incorporating all such practical procedures and necessary conditions for obtaining a reasonable estimate of irrigation water requirements. Similarly, The Penman-Monteith method is also a widely recommended method to determine ET<sub>o</sub>. In the present study, ET<sub>o</sub>'s are obtained using both these methods by taking into consideration various local conditions. These ET<sub>o</sub>'s are further used to estimate the irrigation water requirement of the study area and compared with that of the existing availability of water resources of the district. It is observed that the tanks, a major source of irrigation in Srikakulam district augment only 26.09% of the total irrigation water requirement.

**KEYWORDS:** Reference Evapo transpiration (ET<sub>o</sub>), Blaney-Criddle Method, Penman-Monteith Method, Irrigation Development