

Estimation of Crop Water Requirement of TS Channel (Tungabhadra Side Channel) Command of Krishna Western Delta using CROPWAT Model

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ABSTRACT

Water requirement estimation is important in cultivation practices of rice. This study was carried out to determine the total water requirement needed for 4165 hectares of paddy and maize crops which are being cultivated in TS Channel of command of Krishna Western Delta (KWD) in Kharif and Rabi seasons respectively. In KWD, water is supplied continuously until about 10 days before harvesting. Water is required to bring the fields to saturation, and to establish a layer of water in the fields to facilitate land preparation. Saturation of water, effective rainfall, and evapotranspiration and seepage percolation were calculated for determination of crop water requirement during the pre-saturation and normal growth periods. The computer simulation model CROPWAT was applied to estimate crop water requirements of rice and maize crops grown in both the seasons. The decennial meteorological data for years 2000 to 2012. The study showed that the total of 274 mm and 374mm of irrigation water for paddy and maize crops during kharif and rabi seasons respectively which clearly show that there is a misutilization of canal water and non-utilization of ground water to the extent recommended hence the area under cultivation is also lower than the actual potential especially during rabi season (3500 ha) as against kharif (4165 ha).

Key words : CROPWAT, Paddy Field, Water Requirement.