

Estimation of Irrigation Potential Utilization for Kanupur Canal System Using Remote Sensing and GIS

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ABSTRACT

Irrigated agriculture is increasing in India with the high investments in irrigation projects high irrigation potential created. The present study is focussed on investigation on assessment of irrigation potential utilization from public domain satellite datasets to estimate seasonal crop areas for Kanupur Canal System of Nellore District. Spatial, temporal monitoring of the projects during the 2014-15 year for all seasons namely *kharif*, *rabi* and summer is necessary to monitor the irrigation potential utilization and take the necessary steps for interventions for improvement. Satellite data availability in public domain has provided scope for cost-effective solution for acquiring the temporal satellite data at monthly interval over several irrigation commands. Cost free Landsat 8 OLI sensor which has spatial resolution of 30 m data is found to be very much suitable for the study at regional level as 16 days interval data is available from USGS (United States Geological Service) Earth archives in near real time. The satellite derived crop areas for Kanupur Canal System are *kharif* crop constitutes 65%, *rabi* crop constitutes 50% and summer/annual crops are about 6% of the ayacut designed and irrigation intensity is 121%. Total releases are about 5.467 TMC and irrigation potential utilised was 30913 ha and hence the water productivity is 5654 ha per TMC and delta is 0.49 m.

Key words: *GIS, Irrigation, Public domain, Remote sensing, Satellite* .