

ABSTRACT

The enhanced understanding of irrigation efficiency can improve the beneficial use of limited and declining water resources needed to enhance crop and food production from irrigated lands. The value of irrigation efficiency and its definition are important to the societal views of irrigated agriculture and its benefit in supplying the high quality, abundant food supply required to meet our growing world's population.

Toposheet from Survey of India are of scale of 1:50000 are used to extract the information of irrigation network in Hassan district. Geo-registration of Toposheet is made on ArcGIS platform before extraction of water resource related information.

In this project ArcGIS have been used to locate the reservoir and weirs, to determine the length of main canals, sub canals, branch canals of dam and weirs. Major river basin and river are located on map, tributary of Cauvery like Hamavathi, Yagachi and Vedavathi tributary of Krishna and Nethravathi river basin in Hassan district are demarcated on the GIS platform. All these information are projected to UTM coordinate system to estimate the length and area information.

For the purpose of estimation of field efficiency length of each canal is estimated in GIS platform and discharge in each of canal is collected from the major irrigation department of Hemavathi project. Paddy is the major crop in the area for which duty is estimated for the base period delta and finally field efficiency is estimated for the given commended area and discharge.