# INTEGRATED WATER RESOURCES STUDIES ON TWO ADJOINING WATERSHEDS MELEKOTE AND RAJAGHATTA, DODBALLAPUR TALUK, BANGALORE RURAL DISTRICT, KARNATAKA

**S. G. RAMACHANDRAIAH[1], M. INAYATHULLA[2], P. S. NAGARAJ[3], R. DRUVASHREE[4] & G. RANGANNA[5]**

[1]Department of Civil Engineering, Dr. Ambedkar Institute of Technology, Bangalore, Karnataka, India

[2,3]Department of Civil Engineering, U. V. C. E., Bangalore, Karnataka, India

[4]Research Scholar, UAS, Bangalore, Karnataka, India

[5]Visiting Professor, UGC-CAS in Fluid Mechanics, Bangalore University, Karnataka, India

## ABSTRACT

Our homes are within the watersheds. We have to depend on watersheds for survival for water, for crops and for crop yield. We have to control and prevent wrong utilization of natural resources and polluting the same. Demographic explosion should be checked at the earliest, i.e., rural population migrating to urban pockets in search of jobs neglecting agricultural activities. This is the root cause of degradation of all natural resources. Nearly 70 percent of our cultivated land in the country is under rainfed conditions and therefore watershed management becomes inevitable, for sustainable agricultural growth and productivity. Watershed management is a holistic approach to optimize the use of land, water and vegetation in an area and thereby alleviate drought, floods, prevent soil erosion, improve water availability and increase agricultural production. For the past several decades, watershed management is considered as strategy for agricultural and rural development in rainfed areas. With this background, an intensive study on two adjoining sub-watersheds (74.5 sq.km) has been carried out with regards to hydrology, soil and water, besides management aspects.

The paper herein prepared covers all aspects of hydrology, quality of soil and status water available for domestic as well as irrigation. Drought situations are common in Dodballapur Taluk within which the two watersheds, viz, Melekote and Rajaghatta fall (Both of them are within the Arkavati basin). Within the said watersheds there are52 villages with a population of 45,928 according to the latest census. There are 22 water bodies and 42 wells. But yet there is shortage of water and the study now undertaken will surely enlighten the measures necessary to economically utilize the available resources keeping in view the welfare of each and every one living within the watersheds boundary. The study reveals that the quality of soil and water are fairly good and not harmful for cereal crops. Details of investigations and results obtained thereon are presented.

**KEYWORDS:** Infiltration, Groundwater, Soil Quality, Water Quality, Watershed Management