

APPLICATION OF GIS FOR MAPPING RAINWATER HARVESTING POTENTIAL: A CASE STUDY OF NIDHAL VILLAGE IN SATARA DISTRICT, MAHARASHTRA, INDIA

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ABSTRACT

Water is an essential natural resource for sustaining life and environment. The available water resources are under pressure due to increasing demands and the time is not far when water, which we have always thought to be available in abundance and free gift of nature, will become a scarce commodity. Conservation and preservation of water resources is urgently required to be done. In many part of India, water supply to communities evidently provides a shortfall in demand. Rainwater harvesting systems can provide water at or near the point where water is needed or used. The systems can be both owner and utility operated and managed. Rainwater collected using existing structures (i.e., rooftops, parking lots, playgrounds, parks, ponds, flood plains, etc.), has few negative environmental impacts compared to other technologies for water resources development. Rainwater is relatively clean and the quality is usually acceptable for many purposes with little or even no treatment. The physical and chemical properties of rainwater are usually superior to sources of groundwater that may have been subjected to contamination. The present study was intends to measure the rooftop rainwater harvesting potential using GIS technique. The GIS analysis employed in this study was essential for a systematic evaluation of roof rainwater harvesting in the selected Nidhal village in Man tehsil of Satara district. With the application of GIS it was possible to estimate the total amount of water harvestable at the household level. It is very tedious work to assess the catchments available for roof top rainwater harvesting, here the roof surfaces are the catchments and with respect to that GIS technique is employed to calculate the area of various types of roofs in the study area for the measurement of its potential and planning for the area under study.

KEYWORDS: Rainwater Harvesting, Potential, Measurement, Rooftop etc