

PREFACE

The Upper Godavari Basin in India, a region of significant geographical diversity, is heavily reliant on its rain-fed rivers. Despite its agricultural importance, the area faces substantial water resource management challenges. The unpredictable and seasonal rainfall patterns, combined with the limited capacity of the rain-fed rivers, often result in severe water shortages during dry periods, adversely affecting agriculture and daily living conditions.

This dependence on rain-fed rivers has rendered the Upper Godavari Basin particularly susceptible to the inconsistencies of the monsoon. During dry seasons, river flows diminish drastically, failing to meet the irrigation, drinking water, and other essential needs of the region. This seasonal variability threatens the sustainability of agricultural activities, which are crucial to the local economy. Frequent crop failures due to water scarcity have become a persistent issue, causing economic instability and hardship for the farming communities.

Additionally, the rapid urbanization and population growth within the basin have intensified water demand, further straining the already limited water resources. The inadequacy of surface water during non-monsoon periods necessitates a reliable and sustainable alternative. Groundwater, with its consistent availability, presents a crucial resource to balance the water supply and demand. Groundwater zoning is vital in this scenario. By identifying groundwater potential zones, we can pinpoint areas with abundant groundwater reserves and areas with limited availability. Such zoning is essential for formulating targeted and effective water management strategies, ensuring the optimal use of groundwater resources. It facilitates the planning of sustainable water extraction, recharge practices, and conservation measures, thus mitigating the impacts of water scarcity.

In this report, several of the crucial parameters for analysis for zoning groundwater potential have been considered, and using both GIS and MCDA techniques, these areas have been mapped to guide the authorities for collecting information and helping the people around them and gaining awareness of the natural but limited resource we have also make steps to procure them whilst also make changes to get more replenished groundwater.

Rubesh Mallik

Student at SIG