

## GIS BASED SUITABLE SITES SELECTION FOR ARTIFICIAL GROUNDWATER RECHARGE OF MAHARASHTRA STATE, INDIA

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### ABSTRACT

Water has become a scarce resource all over the world and so special attention must be paid to artificial groundwater recharge (AGR) in water resource management. Availability of non-committed runoff, hydro-geologically favourable area for recharges and site specific design of artificial recharge structures are the major requirements of an AGR system. Only two main sources of fresh water in the world are available which are surface water and groundwater. The amount of this water sources are very little and which required storing for future by groundwater recharge which is very important now a days. For AGR suitable site investigation is required. Groundwater is the main source of agriculture and it is also used for domestic purpose. The ultimate objective of this study is to investigate the areas which are very suitable for AGR in upper Bhima River basin in the semi-arid zone of Pune district, Maharashtra, India. In this study weighted values are used in Geographical Information System (GIS) environment and create the thematic layers, the exact type of artificial recharge structure, like Check dam, nallabund, gully plugging, percolation ponds etc are selected for an artificial recharge. The conventional practice in water harvesting takes into consideration the availability of land, suitability of a particular artificial recharge technique depending on local conditions, and the area benefited. Hence, decisions regarding the location and type of recharge structure for water conservation can be made only after extensive ground study. GIS based modelling approach provides excellent tools for identifying recharge zones with suitable structures in stipulated time.

**KEYWORDS:** Artificial Recharge, Geomorphology, Geoinformatics, Groundwater, GIS, Land Use Land Cover, Remote Sensing, Weighted Overlay Analysis