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Evaluation of Groundwater Potential Zones and Recharge Potentiality in Hanumana Block, Rewa District, Madhya Pradesh, India Using Multi-Criteria Decision Analysis

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Abstract

The area chosen for the research is a hard rock terrain of Central India. Despites having sufficient rainfall, the area faces water crisis for drinking and irrigation during the summer months. To cope up with this problem, the area has been undertaken for the study. Groundwater potential zones (GWPZ) are delineated and interpreted according to appropriate assigned weights. The zones are characterized into high (35.04 %), moderate (51.60 %) and low (13.36 %) groundwater potential zones. The findings have also been validated by choosing selected wells yield in the field randomly. The groundwater recharge potentiality of the area is calculated using relevant parameters which indicates that 20% of the total surface water collected through rain fall recharges the groundwater. In the study, measures have been suggested to increase recharge potentiality and management of water resources. It is concluded that RS and GIS are very useful and powerful techniques to evaluate the groundwater resources as well as recharge potentiality.

Keywords: Groundwater Potential Zones, Recharge Potentiality, Remote Sensing, GIS, Overlay Analysis, Central India