Application of Remote Sensing and GIS for Delineating Groundwater Potential Zones of Ariyalur, Southern Part of India

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Abstract : The natural resources of groundwater are the most precious resources around the world that balances are shrinking day by day. In connection, there is an urgency need for demarcation of potential groundwater zone. For these rationale integration of geographical information system (GIS) and remote sensing techniques (RS) for the hydrological studies have become a dramatic change in the field of hydrological research. These techniques are provided to locate the potential zone of groundwater. This research has been made to indent groundwater potential zone in Ariyalur of the southern part of India with help of GIS and remote sensing techniques. To identify the groundwater potential zone used by different thematic layers of geology, geomorphology, drainage, drainage density, lineaments, lineaments density, soil and slope with inverse distance weighting (IDW) methods. From the overall result reveals that the potential zone of groundwater in the study area classified into five classes named as very good (12.18 %), good (22.74 %), moderate (32.28 %), poor (27.7 %) and very poor (5.08 %). This technique suggested that very good potential zone of groundwater occurred in patches of northern and central parts of Jayamkondam, Andimadam and Palur regions in Ariyalur district. The result exhibited that inverse distance weighting method offered in this research is an effective tool for interpreting groundwater potential zones for suitable development and management of groundwater resources in different hydrogeological environments.

Keywords : GIS, groundwater potential zone, hydrology, remote sensing
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