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كل الحقوق محفوظة للمدرسة الوطنية العليا للري.

Abstract : This study aims to delineate groundwater potential zones using an integrated approach of remote sensing (RS), geographical information system (GIS), and analytical hierarchy process (AHP) method in the middle and high Cheliff basin, Algeria. Multiple data such as lithology, lineament density, geomorphology, slope, soil, rainfall, drainage density, and land use/land cover were considered for delineating the groundwater potential zones. Spatially distributed maps/thematic layers of all the aforementioned parameters were created using remotely sensed data as well as ground data in a GIS environment. The assigned weights of the thematic layers and their features were then normalized by using the AHP technique. The delineated groundwater potential zones in this study area were categorized as very good, good, moderate, and poor, respectively. The results showed that the area along the Chlef River which is approximately 6% of the total study area was delineated as an area having “very good” potential for groundwater. The “good zone” delineated encompassed approximately 31% of the study area and was found in the pediment-pediplain complex zone. The moderate zones encompassed approximately 58% of the area. The “poor zones” encompassed approximately 5% of the area which included the cities of Ramka, El Hadjadj, Moussadek, and certain parts of Mekhatria. The groundwater potential zones map was compared with the actual discharge data from various wells within the study area and was found reasonable. Overall, this study provides a convenient approach of delineating the potential of groundwater availability which ultimately will aid in better planning and managing of groundwater resources.

Key words : Groundwater potential zones · RS · GIS · AHP · Chelif basin

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