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Ground water prospects in Kirundo District, Northern Burundi: Modeling by Remote Sensing and GIS

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ABSTRACT

The importance of groundwater is growing due to the rising demand in the Kirundo District northern part of Burundi and Remote Sensing (RS) and Geographic Information System (GIS) have come as a set of modern tools in the investigation/identification of the Groundwater potential zones - an important bounty of Groundwater. The input data for this study included Geology, lineaments, drainage density, land use/land cover, soil cover, and nature of landscape and distribution of land-surface slope. RS data products used are Landsat TM image, viz., TM 5–4-3 as well as ASTER G DEM of 30 m resolution. A groundwater prospect map is produced by integrating thematic maps, viz., geology, lineament density, drainage density, land use/land cover, soil and slope maps. The groundwater prospect zones of Kirundo district was found to be very good (7.82 km^2), good (80.45 km^2), moderate (107.17 km^2), low (421.58 km^2), poor (360.07 km^2), respectively 1, 8, 11, 43 and 37% of the study area. Based on this investigation, it has been possible to identify villages that are important from the point of view of groundwater prospects in the Kirundo District, Burundi.

Keywords: Groundwater prospects zones, Integration, Remote sensing and GIS.

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