



Groundwater Vulnerability Assessment by Using Drastic and God Methods

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Abstract: Vulnerability of groundwater to pollution was investigated for the optimum decision to provide the best options for stakeholders to use the suitable lands for plants and crop cover, in addition to establishing factories and industrial development areas based on the results of vulnerability maps. The aim was to choose the best method of assessment groundwater vulnerability in Teeb area, Missan province, and south of Iraq. Two models DRASTIC and GOD of vulnerability maps are analyzed using GIS techniques. DRASTIC vulnerability index (DVI) is computed as the weighted sum overlay of the seven layers. The final result of DRASTIC map ranges from 60 to 139, which represent very low to medium while the GOD vulnerability Index (GVI) is based on three parameters. GVI ranges from 0 to 1. The output of GOD map ranges from 0 to 0.6, which represent very low to high. The DRASTIC method includes three classes, for which the low class dominated most of the study area by 80.29% of the total area, while the GOD method represented four classes (very low, low, medium and high), the medium is the most prevalent in the study area with 54.12 % of the total area. Pearson correlation coefficient for DRASTIC and GOD were 73.05 and 49.79 per cent respectively. Therefore, the DRASTIC method is better for representing the vulnerability groundwater for contamination than the GOD method.

Keywords: Groundwater vulnerability, DRASTIC, GOD, GIS
