SINKHOLES MAPPING USING GIS: VULNAREBILITY AND RISK ASSESSMENT EMPHASIS ON DEVELOPMENT AREAS

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ABSTRACT

Over the decades, Geographic Information Science (GIS) techniques are used in various types of natural hazards applications. This particular study has been carried out with the aid of GIS techniques for geohazard mapping of cover–collapse sinkhole at Dishmook city, south west of Iran. In order to prepare geohazard map; various data such as hydrochemical, hydrogeological data and geological maps along with the field observations have been used. These data were integrated with the DEM of the study area. Parameters such as the dewatering of the gypsum and the thickness of the cover formation have been estimated for those locations where sinkholes are occurred. The density of the previous collapses was also computed. The coupling of density and dewatering of the gypsum were used to delineate zones of low, moderate and high collapse hazard areas. In addition, the study shows that the factors such as construction along the sinkhole, earthquake, and groundwater make the roof of the caves unstable.

Key words: Geohazard; Sinkhole; Gypsum Karst; GIS