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Runoff Estimation for Suggested Water Harvesting Sites in the Northern Jordanian Badia

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ABSTRACT

Jordan is characterized by severe weather conditions, therefore great temporal and spatial variations in rainfall; runoff and evaporation amounts are expected. Water harvesting has been practiced in Jordan throughout history for both irrigation and household purposes. A major research project was carried out in the Jordanian Badia on site selection criteria for rain water harvesting systems based on the integration between indigenous knowledge and the use of Geo-informatics. This work was followed by conducting a geophysical and soil investigation for five potential sites. In this study, GIS was used to investigate the potential of having enough runoff in the five selected sites to establish water harvesting dams based on rainfall, evaporation data and catchments' areas for the selected sites. It was found that the estimated runoff that could be harvested on annual basis at these sites varies between 0.2 Million Cubic Meters (MCM) in Alaasra site to 0.82 MCM in Al-Manareh (Al-Ghuliasi) site. This indicates that these sites have the potential for small scale water harvesting that could be utilized by local livestock owners in the area to water their livestock.

KEYWORDS

Water Harvesting; Rainfall; Runoff; Badia; Jordan

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