Abstract

This study aims to determine places of high priority for the establishment of water reservoirs in the frame of the process of water harvesting. This process has important positive impacts on economic, social and ecological levels.

The use of geographic information systems (GIS) gains extra importance in arid, marginalized and remote areas. In most of these places field data are very limited as in the case of the area of study located in the southwestern part of Hebron. It extends over 26 km^2 and characterized by both scarcity of rainfall and simple life style that combines both peasantry and grazing.

To achieve the aim of the study, natural data were collected including rainfall, geological, soil, and land-use data. Moreover, anthropogenic data such as ratio of literacy and herd ownership were collected and used as proxies for socio-economic situation of the citizens.

To compensate for the lack of field data about runoff, the Curve Number approach was applied. This technique was developed by the Department of Agriculture in the United States (USDA) and applied in many research and studies in various environments. A hydrological model

had been developed to determine stream order of the drainage system that used as one of the inputs to prioritize the location of the reservoir.

The above described data layers were used in the GIS environment to divide the area of study into places of different priority for water harvesting.