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Abstract

Judicious use of the limited fresh water resources is the need of the hour. If sufficient measures are not taken up immediately, we will face a crisis which will be detrimental to the very survival of mankind. The Kandi region of Jammu district in Jammu Himalaya is facing a similar problem of acute shortage of drinking water. One of the most logical steps towards this goal would be acknowledging the importance of rainwater harvesting. The Central Ground Water Board (CGWB), North Western Himalayan Region, Jammu, has already initiated few schemes to recharge and conserve the water resources. The water resources in this study area have been estimated by water balance assessment approach. The water balance study using the Thornthwaite and Mather (TM) models with the help of remote sensing and GIS is very helpful in finding out the moisture deficit and moisture surplus for an entire watershed. The water balance calculation shows that the maximum annual runoff results from the built-up areas/water body followed by agricultural land, dense forest and minimum for the barren land and open forest. The annual deficit in the Devak–Rui watershed is 0.38 mm and the annual surplus is 1,251.34 mm. GIS software's have been used for spatial analysis for generation of various thematic layers and integration to produce the final runoff map. The total runoff of Devak–Rui watershed was calculated as 1,160.48 mm from the total precipitation of 1,429.26 mm. It was found that suitable sites for rainwater harvesting structures in the Devak–Rui watershed covers an area of nearly 11% of the watershed area whereas the rest of the watershed area was assumed as unsuitable site for rainwater harvesting.

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