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Hydrological Potentials of Hyper Arid Lands in the Indian Desert

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Deserts are the areas of degradation of surface and groundwater resources. The lowering of water table is one of the crucial indicators of the degree of desertification. The surface and groundwater conditions are important measure of sustainability in the dry and fragile ecosystems. The Indian desert comprises of three ecological units on the basis of water availability. The eastern fringe of the semi-arid lands along the Aravallis, the central arid lands which comprise the major parts of the Indian desert and a third narrow belt of hyper arid conditions along the International Border of India and Pakistan along the western fringe of Jaisalmer and Bikaner districts. Several researches have revealed that the eastern semi-arid lands with 400 – 500 mm mean annual rainfall have higher surface drainage density in the Luni river basin coupled with a relatively higher water table. The arid lands with a mean annual rainfall of 200 – 350 mm rainfall have no drainage pattern worth the name of surface water and have a drastically lower water table. The low water table in the arid lands is not necessarily a function of decreasing rainfall. A few macro and meso level studies have indicated that the water level goes on lowering in an inverse relationship with the increasing aridity index. In the present sub-micro village level study there is a crucial finding contrary to the popular belief. Surprisingly, the water table in the remotest hyper arid villages has been measured higher than the groundwater in the semi-arid ecosystems. The authors attempt an analytical enquiry into this unique phenomenon.

Biography

Sahila Salahuddin is Senior Research Fellow in the Department of Geography at Aligarh Muslim University. She is doing her doctoral work on "Micro Analysis of Desertification Intensity in the Hyper Arid Lands of India" with specialization in Arid Land Ecology. The researcher has qualified Joint UGC-CSIR NET and Junior Research Fellowship with 59th National Rank and acknowledges her research funding by the University Grants Commission. She has also won the Postgraduate Science Merit Scholarship of the University.

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