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Sustainable Utilization of Rainwater Harvesting in Dhaka

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Water is the most significant natural resource and something that most of us take as granted. Like all other urban cities, there is a huge demand of water in Dhaka, the capital of Bangladesh. Due to the lack of developed water treatment facility, almost 80% of the amount of water is obtained from ground water sources. As a result the ground water level is depleting at an alarming rate of 1-3 m/year. On this context, rainwater harvesting can be an epoch-making solution of this problem. Rainwater harvesting, in its broadest sense, is a technology used for collecting and storing rainwater for human use from rooftops, land surfaces or rock catchments using simple engineered techniques. Bangladesh is situated at such a topographical condition where there is an adequate rainfall every year. The high annual rainfall in the country makes rainwater harvesting a feasible solution for meeting up the overgrowing water demand and mitigate groundwater depletion.Dhaka receives an average monthly rainfall of 177 millimeters which rises up to 388 millimeters during the monsoon. Considering the average rainfall a 500 square feet primary reservoir placed on the roof of a building can hold 8200 liter of rainwater every day, in monsoon this volume can be 18000 liter. This water can directly be used for domestic purposes and can be stored in some secondary reservoir for future use. Excess water coming from the over flow of primary roof top reservoir can be charged into the ground water aquifers through intrusion well. This can serve the purpose of artificial ground water recharge. This paper will explore these effective ways of sustainable utilization of rainwater and will provide some outlines for an economic rainwater harvesting system.

Keywords: Rainwater harvesting, Ground Water Level, Alternative water source, artificial groundwater recharge, Sustainable solution

Field of Research: Environmental Engineering

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