

## **Rainwater Harvesting: A Solution for the Crisis in South Asia**

*-Harsh Mahaseth*

Water is an essential life-sustaining resource that underpins the fabric of human development. Being a renewable resource, water enables all living beings to survive and flourish. However, men, women, and even school-going children have to wait hours in line at the traditional stone taps for a few buckets full of water to sustain their lives. Such is the grim reality of Kathmandu, the capital city of Nepal. With rapidly growing population, improper planning and management, and pollution of nearby rivers, Kathmandu is faced with a severe water crisis. To fulfill their daily water needs, the people have overexploited the underground water, resulting in the sinking of the water table at an alarming rate of 2.5 meters annually.<sup>1</sup>

Depletion of water resources is an environmental problem which can have dangerous repercussions in the years to come. Uncontrolled and inappropriate usage of water shall produce an environment in which living beings would no longer survive which is an environment that is neither sustainable nor desired and will lead to annihilation of its own kind. As the water resources are depleted, an imbalance is being created in the ecosystem: forests are harmed, fertility of soil is decreased and the chances of landslides increase. This water issue may be resolved by conservation, replenishment and location of new sources.

The water withdrawal from groundwater sources has increased five folds since 1950<sup>2</sup> and is expected to double in the next decade. If the withdrawal rate of an underground resource exceeds its natural recharge rate, the water table around the withdrawal well would be lowered, creating a waterless volume known as the cone of depression. Any pollution discharged onto the land above will be pulled directly into the cone and will pollute water withdrawn by the well. To protect and preserve groundwater rainwater-harvesting should be done. Rainwater-harvesting is very beneficial as it helps to reduce water bills, helps in avoiding water scarcity and is also high in nutrients. Groundwater can also be conserved by using as minimum water as possible for taking showers, brushing your teeth, shaving, water plants when necessary and educating other people and getting them involved in helping save water.

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<sup>1</sup> Ram Charitra Sah, Groundwater depletion and its impact on environment in Kathmandu valley, August 2001.

<sup>2</sup> Water facts and trends, World Bank Council for Sustainable Development.

Poor management of water resources and infrastructure is a reason for south Asia to face water scarcity.<sup>3</sup> *"There is no shortage of water in the world, but there is a crisis of management of water supplies,"* says Amit Bitwas, head of the Third World Centre for water management.

Adaptation measures required for reducing vulnerability to changing water regimes at community level are good practice of sustainable development and disaster risk reduction. The challenge lies in getting the people accustomed with the risks that they were unaware of and measures that will benefit them. Local watershed management would ensure proper accountability in these communities. Awareness should be raised among the youth and also about the links between climate change and the impacts that it will have on the community.

Rainwater harvesting can ease the desperate situation by contributing significantly towards the fulfillment of the domestic water demand while also reducing the burden on groundwater. However, significant research on rainwater harvesting has not been conducted, and few have adopted this new process. This work can serve as a preliminary study for further research to be carried out.

In order to obtain recent and reliable information on the situation of water supply and rainwater harvesting in Kathmandu, an elaborate questionnaire was prepared, and a survey was conducted among an economically and socially diverse group of 120 youths from different school in Kathmandu. The survey reflected the desperate situation, showing that 51% of the people were facing an acute water shortage. Though 82% of the people were aware of rainwater harvesting, only 39% of them had implemented it, revealing the need to convince the youth of its feasibility and associated benefits through community projects and demonstration sites. Making the youth aware of such a process expanded their knowledge as well as made them aware of another alternative that could be used. Making the youth aware and also educating them about the implementation and management of rainwater harvesting will lead to desired results.

Thus, rainwater harvesting can become a genuine solution for the water crisis. It is pure enough for all domestic purposes and is simple and inexpensive enough to be considered in the community level as well as the household level. If properly managed and widely

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<sup>3</sup> International Decade for Action 'WATER FOR LIFE' 2005 – 2015, <http://www.un.org/waterforlifedecade/scarcity.shtml>.

implemented, rainwater harvesting could rescue the cities from a serious water crisis and to do this it is essential for the youth to play a role.