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WATER CONSERVATION IN INDIA: AN ANCIENT PROCESS

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ABSTRACT

The knowledge of water conservation is deep rooted in the science of ancient India. Our ancestors applied the knowledge in water resource engineering. They designed and constructed dams and a variety of water structures much earlier than the consciously believed Greek, Roman or other ancient civilizations. Every region of our country had its own water harvesting techniques, reflecting the geographical peculiarities and cultural uniqueness of different communities.

KEYWORDS: water conservation, water resource , water structures.

INTRODUCTION:

Ancient process of water conservation in India

Rajasthan, a large part of which is covered by the Thar Desert, has had a long tradition of water conservation. For instance builders of the famous Bundi and Chittorgarh forts had the vision of exploiting the natural catchments in the forts created by undulating hilltops. Rainwater was collected in several ways and water flowing down the hill slopes was also stored in a water body.

Water is very important resource for all living being but importance of water is much released by Rajasthan State because of scarcity of water. Traditionally people of Rajasthan are much conscious about water conservation. Following traditional techniques are seen to be applied for water conservation from hundreds of years ago:

Talab/ Bandhis

Talabs were reservoirs. They could be natural, such as the ponds (pokhariyan) at Tikamgarh in the Bundelkhand region or could be man-made, such as the lakes in Udaipur. A reservoir area of less than five bighas was called a talai; a medium sized lake was called a bandhi or talab; bigger lakes were called sagar or samand. The pokhariyan served the purpose of irrigation and drinking. When the water in these reservoirs dried up, the pond beds were used for cultivation.

Johads

Johads, in Rajasthan, were small earthen check dams built to capture and conserve rainwater, thus improving percolation and recharging ground water.

Baoris /Bers

Baoris or bers were community wells, found in Rajasthan, that were used mainly for drinking. Most of them are very old and were built by banjaras for their drinking water needs. They could hold water for a long time because of almost negligible water evaporation.

Jhalaras

Jhalaras were man-made tanks, found in Rajasthan and Gujarat, essentially meant for community use and for religious rites but not for drinking. Often rectangular in shape, jhalaras have steps on three or four sides. They were ground water bodies which were built to ensure easy and regular supply of water to the surrounding areas. The jhalaras collected subterranean seepage of a talab or a lake located upstream.

Water Temples or 'Step Wells

Another most unique example for harvesting rainwater and providing water for drinking purpose in arid parts of our country was the step well. Step wells are also called water temples of India. The idea to construct step wells was initiated due to the need to ensure water supply during the period of drought. Some of the step wells were dug very close to tanks to get drinking water throughout the year. Step wells are also called Vav, Vavadi, Bawdi, Bawri, Baoli, and Bavadi and can be found in Gujarat and Rajasthan States.

Adalaj-Vav is a very popular step-well i.e. about 20 kms from Ahmadabad. It is made in the form of a temple that ends into a well. The well is about six storey below ground level.

Kunds

Kunds, covered underground tanks were developed for tackling drinking water problems. Usually constructed with local materials or cement, kunds were more prevalent in the western arid regions of Rajasthan, and in areas where the limited groundwater available is moderate to highly saline. In such conditions, kunds provided convenient, clean and sweet water for drinking. They were also prevalent in Gujarat and Uttar Pradesh States. There are many such kunds that have met the water needs of the people of Rajasthan and other states over centuries.

Tanks

Most houses in Bikaner have an underground tank (Tankas) which were used to store water. They were circular holes made in the ground, lined with fine polished lime, in which rain water was collected. It took care of their annual needs.

One tank, one temple and a grazing land for cattle of a village was the concept of our ancestors which would support sustainable growth of villages. Water tanks served the purposes like flood control, prevention of soil erosion, reducing wastage of run-off and recharging groundwater. The management of tanks was given to individuals or to village communities or to temples. Entire tank system was suitable for direct irrigation for agriculture and easy for decentralized water management. These tanks were constructed using stone, cement or mud or a combination of these. Tanks / Eris are one of the

oldest in irrigation engineering designs in our country.

The temples in south India have huge tanks as part of the temple premises. Some of them have more than one tank. Besides serving the needs of the temple and use of water by devotees for purifying before darshan these tanks increased ground water levels.

Kuhl - Himachal Pradesh

Kuls are water channels found in precipitous mountain areas. These channels carry water from glaciers to villages in the Spiti valley of Himachal Pradesh. Where the terrain is muddy, the kul is lined with rocks to keep it from becoming clogged. In the Jammu region too, similar irrigation systems called kuhls are found.

In Assam, ancient kings constructed big ponds to preserve rainwater. In some places, the Garh is used to channelize river water to the agricultural field. A Garh is like a big nala, where both sides have big and long embankment and the middle side is left open for water to flow.

Thus it is evident that many communities in India in the past and present have effectively employed water harvesting to meet their water needs. Eco sustainable policy of our villages was based on the concept of land-water-vegetation. Surplus food, fodder, etc generated at the village level supported the towns and cities. Large part of the village prosperity came from the water harvesting system, which gave them an assured supply of water for irrigation.

Conclusion:

From going through all above ancient techniques of water conservation in India we are convinced that the process of water conservation is scientifically known to Indians since ages. It is nothing new in it. We would never have faced the problem of water scarcity had we continued the same techniques since then.

But increasing population, urbanization, industrialization, deforestation processes are reasons, where we compromised with the delicate natural process of water conservation.

A systematic support to local innovations on decentralized rainwater harvesting could provide substantial amounts of water in times to come. Simple local technique such as ponds and earthen embankments could help in harvesting and storage of rain water. Also traditional systems of rainwater harvesting would become more efficient if scientific attempts are combined to enhance the productivity of local knowledge. Instead of looking for big bang solutions, imported from the West, we must look at indigenous ways of water harvesting. This initiative could be undertaken by NGO's and other voluntary organizations. These would find greater acceptance from rural India and come at a lower cost.

However, using traditional methods of water harvesting is not rocket science. It requires community effort i.e. could be guided by the Gram Panchayats and funded by the State government. The government could play the role of facilitator and provide adequate funds. An increase in water supply would enhance agricultural output and farm incomes with positive spin offs on the Indian economy.

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