Water Harvesting Practices in Rajasthan & Their Socio-Cultural, Environmental Importance

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Abstract: Water is the precious nectar around which the human civilization has developed, be it the Egyptian Civilization around the river Nile or the Harappa settlements along the Indus river. And in the absence of a river, people settled around ponds or lakes.

The communities all over the world have been endowed with the wisdom of collecting the rain where it falls, so one can find such structures all around the world. These use indigenous technologies to collect and store water.

Water harvesting could be understood as the collection and storage of any form of rain water: snow or rainfall from a particular watershed. Water harvesting is not a new technique as it was practiced as early as 4500 BC by the people.

All around the world, water harvesting has been adapted in various ways as per the conditions and thought process of the people. But the basic concept has been same everywhere. That is, the importance and impact of pure, drinking water on the civilization.

The history of water harvesting in India goes way back to Vedic times. All over India, various systems of rain water harvesting are found. These are adapted according to the climate, terrain etc. Rajasthan or "Dharti Dhora Ri" makes one visualize miles of sand dunes, the rolling gait of camel with the rich and vibrant colours of the attire. It also portrays hot winds and acute scarcity of water.

Water is the first parameter for development of a settlement but the communities of this proud state never mourned the unpredictability of rainfall. Rather they developed, celebrated and maintained such rainwater harvesting and collecting water bodies, which are thriving till date. The people weaved their lives around the ponds and talaabs in a manner that these structures became an integral part of their folk tales, rituals, festivities, which resulted in making them a collective responsibility.

The viewpoint has always been to catch the rain drops where they fall, thus evolved an intricate and distributed system of various water collection and storage systems. This paper talks about the various water harvesting systems weaved in the social fabric of Rajasthan, their cultural significance and the delicate balance of such systems in the man-water relation.

1. INTRODUCTION

Water, being a basic necessity for the survival of life has been saved, preserved, stored and revered by the residents of desert towns since time immemorial. Water crisis is the major problem of today's world which could turn into water war any time.

Rainwater harvesting has been an indigenous technology weaved seamlessly in any desert area around the world. Rajasthan stands out being a desert state where such structures have a history of their own with unique architecture and Neighbourhood development around. The structures constructed for rainwater harvesting have become focal points for many activities of a community.

The architecture around many such structures shows the need for making water conservation much more than just a fulfillment of a need. These structures hold the erratic rainfall safe from evaporative loses, seepage and salinization for whole year or more.

2. TRADITIONAL WATER HARVESTING PRACTICES IN INDIA

The history of water harvesting in India goes way back to Vedic times. Archaeological excavations of the Indus Valley civilization at Dholavira, dating back to 3000 B.C, in the Great Rann of Kutch, showed a sophisticated system for harvesting rainwater. This is the earliest example found anywhere in the world.

All over India, various systems of rain water harvesting are found. These are adapted according to the climate, terrain etc.

Rainwater harvesting has the following benefits:

- It recharges the ground water table.
- This practice can be done on individual as well as community level.
- It corrects the imbalance between water needs and availabilty.

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- Rain water is one of the purest form of water so it could be used with minimum treatment.

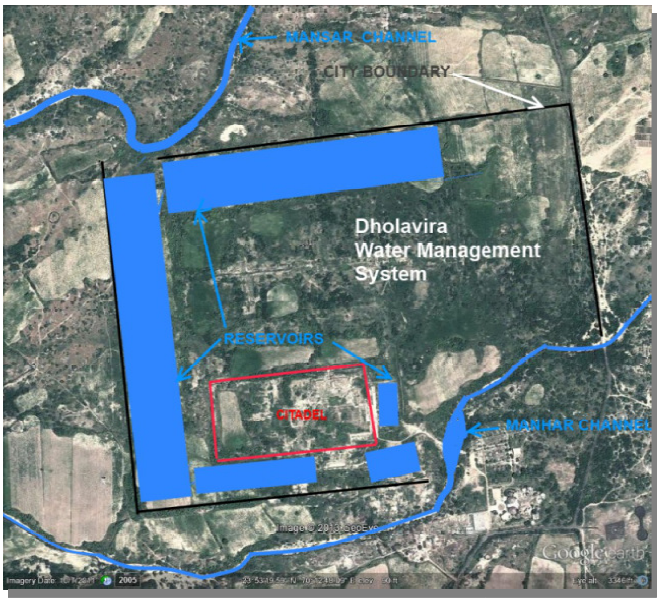

Fig. 1. Dholavira's Water Management System

Fig.2. Traditional Water Harvesting Practices in Various Regions

3. WATER AND RAJASTHAN

The semi-arid state of Rajasthan is dotted with various water collecting structures, which lie redundant with the advent of British Raj and then the Independent India. Before that such structures were a communal responsibility.

In 1863, the Public Works Department (PWD) was created, thus withdrawing local control (of the village community) from johars and talabs.

Similarly in 1865, the Reserved Forests, Protected Forests, and Revenue lands, arable land and non-cultivated land took over the commons; the wealth and income earned from them were subjected to tax and were taken from the people to be handed over to the Crown.

This mainly marked the end of the commons which translated into a considerable decrease in community resources.

It also marked the end of the community's interest for their upkeep and their attitude of religious reverence for the water bodies, an aspect which their folklore still bears traces of.

This heralds the beginning of the degradation process of natural resources as well as the major harm done to the soil due to erosion, as a result of the degradation of the forests and their cover.

The state average rainfall is 531 mm against the national average of 1200 mm. the Western Rajasthan is arid to semi-arid with low, erratic rainfall, high summer temperatures, low humidity and high velocity winds causing an annual evapotranspiration of 2000 mm, a negative water balance and acute water deficit.

Fig. 3. Stepped Well, Abaneri, Jaipur

The architecture around the water bodies has always celebrated the life of the community around. It's a manifestation of the ideas, the needs, and the culture of the people of that era and that place. These spaces nourish the community emotionally and spiritually.

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The arched pavilions, like at Abaneri, Jaipur around a water body provide a refuge to the people. They act as a place to sit and talk in the extreme hot weather protected from the dusty, hot "loo".

The step wells have been socio- religious institutions manifesting the indigenous architecture of the area. The structure pushed deep into the earth has its own practical reasons of insulation, shade but such spaces have been used as resting spaces, gathering spaces.

They signify a journey to the earth. Despite, their functional obsolescence of fetching water in today's context, it continues to inspire visitors till today.

And even now few are functional in cities like Jodhpur. Tapi Bawri has water around the year. It's been a place for the local children to learn swimming and the water works department still supplies water from it. Though it creates despair in the viewer's mind with the garbage lying around.

Fig. 4: Tapi Bawri, Jodhpur City

The Shekhawati " Kuan" an elaborate structure with a tall pillars, raised platform and painted chattris, used to act as the meeting place for the village women and as a " chaupal" for the elders.

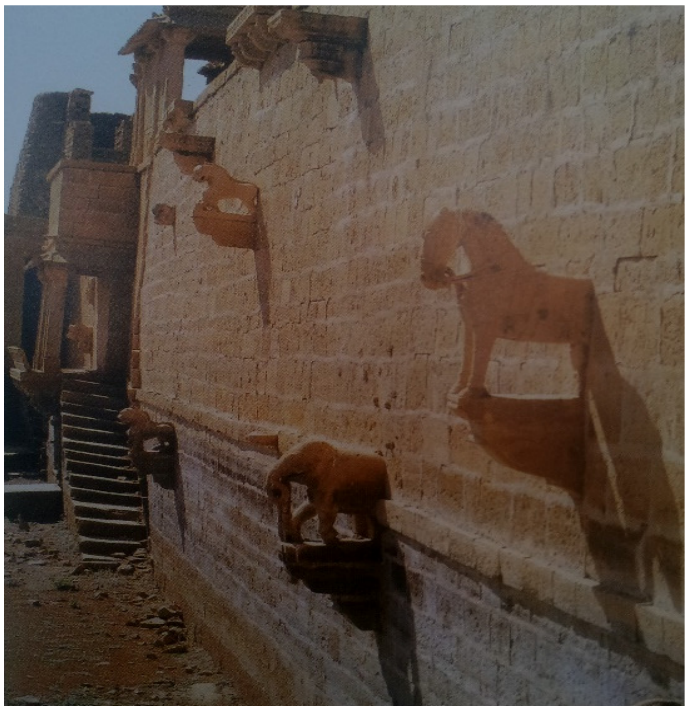

Fig. 5. Animal Figurines Depicting Water Levels

Water is such a precious commodity that such places were treated like temples. Even the current water level of a pond was not depicted with simple markers but elaborate animal figurines which were the base of legendary stories. Galtaji is an ancient Hindu pilgrimage site situated 20 km from Jaipur.

It is an amalgamation of temples, pavilions, holy kunds and natural springs. The temple offers a picturesque view of Jaipur city from its heights. The famous Galta Kund, is one of the 7 kunds and doesn't go dry ever.

The Galtaji Temple is a souvenir of the former age and a sacred pilgrimage of the Hindus. Even, the Sawai Jai Singh based the location of pink city as if it's been watched and guarded by the temple.

The Kos Minars built during the reign of Akbar are simple Minars marking the distance in "kos" or 3 kilometres. Besides keeping the royal entourage on track, they helped travellers reach their destinations without losing their way.

There was a step well built around every tenth Minar that had a steady supply of cool drinking water for the weary traveller. This also served as a vital spot for communication as a drummer and a horse mounted soldier were deployed at all these Minars.

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Fig.6. Galta Ji, Jaipur

The Fort of Jodhpur is flanked on one side by the revered Ranisar and Padamsar which supplied water to a very large segment of the old city. Their auspicious and royal status made sure of the sanctity of water. Till today, the water is clean.

Fig. 7. Ranisar, Jodhpur City

Whereas the Talabs like Fateh Sagar have lost their place and have become a dumping ground. This talab had witnessed the celebration of Doodh Poornima with hundreds of floating diyas each year. Now the deep foundations of residences all around etc have disrupted the underground flow to the water body.

Fig. 8. Fateh Sagar, Jodhpur City

Similarily the Talab lying on the foothills of famous Ganesh Doongri is lost in the congested colony and is a home to garbage and water hyacinth. in earlier times, this used to be on the prime of its glory during Ganesh Chaturthi, with a fair at its banks and people offering their prayers.

Fig. 9. Talab at Ganesh Doongri

4. CONCLUSION

Rajasthan is the largest state of India with an area of 10% of the total geographical area of the country and only 1% of the total surface water resources of the country. The rivers of the state are rain fed and are classified into 14 major basins.

With a per capita availability of 780 Cum and problems of water logging and salinity generated by large scale projects like Indira Gandhi Nahar Pariyojana, such traditional water harvesting systems can be the answer.

The traditional water harvesting bodies in Rajasthan have been very different then the water features incorporated in design all over the world. Here the water becomes life of a community.

It's not a bare ornament but a live, breathing phenomena. In cities like Jodhpur, there existed an intricate network of such structure which were the life of the community in every sense.

With the growing water crisis, it's the duty of an architect or a planner to design such rain water harvesting structures that people connect with them rather than considering them only as tanks. Only and only then such bodies can survive and thrive and solve the impending water crisis.

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