

Rainwater-harvesting: Utmost need of Thar Desert

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Rajasthan is the largest state of India and accounts about 5.5% population of India. The total population of the State was 6.86 crores including 1.70 crores of urban population (24.87%) and 5.15 crores (75.13) of rural population (2011 census). The population below poverty line was estimated to 152.80 lakh and about 15.01% of the rural population and 24.36% of the urban population. Literacy of rural population was estimated at 55.92 per cent compared to 76.89 per cent for urban population (2011 census). It covers 10.4% of India's total area. The state Rajasthan is situated on the north western side of the India, where it comprises most of the wide and inhospitable Thar Desert (also known as the "Rajasthan Desert" and "Great Indian Desert"). The Marwar region of the Thar Desert in Rajasthan comprises seven districts viz., Jodhpur, Jaisalmer, Barmer, Nagaur, Pali, Jalore and Sirohi. It is the most densely populated arid region in the world Desert. Apart from this, the cattle population is also very high with a density of 80 cattle per sq km. Thus, there is enormous pressure on the natural resources such as water and fodder.

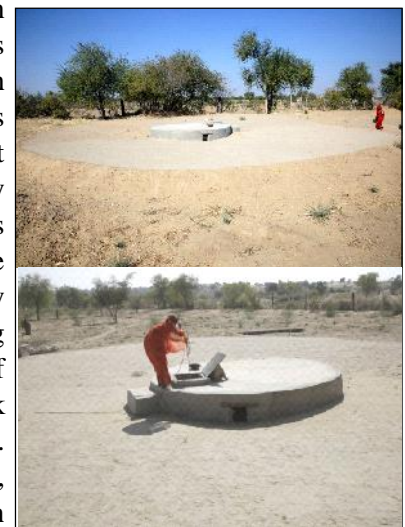
Water scarcity in Thar Desert: Thar Desert faces scarcity of water in underground wells and natural reservoirs in the wake of below average rainfall. Women who usually are responsible for fetching drinking water have to travel 3-4 kilometers to get it from underground wells. The water is saline and is contaminated with excessive fluoride which causes dental and skeletal diseases. The most important aspect for the people of the Thar Desert concerning natural resource management is water management. Water is the main factor upon which all life depends and for many people living in the desert state the daily struggle for water is immense. The scarce element of water is a major factor in people's lives as it relates to all aspects



including health, hygiene, agriculture and employment. **Agriculture:** Water is directly associated to agriculture, without water it's impossible to raise crops which can have a severe impact on the economic situation of farmers and their families. The effect on agriculture also affects the variety of nutritious food available to the people. Many cannot grow much needed vegetables and are force to live on a minimal diet of chillies, onion and chapattis.

Health problem : A disease caused by high intakes of fluoride in underground water of Thar Desert, is having developed bone deformities, skeletal and dental fluorosis due to consumption of groundwater with high levels of fluoride. High intake of fluoride water shows early symptoms include sporadic pain and stiffness of joints and finally the spine, major joints and muscles, damaging the nervous system. Healthcare is a major issue in Thar.

Need of rainwater-harvesting : Shortage of drinking water is the main problem of western Rajasthan. Water is the most precious commodity in the arid regions. For survival under such conditions, people have been depending on rainwater harvesting (RWH) in the form of small ponds (*Nadis*), reservoirs, underground tanks (*tankas*), *Khadin* etc. either for drinking purposes or for agriculture, since time immemorial. The people of western Rajasthan, by and large, reside in scattered settlements (*dhanis*). Under such conditions it is inconceivable that organised and costly water supply schemes will be a feasible proposition to fully meet the drinking water requirements of the human and livestock populations. Therefore, in this area, the techniques of rain



water harvesting mainly *nadis*, *tankas* and *beries* have to be basic requirement of the people. Such systems provide convenient, moderately clean and sweet water for drinking which eliminates the need to scavenge for water in the hot months. At this juncture, we discussed about the importance of rain water harvesting in Thar Desert on basis of observation and discussion with local people.

The Non Government Organisation BAIF and GRAVIS focused to work with underprivileged section of the society of Thar Desert. The NGOs paying attention on their basic need *i.e.* water, and specifically working in rural remote desert of Thar. The working area of them is rural remote villages of Barmer and Jodhpur Districts. In this monograph, discussed impact of rainwater harvesting structures in these villages on the basis of personal observation and discussion with benefited women and girls.

The impact of RWH interventions programme done by different NGOs: Safe and soft water is a key for human development in Thar Desert. Access of water is directly associated with the health hygiene sanitation food security and nutrition. However, unprivileged people of the Thar Desert face deep scarcity of drinking water. For the rural impoverished communities in rain fed areas water scarcity is a constant challenge to life and wellbeing. Specifically women and adolescents girls are fetching water from 3-4 km daily. In traditional rural society taking care of household and making food and water available for the family members and the cattle has remained a responsibility of female members. Female of such community are more deprived, spend much of their time to fetching water for house hold need and family need. Further create constraints to get education for girls. Socially, the biggest impact of water scarcity could be seen in female population. Women and girl involved in the procuring water. They need to walk miles every day in the hot and harsh climate. This contributes wide range of health problems among women and disables girls to attend schools.

The different NGOs focused on the drought areas to improvise the living conditions of women in the region with the support of Government and other funding agencies. They are doing command able work to construct rainwater-harvesting structures at house hold level and community level. The Impact of rainwater-harvesting has to be fruitful on the lives of women and girls.

Efficacy of rainwater harvesting structures : On the basis of observation and discussion found the rainwater-harvesting has been very useful for the families of Thar Desert specifically for women. Most of the women felt the structure of rainwater harvesting brought qualitative changes in their lives.

There are number of ways that women benefiting from the rainwater-harvesting. Since collection and provision of water for house hold needs, is traditionally a women responsibility, having water available many positive changes in their lives:

For family	For women
– Water is available all the time, even in summers	– Relieved from burden
– Soft and clean drinking water available at home	– More time to creative and productive tasks
– Time and money saved	– Felt relaxed
– Hygiene status improved	– Saved from hot and harsh scorching sun

Health and hygiene : Carrying water from far away is mostly unsafe as well as contaminated to increase water borne diseases in the families. On the basis of discussion found that the lack of water extremely affected the hygiene of the family members. They have not sufficient water to take bathe daily. Lack of hygiene increased lots of health problems among all the family members. Because of lack hygiene level, the immunity power of children becomes low. The child death increased because of main root cause of low hygiene. Besides that not sufficient water is available in the family for even drinking. They faced health problems like kidney damage, digestion, skin problems, allergy etc.

However, the situation have to be improved the water has been made available within the household. Rainwater harvesting structures at house hold level state, dynamic changes in the hygiene status of the families. The women started to take bathe regularly and give children also bathe every day. They become able to keep house clean and maintain the basic hygiene with the availability of sanitation facility. However the level of hygiene improved and infectious diseases decreased. The women felt relaxed after save the time of fetching water from far away in harsh and hot days. RWH produce safe and soft drinking water so water borne diseases almost at the end. Besides that sufficient water available for drinking and dehydration problem decreased. Water availability at the door step,

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