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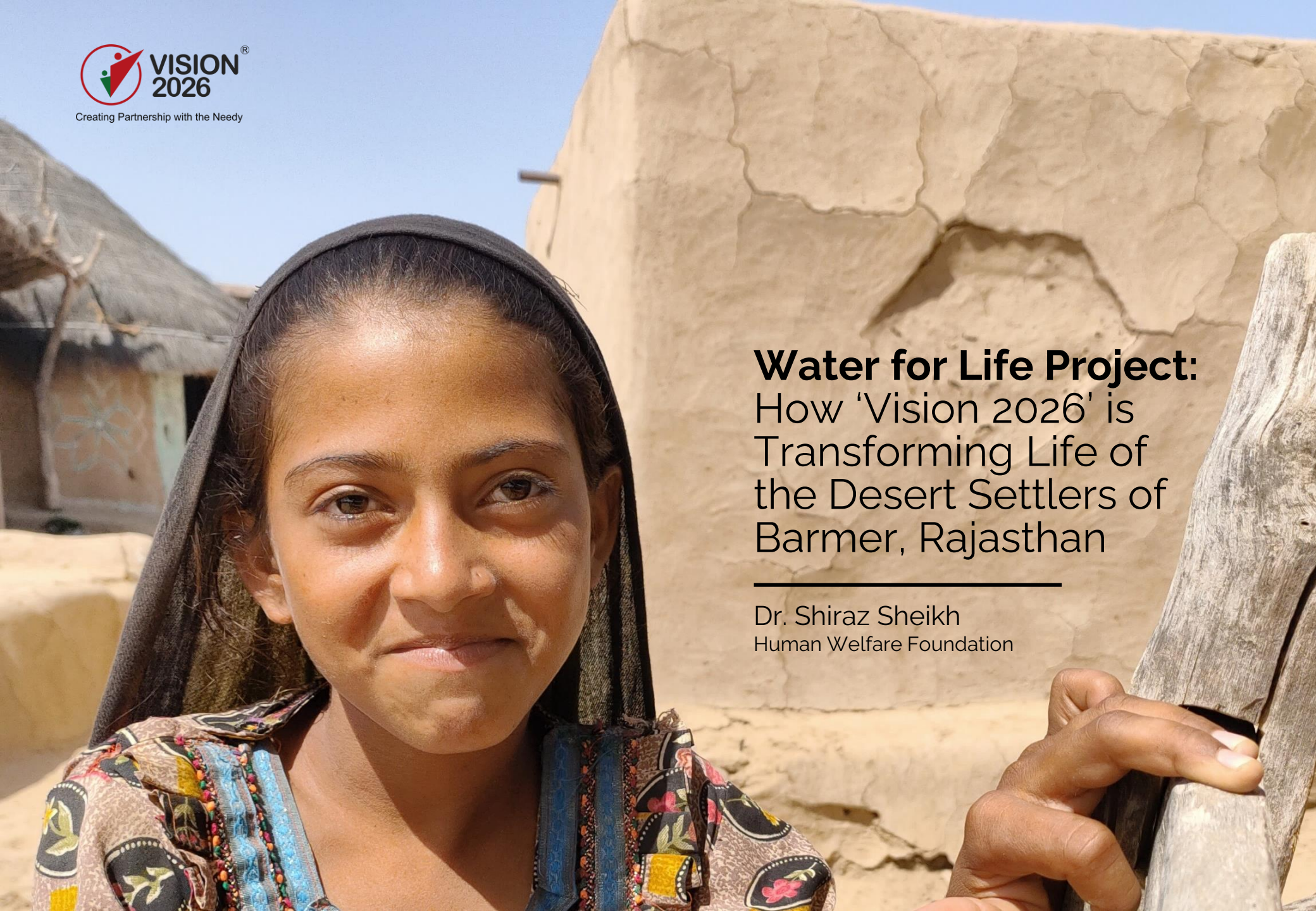

Water for Life Project: How 'Vision 2026' is Transforming Life of the Desert Settlers of Barmer, Rajasthan

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Changing
Lives

Unsafe water has always been a major cause of human misery. If we look at the Indian scenario, every day, millions of Indians wake up in the morning without access to clean water. That means millions of vulnerable families across India do not drink, cook or bathe in clean water. The findings of the report 'Drinking Water, Sanitation, Hygiene and Housing Condition' based on the NSS 76th round survey conducted during July - December 2018 revealed a grim picture that only 58.2 percent of the households in the rural areas and about 80.7 percent of the households in the urban areas had drinking water facilities within the household premises. Not only that the water supply is limited but the quality is also poor. According to the *Composite Water Management Index* released by NITI Ayog in 2018, India is undergoing the worst water crisis in history. Facts compiled in the report show that:

600 million people face high-to-extreme water stress. 75% of households do not have drinking water on the premises.

84% of rural households do not have piped water access.

70% of our water is contaminated; India is currently ranked 120 among 122 countries in the water quality index

From the public health point of view, polluted water is one of the major causes of disease in India. Even the groundwater in India is deemed unfit for human consumption in major parts of the country. One-third of the groundwater is found with a dangerous level of fluoride, iron, salinity and arsenic causing many waterborne diseases. The diseases are both communicable and due to direct consumption. One of the widespread communicable waterborne diseases in India is Diarrhoea causing a high rate of fatality among infants and young children. According to the *Global Health Observatory* data about 281 children under five in India died every day due to diarrhoeal diseases in 2016. This is 9% of the total deaths of under-five children and is the third leading cause of child mortality in India. In some states like Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, Rajasthan and Uttar Pradesh childhood mortality rate due to diarrhoea is two times higher than the national average. Besides diarrhoea, other waterborne killers are viral hepatitis, typhoid and cholera. Besides the health scenario if the scarcity of unsafe water is looked at from a social perspective one can find millions of women and children in India spending 3-4 hours each day fetching water from distant and polluted sources. The time spent on collecting water is not utilised for generating income, caring for family members, or attending school.

In a study conducted by the Human Welfare Foundation in Bramer it was found that women spend 4-6 hours daily fetching water from distant wells. A woman at Sadiq ki Dhani at Chadwa Takhtabad village of Ramser block in Barmer district covers 2 kilometers from one side to fetch one pot of water on her head. On average, she fetches water thrice a day. By one estimate a woman in Sadiq ki Dhani spends an average of 1400 hours and walks 4,000 km in a year collecting water.

In 3 years, she covers the distance between Delhi to Washington and spends 4 months in water fetching. Findings from other villages are similar with a slight difference in time and distance. Most of the desert's inhabitants reside in rural areas and depend on the residue of the scanty rainwater that has sunk into the ground below the reach of evaporation. Their childhood, youth, and adult age are consumed by the water deficiency of the region. The Human Welfare Foundation (HWF) which is working for the last two decades in the field of community development and drinking water projects came across the pressing need for intervention in the area of water. The research study found in its needs assessment survey that people's life can be transformed by making small interventions like deep well. In the last half, a decade the HWF has built around 52 deep wells in three rural blocks of the Barmer district. This report is part of the impact assessment of those deep wells in the life of beneficiaries, especially women.

The Land and the People of Barmer

The Barmer district in western Rajasthan is characterized by excessive aridity due to very low rainfall and high temperatures. It is one of the driest districts of Rajasthan characterized by scanty and erratic rainfall and limited surface water. Even groundwater availability is limited. According to the Jal Jeevan Mission survey of 2019 in Barmer, only 5 percent of households have individual tap connections. This facility is concentrated in the urban areas of the district and depended on imported water from the neighboring districts or states. The rural areas are deprived of any such civic amenities. They are totally dependent on groundwater which is scarcely available.

The western terrain of the district is colorless, barren, and water-poor and people depend on deep wells for everyday needs. The landscape seen is either of lofty ridges of sand dunes interconnected to each other in ceaseless succession or vast gravels tracts with desert grass, stunted and prickly shrubs tend to bind the soil.

The amount of annual rainfall in Barmer is low, ranging from about 270 mm or less. Almost 90 percent of the total annual rainfall is received during the southwest monsoon between July and September. As the district lies in the desert it faces extreme heat in the summer and cold in the winter. May and June are the hottest months of the year when the temperature rises to 50 °C. During the coldest month of the winter, the mercury dips to 2 °C, and the mean temperature in January ranges between 5 and 10 °C. The atmosphere is generally dry and during the scorching summer dust storm blows with velocities of 150 km per hour. The rainy season is short and during that span, the ephemeral desolate sandy tracts sprout forth transforming the brown tracts to vivid green.

The climate in Barmer not only determines the vegetation but also defines the living of the desert people. Their hamlet, occupation, and socio-cultural practices are intertwined with their perseverance to survive in the arid land. Their hamlet is a collective of a few houses called Dhani (ढाणी). A Dhani is a cylindrical clay house with a thatched roof and wide courtyard.

The design and material used to build a Dhani keep it warm in winter and cold in summer. The shape protects it during heat waves and high-velocity dust storms. The cylindrical architecture of the hut allows heat waves and dust storms to flow along the circumference and deflects them on sideways. The local clay used to build the walls act as thermal resistant and delays the transfer of outside heat into the house. The thatched roofs made of millet stem and local sewan grass create an insulating effect thus trapping heat during winter and preventing heat to enter inside during the summer.

The climate and scanty vegetation also determine the dietary habits of the people. During the short span of the rainy season mainly three crops are cultivated. Consequently, they depend on low-protein cereal grains like Bajra (pearl millet) and high-protein seeds like Guar (cluster beans) and Moong (green gram). Sheep and goats are herded and occasionally eaten. Most villagers drink goat and cow milk. Both their living and food habit revolves around the primary determinant of the desert – the Water. Water or the lack of it determined the cultural practices and the lifestyle of the rural Barmer.

A traditional clay house in Majna ki Dhani at Marroof Ki Basti (Ramsar Block)

A secluded hamlet, locally called Dhani

The ‘Water for Life’ Project

Barmer is a north-western district of Rajasthan bordering the frontier of Pakistan to the west. The district is spread on the expanse of a sandy plan forming part of the Thar Desert. It is also surrounded by rocky hills. The breeding of cattle, horses, camels, sheep, and goats is important to the economy here. The region is dry and only the southern part touches the Luni River Basin. It is a rain deficit region and the populace depends on deep wells for water usage. The successive governments over the last six decades spent millions to bring canal water here and dig Hauz. However, both projects did not yield results. the traditional water bodies called ‘Beris’ (बेरी) are the only suitable water source.

The villagers in the Barmer border area live in circular mud houses with thatched roofs. The houses are called Dhaani (ढाणी) and their unique cylindrical shape helps in the distribution of the force of water in case of floods and earthquakes. These Dhaanis are scarcely situated. The open deep wells are being used as drinking water sources. A deep open well costs an average of ₹1,25,000. Many families are unable to have their own well. Which forces them especially women and teenagers to fetch water from distant wells. The scorchy summer and heat waves are other constraints aiding the hardship of women and teens who are responsible to fetch the water. The HWF which works in the rural development sector learned about this hardship and decided to make an intervention. Through its Drinking Water Project, the foundation began to dig open well for community usage in the villages of Barmer. An open well dug is usually 50-150 feet deep and 3-4 feet in diameter. During the assessment period of three years, 29 open wells were dug up benefiting 6 villages in the district. To make an assessment of the social impact of the open well in the life of the villagers the investigator visited the villages and interacted with the beneficiaries to evaluate their experience, feedback, and impact. Following are the findings of the field research.

How It Works

An open well dug by the HWF is usually 50-150 feet deep and 3-4 feet in diameter. During the assessment period of three years, 31 open wells were dug up which benefitted 3 blocks in the district. A well is managed by the local hamlet where it has been built. The beneficiaries do not pay anything for fetching water from any of these wells. However, they are responsible for cleaning the well and taking out sand from it.

The Change

The Field study found that women spend 4-6 hours daily fetching water from a distant well. A woman in this hamlet walks 2 kilometers from one side to fetch one pot of water on her head. On average, she fetches water thrice a day.

By one estimate a woman here spends an average of 1400 hours and walks 4,000 km in a year collecting water. The opportunity cost of collecting water for women are far-reaching in terms of health and economic productivity.

While noting feedback from beneficiaries it was found that the deep well built by the HWF has transformed their personal life. As girls start fetching water at the age of 10 and continue till her 70s, she suffers from chronic neck pain. A woman spending a half day in water fetching deprives her children of parenting. The childhood of girls is lost as they join their mothers.

Their schooling also suffers due to this. The dropout rate after primary school is 98%. The cattle too are the beneficiary as they are fed with fresh and cold water. The time saved due to the sponsored well is spent on other productive activities. Few teen beneficiaries shared their feedback that how the presence of the well has helped them in completing their schooling. The girl children in their early teens shared how they were responsible to take care of their younger siblings when mothers used to go fetch water. As the well is built in their hamlet their childhood is back with more recreational activities. Most beneficiaries were found satisfied with the water quality. There are specific cases of beneficiaries who shared how the presence of a well has transformed their lives.

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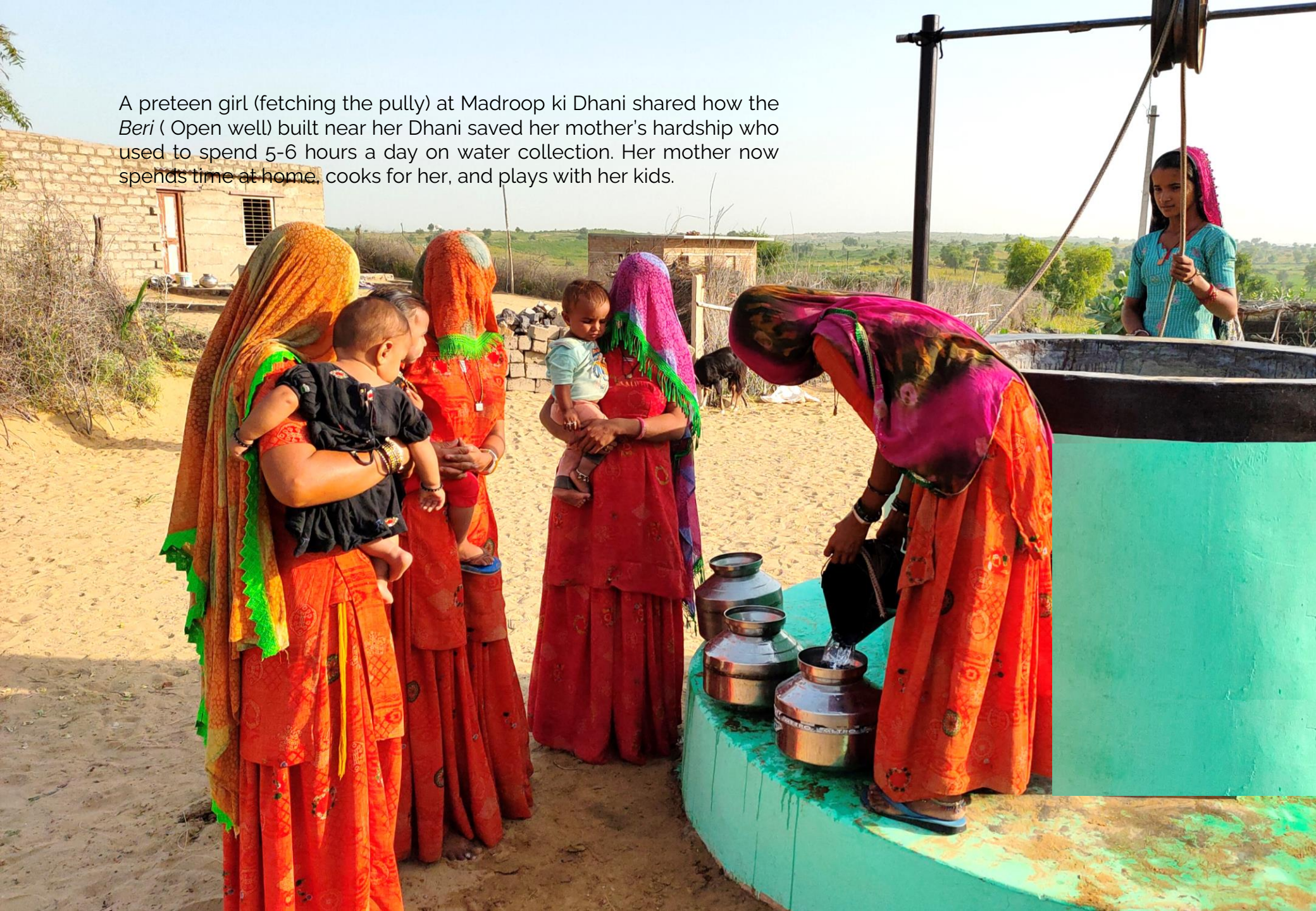
9 years old Reshma at Maluwa ki Basti used to fetch water thrice a day walking 1.5 km distance from one side at a time. After building a *Beri* at 100 meters from her *Dhani* she saves free time for her studies and plays with her younger sister.



A preteen girl (fetching the pully) at Madroop ki Dhani shared how the *Beri* (Open well) built near her Dhani saved her mother's hardship who used to spend 5-6 hours a day on water collection. Her mother now spends time at home, cooks for her, and plays with her kids.

In most cases women are responsible for fetching water, however, Rana – a 70 years old desert-man – from Roopnagar hamlet was an exceptional case. He shared how he fetched water for half a century in Pakhal – a local camel cart – from 16 km. He is happy about the open well built near his Dhani but jokes how we reached so late in his hamlet as now he has retired from this responsibility.

Everyday hundreds of cattle, manly goats, camels, and sheep come to these Beris and drink water. In some cases, water is also carried on camels and sold in villages deprived of well.

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