

OASIS OF HOPE



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charity : water

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Reflections on Water, Sanitation and Health
in Thar (WSHT) Project



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Reflections on Water, Sanitation and Health in Thar (WSHT) Project

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CONTENTS

Author's Note

Introduction 7

I Access to water leading to improved health outcomes 11

II Women and girls : From being worst hit to taking charge 16

III Developing community capacities and leadership 21

IV Enabling climate change adaptation 25

V Making the most from WSHT experience: The road ahead 26

Acronyms 30



Author's Note

The Thar Desert, a harsh and unforgiving landscape, is home to millions of people who face daily challenges in their struggle for survival. With limited rainfall and extreme temperatures, water scarcity is a constant threat to their livelihoods and health. Poverty, lack of awareness, and the impacts of climate change have further exacerbated these difficulties.

GRAVIS, a dedicated NGO, has been working tirelessly to support the rural communities of the Thar Desert. Through the Water Sanitation and Health in the Thar Desert (WSHT) project, they have implemented innovative solutions to address the region's water crisis. By constructing rainwater harvesting structures, renovating village ponds, and installing bio-sand water filters, GRAVIS has improved access to safe drinking water and sanitation facilities. The project has not only provided tangible benefits but has also empowered the local communities. Through training and community mobilization, GRAVIS has fostered a sense of ownership and responsibility among the people. This has enabled them to become more resilient in the face of adversity and to take charge of their own development. Communities find themselves in a much better situation, physically and financially too, to combat droughts and impact of climate change.

The WSHT project serves as a beacon of hope in the Thar Desert. It demonstrates that with the right approach and the support of local communities, it is possible to overcome even the most challenging circumstances and build a sustainable future for all. As water shortage is a much widespread phenomenon in the Desert, and a large number of people need support in the form of water availability, hygiene, and health interventions, further expansion of the intervention to areas with similar difficult climatic conditions is pertinent.

Neetu Sharma



Introduction

Water is predicted to be the main channel through which the impacts of climate change will be felt by people, ecosystems and economies. Impacts on the availability and quality of freshwater resources, and more so water-dependent services such as sanitation, and health are some of the major concerns occupying the policy discussions on climate change, water scarcity and health. This implies a stronger focus on ensuring the availability of clean and safe water for drinking, as well as ensuring the availability of sufficient water for personal use and other needs, for all. However, populations in several regions do not have access to sufficient water to meet their needs. Drought prone areas, particularly in the low and middle income countries (LMICs) reel under heat waves and severe water shortage to the extent that it may threaten their survival too. In such regions, water scarcity directly affects the ability of people to maintain personal hygiene and even consume safe drinking water on a regular basis. A combination of both - limited or contaminated water available for consumption, and lack of personal hygiene exposes people to several kinds of infections and diseases.

The Thar Desert, a severely drought impacted region, is one such region where water scarcity, combined with poverty and lack of awareness affects the nutrition and health profile of the rural communities. Known as one of the most difficult climatic zones for human survival, the Western parts of the Rajasthan in India are most affected by extreme water conditions most parts of the year and severe scarcity of safe and sufficient water for drinking, cooking, cleaning and other personal uses. As Desert communities in this region are dependent on rainfed agriculture and cattle rearing, illusive rains make them live with food and water shortages, under poor health conditions and abject poverty. Despite this, it is the most densely populated desert ecosystem in the world, and is home to nearly 27 million rural inhabitants. While perennial droughts have always been an issue for the desert people, climate change has exacerbated the situation by unpredictability and shift in the rain patterns in recent years. For instance, while overall precipitation may have increased in the last few years, rains are neither widespread as they are during the normal monsoon, nor do they come when most needed for the agricultural season. In the absence of water storage structures, both for household use and irrigation, people are unable to use rainwater from unseasonal rain and ironically end up paying a considerable sum to buy water for household use. Extreme weather conditions and water scarcity that define the life of impoverished rural communities in the Thar leaves an even more belligerent impact because of the dependency of people on agriculture and animal husbandry.

Poverty in the Thar Desert is inextricably linked to local environmental conditions. The proportion of people living below the poverty line is much higher than the national average in India as they live in the dry or non-irrigated areas where rainfall is low and highly variable. For the agrarian and pastoralist communities of the Thar, depleting soil and vegetation cover results in a direct threat to food security. Water scarcity impacts agricultural productivity and also milk produced from cattle. While the rural communities in these regions have always borne the brunt of such conditions, climate change has come to affect their livelihoods in a much more volatile manner, with their water, food security, nutrition, and health



status under constant threat.

Severe water scarcity prevents rural communities from maintaining hygiene, and non availability of nutritious food further exacerbates their nutritional levels. Living under the looming crisis of disease, rural communities find themselves deprived of adequate public health care support because of their remote locations and their inability to afford private and distant health care results in major health crisis, especially for the most vulnerable among them. Gramin Vikas Vigyan Samiti (GRAVIS), a large NGO working in the remotest regions of severely drought affected areas of Thar Desert, has been working tirelessly for almost four decades to support the rural communities and building their resilience to mitigate drought and climate change. GRAVIS equips the rural communities with skills and expertise to lead the community development initiatives for water security, food security, sanitation and public health. GRAVIS leverages available community resources and synergises them with targeted interventions for making water available for them for a various purposes. At the core of all the interventions is the gender inclusive and gender responsive approach that take cognisance of the gender dynamics in the region along with the social and cultural milieu. One one hand women and young girls are responsible for making water available for the household needs, on the other this responsibility becomes on of the primary factors keeping them deprived of several opportunities to learn, socialise, mobilise women's voices and speak for themselves.



A taanka under the project



The negative impacts of climate change on agriculture could erode gains made toward gender equality among the rainfed farming communities in low and middle income countries. As in the case of many development and resilience building policies, having women at the centre of climate change adaptation initiative ensures equitable distribution of prospective gains, sustainability of impact and a move towards a gender just society as whole. Inspired by the gender inclusive and gender responsive approach, WSHT project attacked the bane of marginalisation of women that persists because of the water scarcity in the community. Such a gender responsive approach has accounted for the males and females in terms of their roles, responsibilities, access to and control of resources, and opportunities, as well as hidden power structures that govern the relationships in the rural settings.

The project - Water Sanitation and Health in the Thar Desert (WSHT) is an extension of GRAVIS' mission to enable the rural communities in the Thar Desert to lead their life with improved quality, as water scarcity and safety are key issues people face in this region, GRAVIS focuses on making communities water secure through construction of rainwater harvesting structure, ensuring availability of sufficient food and nutrition, and building community resilience to combat drought and drought like situations. Need for specific focus on water, sanitation, hygiene and health demanded targeted interventions in this area. Having recognised this, GRAVIS implemented the WSHT project in 20 villages of Jaisalmer and Jodhpur districts of Western Rajasthan, India. Specific objectives of the project included:

- Ensuring access to safe drinking water to rural population through construction of household level rainwater harvesting (RWH) structures
- Enabling access to water for the community for cattle and other uses through renovating village ponds
- Making clean and safe drinking water available to the families Installation of Bio-sand water Filters (BSFs)
- Mobilising community members for greater impact through setting up Village Development Committees (VDCs) and training
- Developing community capacities through water and sanitation trainings for the community
- Mobilising and sensitising communities on importance of saving water and using it in a sustainable way by organising events of significance such as World water day events

The project envisaged fully functional water tanks to meet water needs of families round the year, and cleaned and renovated percolation wells that provide storage of water up to 150,000 litres and recharged on its own, perennially lasting for several years. In addition to the availability of water, the WSHT project looked at the problem of quality of water too and provided BSWF to targeted populations to ensure availability of clean and safe drinking water to them. Finally, with a view to sustain the impact of the interventions, a range of technical and conceptual trainings were conducted as part of the project that have an empowering impact on the community. With a view to assess the impact of all the interventions that



were part of WSHT project, a study was undertaken with samples drawn from both Jaisalmer and Jodhpur districts. A total number of 100 direct beneficiaries, key informants including community leaders and project staff working on the WSHT project were interviewed to gather and glean the learning from the implementation of the project.

Outreach overview : 2023-24

SL.		Beneficiaries			Indirect Beneficiaries
		Males	Females	Total	
I	Interventions				
1	<i>Taanka</i>	1120	1680	2800	0
2	Bio-sand filter (BSF)	1120	1680	2800	0
II	Trainings				
1	Village development committee Training	324	208	532	
2	Water Sanitation and Health Training	501	635	1136	20000
	Total	825	843	1668	40,000

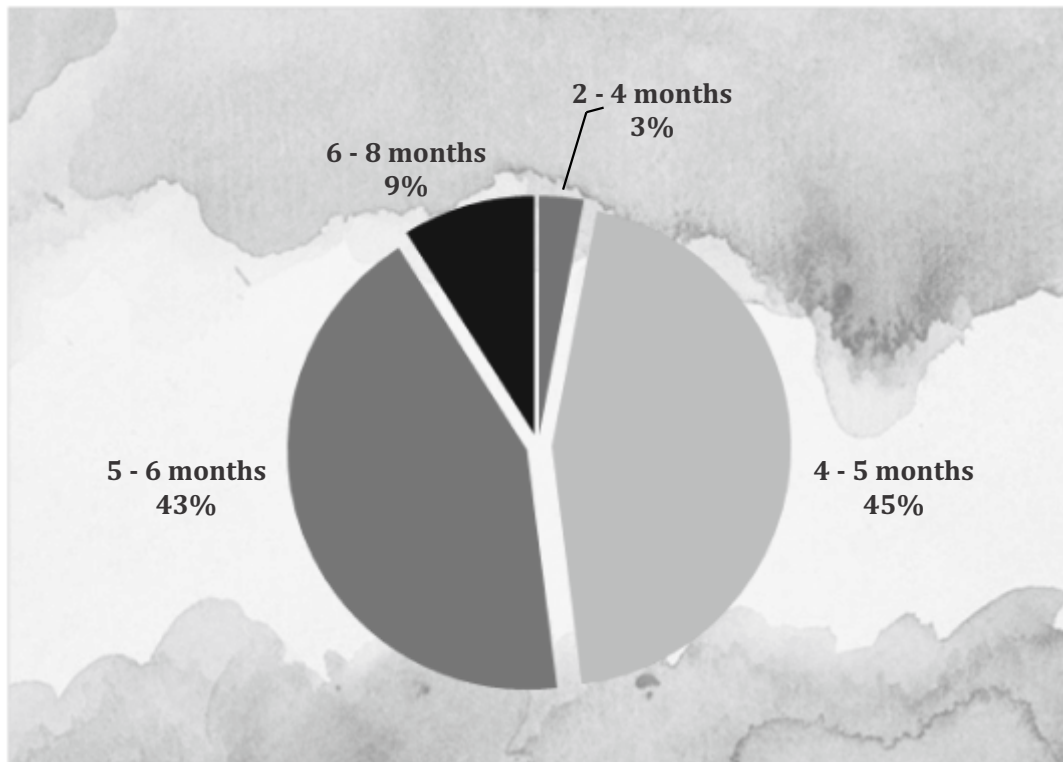
As shown in the table, a total number of 40,000 people were reached out through WSHT project for provision of *taankas*, BSFs, and conducting trainings on several themes of importance and relevance to rural communities.



I Access to water leading to improved health outcomes

Non-availability of sufficient water has a direct correlation with the status of health of the whole family, and eventually the health profile of the given community. Maintaining personal hygiene as well as hygienic conditions at the households becomes a challenge, exposing people to several water borne diseases and chronic illnesses as a result of recurring infections. Malnutrition among children can be an outcome of lack of sanitation facilities and safe drinking water at household level, as level unhygienic living conditions due to lack of sufficient water for cleaning. Menstrual health for women and adolescent girls gets ignored and lack of awareness about the importance of maintaining hygiene further poses a challenge for young girls and women. When water is not available at home, even if it is collected from a safe source, the fact that it has to be transported and stored increases the risk that it is contaminated by the time it is drunk. This in turn increases the risk of infections and disease, which is one of the leading cause of chronic malnutrition and even death among young children. With availability of water enabled through construction of *taankas* at household level, maintaining hygiene became possible for people. During the period of 2023-24, 400 *taankas* were constructed in project villages located in Jaisalmer and Phalodi Districts, making water accessible to 2800 more people through WSHT project. As depicted in the graph, most of the families could use harvested rainwater for 4 to 6 months in a year. Some families reported to have been able to make use of water in *taanka* for upto 8 months and women in those households did not have to go out and spend time and energy carrying water on their heads from far off distances.

Quenching the thirst: Water availability



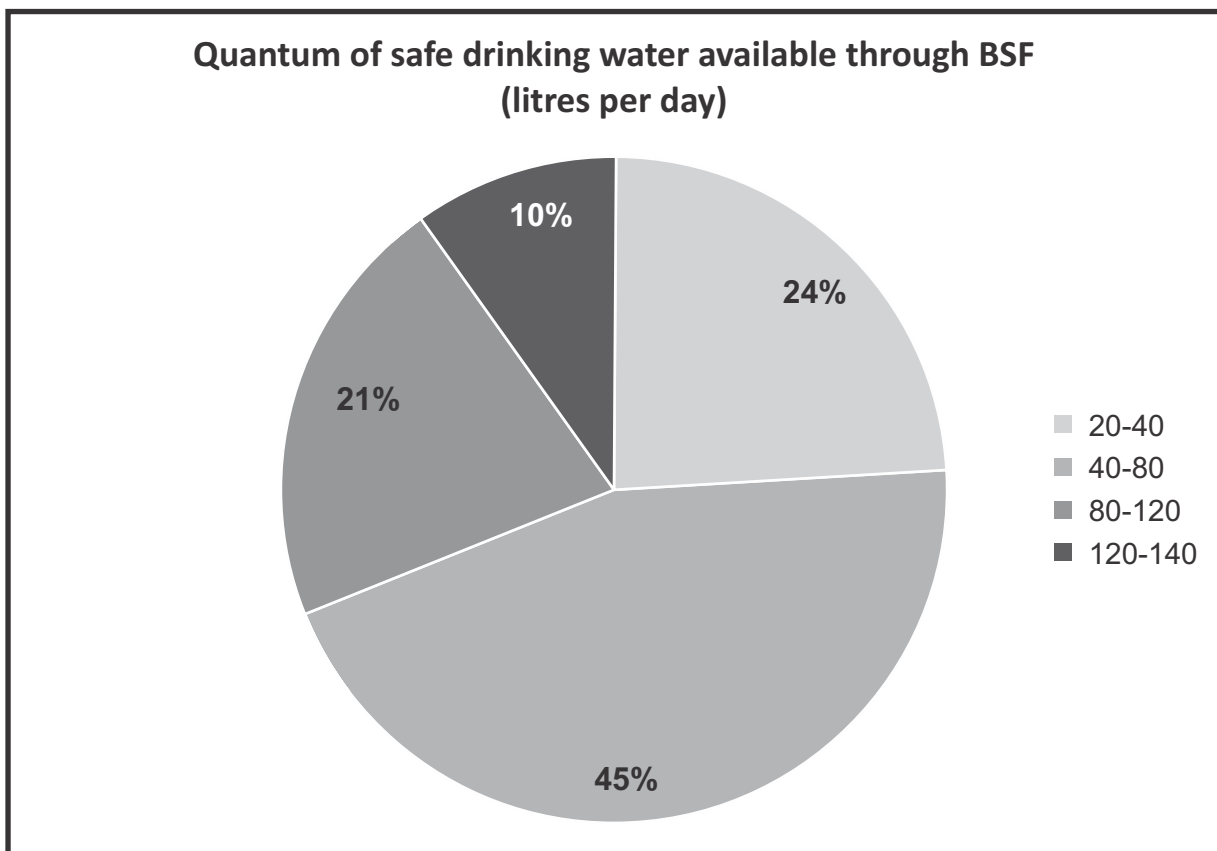
Availability of water (months) through *taanka*



Availability of *taanka* at their house, resolved many health related issues for women. They have not only got relief from problems like physical exhaustion and weakness, other health related problems related to exhaustion, back pain and knee pain, have also significantly improved. Easy availability of water helps them maintain hygiene reducing the occurrence of menstrual infections. Contaminated water used to cause infections and illnesses such as vomiting, diarrhea and fever; women still had to work with these illnesses that used to affect their physical health in long run. 100% *taanka* beneficiaries felt that the water from other sources was not clean enough to drink. While the rainwater that gets accumulated in *taanka* is clean, it may not remain clean over a period of many months. In order to ensure that people in the desert who otherwise do not have access to clean and safe drinking water, GRAVIS, through WSHT project, provided bio sand filters (BSFs) to people.

Efficient use of technology for improved health: safe drinking water

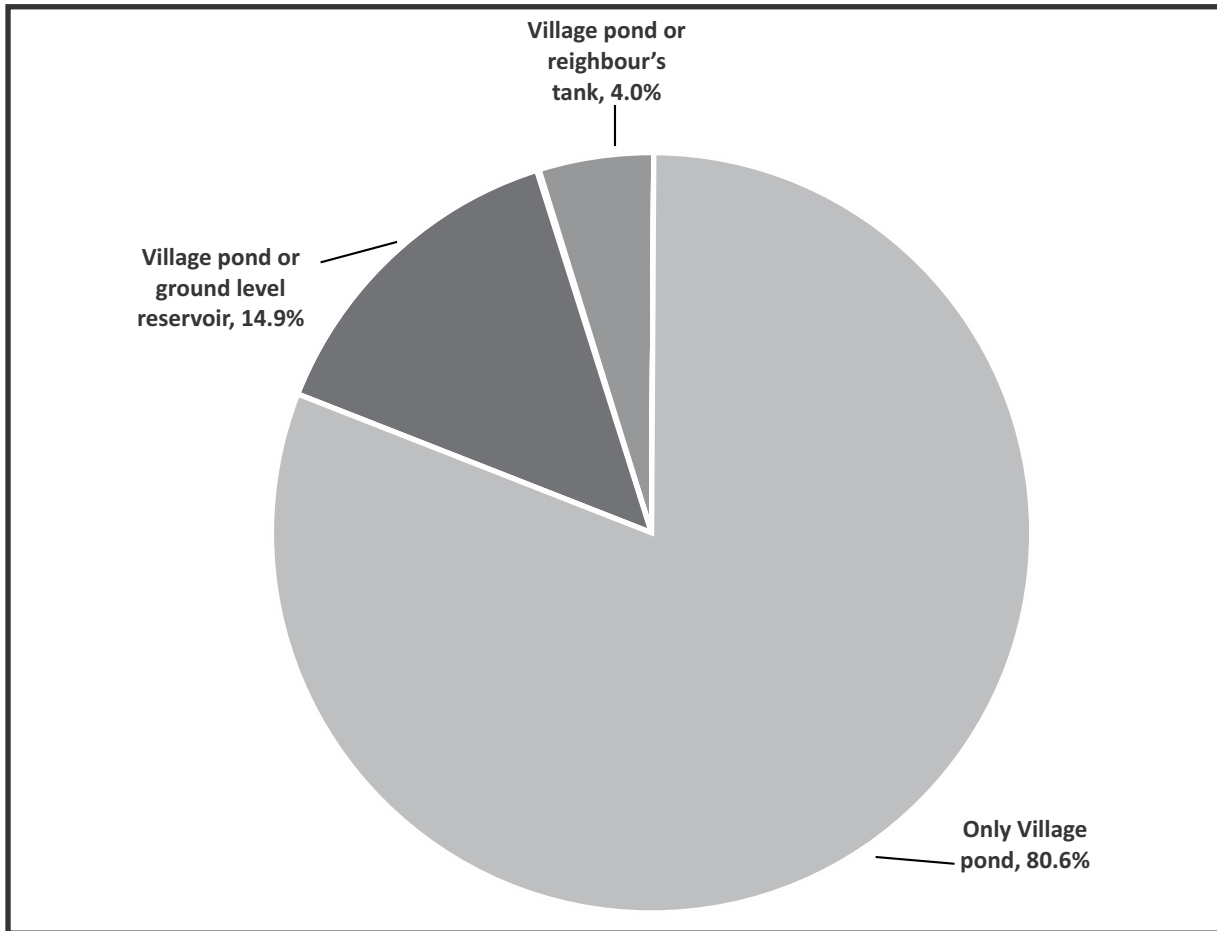
BSF are a simple type of water cleaning technology used in rural houses. BSF are an adaptation of slow sand filters. This water treatment system that removes contaminants from water using a combination of biological and physical processes. BSFs are often used in developing countries and rural households because they are easy to make locally and can last for up to 30 years. The Bio-sand filters are efficient enough to reduce the turbidity of water and eliminate sediments, bacteria, viruses, compounds, cysts, worms, and other



Availability of safe drinking water through BSF



BSFs installed in at household level provided an average of 40 litres of water per day for the rural communities who were otherwise consuming contaminated water. Depending upon the needs of the families as well as the upkeep of the filters, quantity of safe and clean water varied from 20 litres to even 100 litres per day. The majority of the population receiving 40-80 liters per day suggests that the BSF is providing a sufficient amount of safe drinking water to meet basic needs. More than 2800 people got directly benefited from the safe and clean water made available through these BSFs.

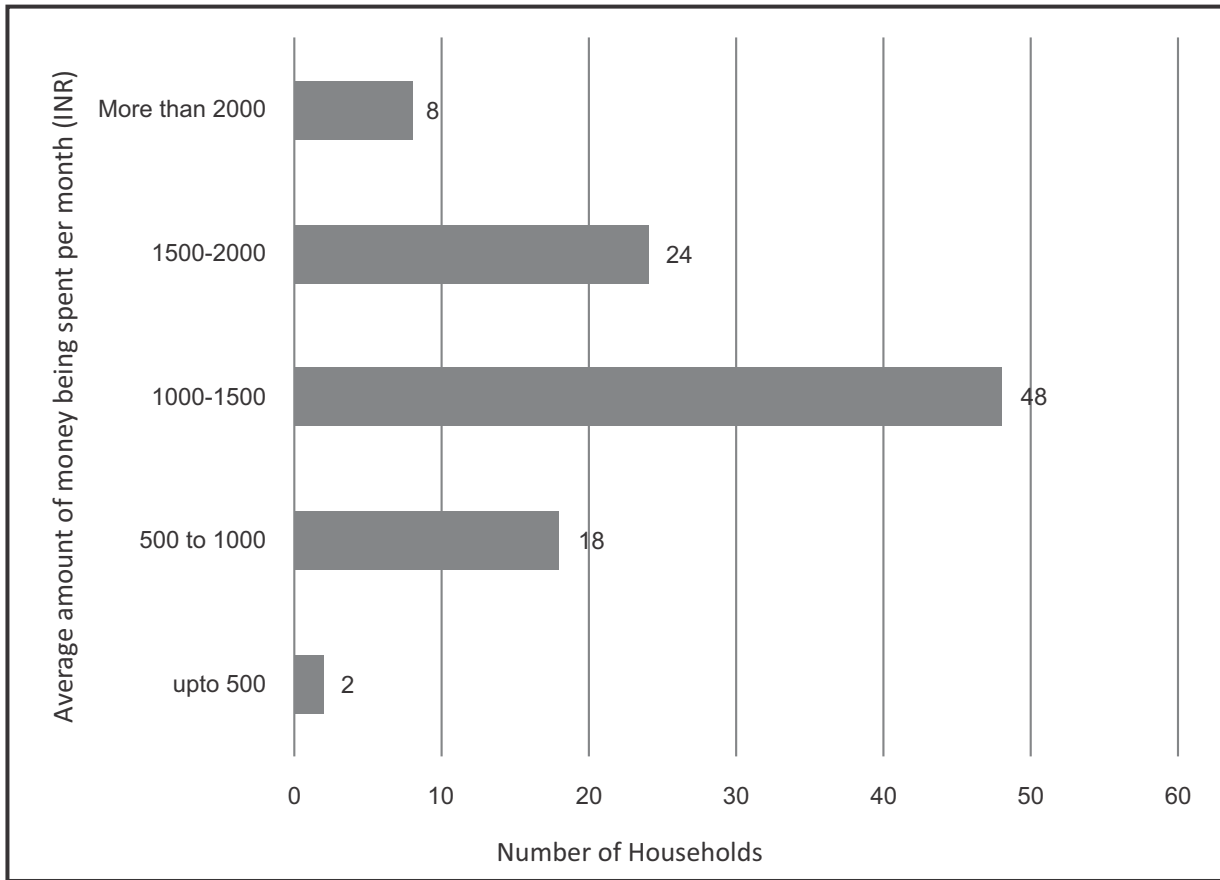


Source of water prior to construction of *taanka*

It was noted that for the families where *taankas* were constructed, village ponds and ground water were the source of water prior to construction of *taankas*. In such cases, not only they had to bring water from far, but were also forced to drink contaminated or saline water. Rainwater stored in *taankas* is not only safe for drinking after necessary filtration, it tastes also better. Most of the families were of the opinion that the water available through *taankas* and filtered with BSFs, made a major contribution to the improved in their health status. Beyond the taste and safety, availability of water at doorstep meant financial gains as well. It was noted that families were spending approximately INR. 500 to 2000 per month on water, which was being saved because of *taankas* at home now. As the instances of family members falling sick due to infections etc., the expenses on medical care as well as the transport costs being borne by the families to access health facilities, reduced substantially. Families were able to spend



Financial savings



Average amount of money being spent on water per month by households prior to construction of *taankas*

It was not only the hassle and time that families had to spend for collection of water, in most cases household ended up spending a significant portion of their incomes on water as they had to buy it from vendors. As shown in graph 4, majority of the households reported that they were spending INR. 1000 to 1500 on an average per month to make sure that there is sufficient water available for every one at home. It was noted that in many cases that the water this bought was also not sufficient to meet all the needs and they had to compromise of several fronts, including on hygiene. As water used to be even more expensive during summer seasons and prolonged dry spells, poor rural communities were forced to shell out larger chunks of money from their incomes, else they had to deprioritise certain needs. In most cases it was women who had to bear its impact.

With availability of water through *taanka*, that get filled up with rainwater, families saved all of this amount and spend it on their other pressing needs. Water available through *taankas* is used for drinking, cooking, bathing, cleaning, etc. In many cases villagers are also using the water for cattle, or to undertake kitchen gardening, which was not possible earlier. With optimum level of hygiene rural families are able to avoid infections and water borne diseases, and are not falling sick often.

Water for Puja's family

Puja lives in Balasar village in Jodhpur district with 8 other family members including her children. The family owns a small piece of land but the yield is never enough to feed the family for a whole year. She and her husband had to work as construction labourers too to make the ends meet. As for the rest of the village, Puja's family was also living under a perennial water crisis. In the absence of a proper large size water tank, they had a small mini tank with a limited capacity. Water in the mini tank used to last only for a day or so.



In the midst of these multiple crises, Puja and her daughter were the most affected. Not only were they expected to make multiple trips to the water source to meet the water related needs of the family, they also faced difficulty in maintaining menstrual hygiene, resulting in frequent infections and illnesses. Fortunately, her family was selected for construction of *taanka*. With a capacity of more than 20,000 litres, this *taanka* harvests rains and get filled up in one good rain.

Previously, I did not have a *taanka*, so I had to fill a small tankali using water tankers. This small tankali could not even hold half of the tanker of water; half of the tanker's water had to be poured into someone else's tank. To provide water for our animals, we had to walk it 4 kilometers away. Although a Ground Level Reservoir (GLR) was constructed, water was only available occasionally. For household use, we often had to carry water on our heads from a source about 1.5 kilometers away, as there were no nearby water sources. We required approximately 4 tankers each month, costing us INR. 2000, with some of this water going to other people's *taankas*. We had to walk it 4 kilometers away to provide water for our animals.

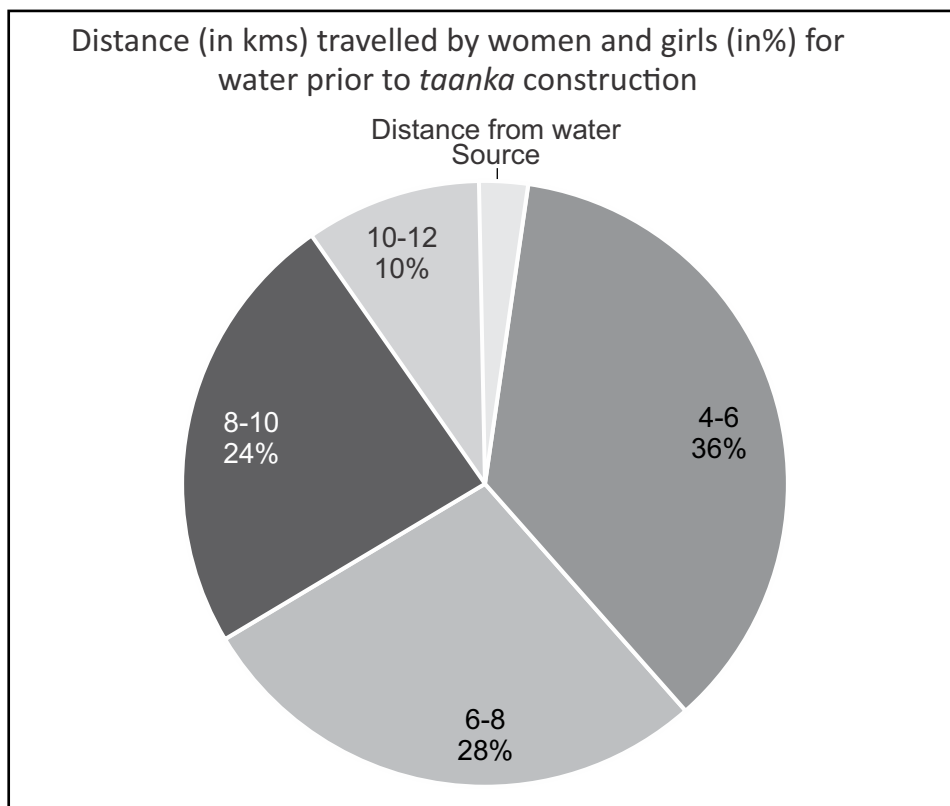
Since, the construction of the *taanka*, our lives have greatly improved. We can now store water in the *taanka*, which has provided relief for both our livestock and family. Because of the *taanka*, we can go to work without worrying about water at home, and cleanliness and hygiene are maintained. I see significant improvement in the health conditions of all the family members, and this was possible only because we had sufficient water for sanitation and maintaining hygiene.

I am deeply thankful to GRAVIS for providing us with this *taanka*. Now, I no longer have to carry water on my head, and my health has improved. I feel much energised to do work and socialise with other women in the vicinity. Along with *taanka*, Additionally, thanks to the bio-sand filter, I have access to clean drinking water, which has got us liberation from constant stomach problems. *Taanka* and bio-sand filter together have truly transformed our lives, and I am extremely grateful for the support that made this possible



II Women and girls : From being worst hit to taking charge

Scarcity of water, especially in rural remote areas that witness recurrent droughts, impacts the lives of women and girls in several way. Unreasonably disproportionate time that they spend on water fetching on a regular basis is just one of the disturbing aspect of their hardships and deprivation on account. For women, the opportunity costs of collecting water are high, with far reaching effects. It considerably shortens the time they have available to spend with their families, on child care, other household tasks, or even in leisure activities. In case of young girls, water collection can take time away from their education and sometimes even prevent their attending school altogether.



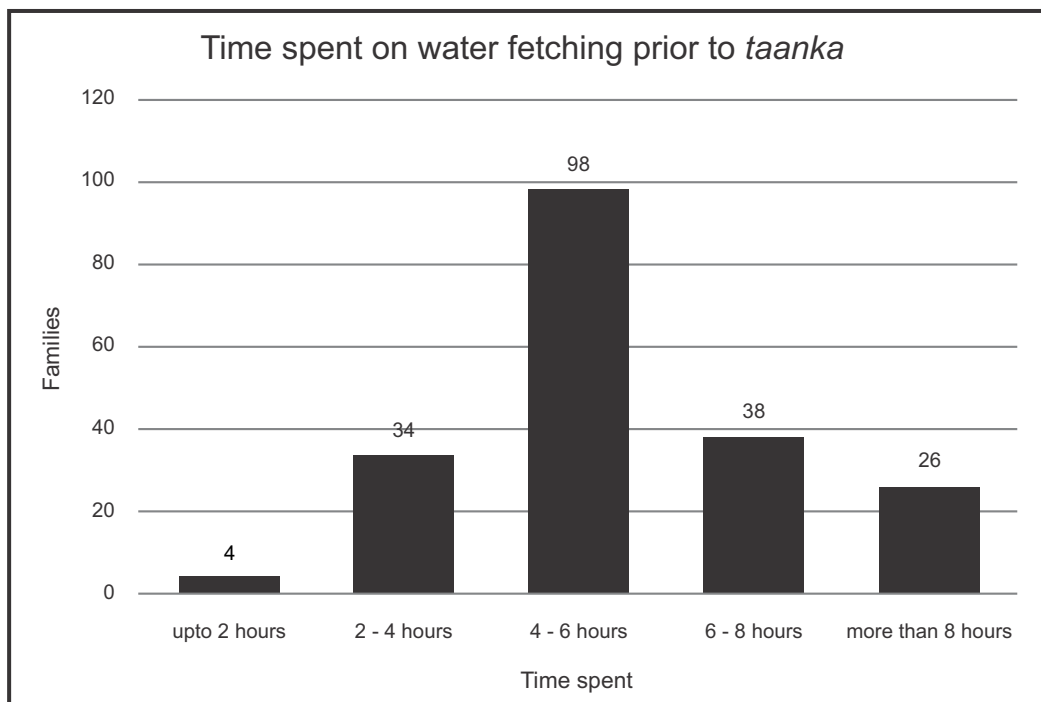
Distance travelled by women and girls prior to construction of *taankas*

As shown in the graph #, majority of the women and girls (65%) walked more than 4 kilometers for water before the construction of *taankas*. This indicates a significant burden on them for daily water collection. 24% of women and girls walked as long as 8 and 10 kilometers everyday, while 9% had to travel more than 10 kilometers. These distances are substantial and very time-consuming. The long distances traveled for water consumed significant time and energy, impacting daily activities, especially for women and girls who anyway carry multiple responsibilities. As one may imagine, water fetching is a major health risk for women in the Thar Desert. Walking long distances, particularly in rural areas, can expose individuals to health risks such as accidents, exhaustion, and exposure to harmful elements. Additionally, the time spent collecting water can limit opportunities for income generation or other activities, contributing to economic hardships.



For aboutfamilies *taankas* provided a source of water next to the houses, reducing the need for women and girls to travel long distances. This resulted in freeing up time and energy for other activities, improving quality of life. Reduced exposure to excessive heat and health risks especially for women and girls has a long lasting impact generally in the health situation in the families. Women are not only able to maintain menstrual hygiene, they have gained ability to influence social hygiene practices within the families, especially among children, which may potentially result in creation of a whole generation that is aware and sensitised about personal hygiene.

Opening the doors to opportunities



Average time spent by families on water fetching prior to construction of *taankas*

It was noted that a large majority of women were spending about 2 hours per day on fetching water before the construction of *taankas*. This indicates a substantial time burden associated with water collection. The most common time spent was between 4 and 6 hours. While there were a few families who reported to have been spending upto 4 hours on water fetching, there were very few in numbers. The significant time spent on water fetching disrupted daily routines and limited the opportunities for engaging in other activities for women. Women were not able to spend their time on any kind of productive activity and hence remained financially dependent on others. The physical demands of water collection also had adverse effects on health and well-being for women and children who are often responsible for this task.

With the construction of *taankas*, the time required for water collections has become negligibly low, significantly reducing the time required for water collection. Women has much more time than before and this freed up time is being used for other activities that significantly improve the overall quality of life. By



reducing the time spent on water collection, women are also able to access several opportunities to engage in economic activities. Women and girls feel emancipated and feel free to do engage in socially, intellectually and financially productive endeavours. As women among the beneficiary families saved a significant amount of time, they were able to diversify their daily activities and explore several new avenues for personal growth, learning, spending time with family and for socialising. It was reported during the present study that about .80% women started socialising with their peers and and other community members, 75% of them mentioned that they are able to take part in discussions at community level about the issue that matter to the whole community, which was not the case in the past as they were always either occupied with water collection, or had no strength left to participate in any of the community events and/or discussions. As their interaction with the community increased, their confidence also enhanced and they found themselves in a position to make constructive contributions to the decisions within the households and in the village.

Many women (56%) saw an opportunity to rekindle their interests in several vocations. They utilised the additional time they got after being freed from water fetching for making some extra money by undertaking small vocations such as tailoring and embroidery, making baskets with straws, and running small grocery shops, etc. As women started contributing to family income, their sense of self worth and self esteem got built up too.

Improved health

An affable milieu created with the availability of sufficient water had a positive impact on the mental and physical health of women, girls and the family members of the beneficiaries. Women reported to be in a much positive state of mental health. In terms of physical health, 76% reported that they do not have back pains like earlier. There was also substantial reduction in headaches among women and girls. As in summer seasons, women used to walk long distances under the scorching heat, they headaches were very common. An overall improvement in their health status which is attributable to availability of water for maintaining menstrual hygiene.



A filter in use



While *taanka* was especially useful for girls, the outcomes for families in terms of availability of sufficient water year round, even in dry season, was of immense value. More than 85% families reported availability of water in *taanka* which was sufficient for more 4 to 8 months in a year, 47% being able to use water for upto 8 months or so. Recently constructed *taankas* that were constructed after the rainy season, received only minimal rainwater water and could hold water to last only a couple of months. It was expected those *taankas* also to get filled up after proper rains, ensuring availability of water more almost the entire year. With the water availability within their premises, families could didn't have to worry about the needs the likes of drinking water, cooking, bathing, cleaning, and washing clothes especially during the summers. About 85% of them reported that maintaining personal hygiene was a challenge prior to construction of *taanka*. For women and young girls *taanka* was also an enable for maintaining menstrual hygiene. As rural farming communities are also cattle rearing communities, *taankas* ensured that there was sufficient water for cattle too. All families reported 30-40% in milk production since the construction of *taankas*, and a significant number suggested that getting milk and milk products during summer was always a challenge that was resolved by availability of water in *taankas*. Sufficiently available milk and milk products had direct impact on health and nutrition status of communities in otherwise water starved and food insecure communities. Cumulative impact of all these factors led to an improvement in the health profile of women and girls. Reduction in health expenses for poor farming families was another crucial indicator of improved health and a contributor to improved financial status, as the families were spending much less money on health related exigencies and on travel to health facilities.

A Tale of Water and Transformation



In the heart of Jodhpur district, nestled amidst the arid landscape, lay the village of Samlani Nagar. Here, Patasi Devi and her family, like many others, faced the daily struggle of water scarcity. The nearest reliable source was a neighbor's *taanka*, and even that was often insufficient. The villagers had to rely on water tankers from Motai village, a journey of five kilometers, at a steep cost of INR. 700 per tanker (INR. 1000 in



the summer). This burden, both financial and physical, weighed heavily on the community. Patasi Devi's days were a relentless cycle of water collection. She would often have to forego her own needs to ensure her children had enough to drink and her livestock had water. The constant struggle affected their health, education, and overall quality of life.

Then, a glimmer of hope arrived in the form of a newly constructed *taanka*. This rainwater harvesting structure promised to alleviate their water woes. As the *taanka* filled with precious rainwater, the villagers watched with anticipation.

The impact was immediate. The burden of water collection was lifted. Children could attend school without fear of missing classes, and their health improved. Women could spend more time on other tasks, and the livestock had a consistent source of water. The financial strain of buying water tankers was eased, as the villagers now only needed to fill 3 tankers per month.

Patasi Devi's life is transformed. She can care for her family with greater ease, ensuring they have access to clean water for drinking, bathing, and cooking. The *taanka* has become a symbol of hope and resilience for the entire community. It is as a testament to the power of infrastructure and the positive impact it can have on the lives of those who have been marginalized.

III Developing community capacities and leadership

Unwavering belief in the strength of the community and community based institutions has been at the core of the strategies for GRAVIS. The integrated development approach adopted by GRAVIS keeps community at the centre of all interventions. When decisions are taken by the community itself for improvement in the quality of life of people, there is not only a greater degree of commitment and ownership, solutions are much more acceptable and sustainable. Along with especially empowering women and encouraging them to play leadership roles, WSHT project invested in building local leadership. A combination of enhanced capacities of the community and motivated and engaged local leadership has resulted in a move towards creation of empowered and resilient communities.

Building capacities and awareness

Lack of awareness and capacities regarding maintaining hygiene is one of the challenges that prevents behavioural change towards healthy and hygienic practices that lead to improved health status. Scarcity of water has manifested in the community ignoring or not prioritising their personal and household level hygiene that keeps getting reinforced with the looming water crisis. Recognition of this problem led to inclusion of awareness and capacity building interventions in the WSHT project, and as in the case of other projects, GRAVIS has included a specific component of community awareness and building capacities of rural population on maintaining personal hygiene, importance of using clean water for drinking, and also keeping the rainwater harvesting structures clean and well maintained for optimum benefit.

Water for empowerment

In the heart of Thar Desert, amidst the arid landscape, lives Kamala Devi, a woman from a socially backward community. Her small family resided in a hamlet, a remote settlement, where water was a precious commodity. Each day, Kamala faced the arduous task of fetching water, either by buying expensive tankers at a rate of INR. 1000 to 1500 depending on the season or by making long, tiring trips to the nearest pond.

The burden was immense. The constant struggle to secure water for her family's needs took a toll on her physical and mental health.

Her daughters, too, suffered, their education disrupted by the time-consuming chores. Kamala's dream was to provide a better life for her family, but the lack of water seemed to be an insurmountable obstacle.





One day, a ray of hope appeared. Kamala heard about the WSHT project and decided to approach the local village development committees. The VDCs, recognizing her plight, recommended the construction of a *taanka* near her home. As the *taanka* took shape, Kamala's spirits lifted. She could envision a future where her family no longer had to worry about water scarcity. When the *taanka* was finally completed, it was a moment of immense joy for Kamala and her community.

The impact was profound. The *taanka* provided a reliable source of water, freeing Kamala from the daily struggle of water collection. The financial burden of buying water tankers was lifted, allowing her to focus on other priorities. Her daughters could now attend school regularly, their education no longer interrupted by water-related chores. Empowered by the water security provided through *taanka*, Kamala began to explore new opportunities. She used her newfound free time to rear livestock and engage in farming. The *taanka* had not only improved her family's quality of life but had also empowered her to take control of her future.

Kamala's story is a testament to the power of community-led initiatives. The VDCs, by recognizing her needs and providing the necessary support, played a crucial role in transforming her life. Her journey serves as an inspiration to other women facing similar challenges, demonstrating that with determination and support, even the most daunting obstacles can be overcome.

Cleanliness of surroundings as well as personal hygiene are most critical factors that determine the status of human health. With provision of the water, WSHT project ensured that the local communities are following healthy and hygienic practices in their daily lives. A series of trainings and orientation programmes were organised for local community and community leaders on various relevant issues pertaining to health and hygiene in the rural context of the Desert where water availability is limited despite provision of rainwater harvesting structures. GRAVIS organised ... trainings covering about 3,500 people directly in order to raise awareness among the community on issues such as - keeping the surrounding of their houses clean, keeping the rainwater harvesting structures such as *taanka* and the catchment area clean, washing hands properly before eating and preparing food, and keeping the drinking water and food covered at all times.

Through these trainings and orientation sessions, information was shared about the benefits of purifying water before drinking and how this helps prevention of diseases caused by drinking impure water and that drinking only filtered water can avoid diseases. These trainings were also used to orient the community, especially the beneficiaries about the upkeep and maintenance of *taankas* and biosand filters.

Strengthening community based institutions

Most significant contribution was made in the form of strengthening the local institutions and promoting local leadership through formation of village development committee (VDCs) and equipping with the

requisite skills and expertise to function effectively towards the wellbeing of the entire committees. Village VDCs are voluntary associations of village people for local administration. VDCs have representation from all the groups in a village and represent the most localised form of democracy. These VDCs take major decisions regarding the development of the whole village and villagers solve local problems through the help of VDCs. After the formation of VDCs in the initial phase of WSHT project, trainings were organised for the members of these VDCs on functioning of the group, their roles and responsibilities and the factors that must be considered while taking decisions having implications for the overall development of the community. During the total 40 trainings conducted for the 532 members of VDCs, specific inputs were provided regarding the process and considerations to be considered while selecting beneficiaries for the project, and situations and people who should be prioritised while identifying the most needy people for the benefits. Considering that the resources are limited and everyone in the community or in the village cannot be provided with the benefits, the role of VDCs becomes all the more important in ensuring that not only those the benefits that need them the most, but among them too those in dire need are prioritised.



Training on water and sanitation

Through the series of trainings conducted as part of WSHT project, VDC members not only started following a standardised process of selection of beneficiaries that included reviewing the personal situations and social and financial status, but also became proactively engaged in local issues. Members, that included women as well, were able to anchor the implementation of the project activities such as construction of *taankas* and distribution of bio-sand filters. After an intense engagement with the members of VDCs, these groups were able to function independently in the spirit of volunteerism, and manage the administration of activities at local level with representation of all sections of the village. These VDCs also engaged in discussions on common plans for village development, along with the planning and monitoring of activities, including selection of families, regular monitoring, redressal of any grievances. VDCs formed and strengthened through WSHT project, took upon themselves the responsibility of ensuring that the benefits are distributed equitably.



Strengthening of community based institutions not only encourages local leadership but is also an effective measure to ensure sustenance of impact of the interventions made through the project. Robust community based structures go a long way in empowering the communities and keeping them engaged towards a common vision of integrated community development.

Interactions with the community members indicated that all those who had attended the trainings were also following all the practices discussed during the training sessions and were integrating the learnings from the trainings in their daily routine. They were keeping the catchment area of taanka clean, and cleaning the water filters every month. It was found that most of the villagers had understood the importance of using stored and filtered rainwater. They were also ensuring that the water is not wasted and whenever possible were reusing the water for different purposes. All those interacted with for the study, were of the view that drinking the filtered water can save them from falling sick and help us lead a healthier life free from disease. It was also observed that community members were washing their hands properly with soap, and also asking children to follow this practice. They were also following other basic hygiene routine such as keeping their nails trimmed. Most of them felt that attending the trainings has helped them learn a new way of life and they were convinced that learnings from the trainings are life lessons that they will keep following throughout their lives.

IV Enabling climate change adaptation

As the world witnesses the 'triple planetary crises', life for rural remote communities in drought affected regions becomes even more harder. Scant rains and failed monsoons were anyway insurmountable challenges, shifting and unpredictable rains in the wake of climate change, jeopardises their primary vocations - agriculture and animal husbandry. Food and nutrition related insecurities become even more severe and health need take a back seat. Rainwater harvesting for meeting the basic water needs for human and cattle is one of the most efficient and sustainable technique that empowers rural communities to take charge of their wellbeing. Over the years, GRAVIS, through its rainwater harvesting initiatives at community and household levels, has been supporting rural communities to mitigate the impact of climate change induced water scarcities.



A new *taanka*

Rainwater harvesting : a robust tool to fight climate change

Climate change has affected the Thar desert in one of the most ironic ways. While the rainfall seems to be more than unusual for the desert, it has become extremely erratic and unpredictable. In such situation storing water for long term use is the most sustainable and pragmatic way to combat climate change and its impact on the rural lives. Construction of *taankas* that helped people save water and use it for various needs, and built their resilience to climate change. As communities had sufficient water for personal use, drinking as well as for cattle, over a period of time, a significant improved could be seen in their health profile as well. In addition to construction of *taankas* for 400 households that facilitated direct benefits to 2800 people, promotion of rainwater harvesting as a strategy, generating awareness among the local communities about climate resilient and sustainable water use techniques, and building capacities of people to maintain such rainwater harvesting structures, all have contributed towards building much needed climate resilience among communities.

Improved health and community institutions

Ability of the communities to combat drought as well as climate change has also increased because of improvement in their financial status. Communities have gather confidence and have found collective strength through the community based groups mobilised by WSHT project.



V Making the most from WSHT experience: The road ahead

Challenging climatic conditions and lack of resources keep water starved communities in the Thar Desert in constant negotiation for their survival. Implementation of interventions aimed at creating healthier communities through provision of adequate, sufficient and safe water has paved the way for a secure future for them. Not only are the communities living in much better hygienic conditions, they are able to get financial gains too. Overall impact of the project has exceeded the expectations and there are a number of ways to further expand its positive outcomes.

Enhancing the outreach and of programs focusing on water access and quality

Human health fundamentally depends on the existence of two basic essentials: water, which is of the utmost quantity and quality, and food, which is safe, nutritious, and sufficient to sustain bodily health. WSHT project interventions, including the rainwater harvesting and provision of BSF for enabling access to safe drinking water, have had a positive impact on the health status of the families who have got these benefits. However, a large portion of the population has yet to receive any such support. Comprehensive interventions are sorely needed in desert communities, but the resources to implement them are limited. Fortunately, GRAVIS has a long-standing history in these communities and is well-placed to tackle this problem. GRAVIS must rise to the occasion and expand its outreach to cover a large number of families in the drought-affected regions of the Desert. Considering the needs of the communities in the region and utility of the strategy being adopted in WSHT project, GRAVIS must make efforts to reach out to a larger number of populations and communities across the region and enhance its outreach.

Need for such support is much greater than the available resources and GRAVIS must use its experience of working with the desert community, and document and disseminate them with a larger stakeholder base. GRAVIS must also strengthen advocacy with the state and explore avenues for institutionalisation of elements of its strategies. Refurbishment of government infrastructure and ensuring its expansion to envelop rural and far off communities may lend a greater scale to all interventions

Documentation and dissemination

Outreach and advocacy for using rainwater harvesting for advancing the goals of ensuring water, sanitation and health for the most marginalised, may be strengthened with enhanced investment in concurrent documentation and dissemination of the experiences, achievements, and developing prototypes for other organisations for implementation of similar programmes in the drought affected region of the Thar Desert. Not only such documentation will lead to improved learning but will also facilitate knowledge sharing among those who can make the best use of it in other geographies too. By highlighting the project impact, and sharing knowledge, GRAVIS may impact not only the actions of the civil society organisations but government agencies too. Since the project encourages most sustainable, local and low cost solutions, generation of evidence about the outcomes and impact may influence the decision making by the government agencies too.



Intensification of SBCC

In the Thar Desert, scarcity of water along with behavioural issues concerning hygiene and sanitation are the most critical impediments to realising the vision that guides health goals for the rural poor. Rural communities in the desert are traditionally judicious when it comes to water use. However, water shortage prevents them from maintaining hygiene and lack of sanitation facilities, and gradually turns into social behaviour that is difficult to change. Social and Behaviour Change Communication (SBCC) uses communication strategies that are based on behaviour science to positively influence knowledge, attitudes and social norms among individuals, institutions and communities. Use of SBCC is extremely important in the context of rural communities of Thar Desert, especially given the unfavourable circumstances that they have to deal with when it comes to availability and use of water.

While GRAVIS has been engaged in sensitising the rural communities on the importance maintaining hygiene and SBCC is an innovative approach involving a range of communication strategies in a structured way for not only keeping the communities engaged but also allowing to observe, manage and measure the behavioural change among individual that eventually lead to change in practices, notions, and perspective. SBCC is a powerful tool to achieve the desired outcomes for sanitation and hygiene.

Linking with government initiatives

Considering the vast range of sanitation and health influencing factors, increasing expectations from the health systems, and general challenges such as insufficient resources, sanitation and health support and services needed by people cannot be provided completely by the NGOs alone. A deliberate and concerted effort to adopt an approach that is reflective of collaboration and linkages with the local and state governments is essential to expand the scope of the impact of GRAVIS' work in this area. Such linkage may take several forms. Support to and augmentation of schemes and programmes of the state government may be just a starting point. Building capacities of government functionaries, especially those vested with the responsibility of delivery of services to the community at the local level.

Collaboration with government initiatives not only maximises the outreach and impact of the initiatives by an organisation, it also value adds to the government interventions and makes it more effective. Such linkages and collaborations are also steps towards institutionalisation of the support being extended through NGOs' interventions.

Reaching the most vulnerable

One of the unique aspects of WSHT project is its ability to reach out to the remotest regions in the country that are deprived of quality living conditions. Insurmountable challenges that they face are a result of an intersection of climatic conditions, poverty and lack of adequate support from any government agency or department because of their remote locations. However, within these communities, there are sections that are extremely vulnerable because of their social status or physical conditions. The provision of rainwater harvesting structures at the household level is definitely a boon for women and girls as they get liberated



from extreme physical work. Benefits of other interventions such as BSF, also reach women, girls and older people. However, an enhanced focus on the well-being of women and older people may lead to further amelioration of the impact of interventions. This may be achieved through mobilisation and strengthening of the specific community groups and helping them evolve as leaders

The impact of community-based institutions such as VDCs may be enhanced by positively involving women and youth. For example, intergenerational groups can be formed with women, girls, and the young to be trained on topics concerning the empowerment of women and the youth in taking on leadership role in health, hygiene, and sanitation. Sharing knowledge relating to water conservation, good hygiene practices, and healthcare will help develop a community of informed practitioners. Encouraging women to lead this endeavor may well be an attempt to balance gender inequality in society and create resource distribution that is fair, thus leading towards a healthier and more just society.

When the most marginalised, excluded and powerless groups in society get mobilised and start getting the dividend of interventions at the community level, the whole of society steadily moves towards well-being and prosperity. With a specific focus on the vulnerabilities, WSHT project interventions may potentially result in long lasting impact on the social dynamics leading to the creation of an equitable society.

Diversification of support to include food security and nutrition

In addition to the availability and quality of water, an adequate quantity of nutritious food is directly related to people's health and nutritious status. Rural communities reel under severe water and food insecurities. Frequent crop failures pushes them to food insecurities. Widespread malnutrition among children is a result of their inability to access food with higher nutritional values. Diversification of food baskets is a challenge in such circumstances. In order to address this situation, a few innovations may be introduced. As part of its drought mitigation programme, GRAVIS has been supporting rural communities by setting up horticulture units next to their houses and these horticulture units, over a short period of time, become a crucial source of native fruits and vegetables. GRAVIS may augment the initiatives on water and sanitation for improved health conditions for rural communities by adding an element of nutrition. Horticulture units have the potential to provide improved nutrition to rural communities at a low cost and in a sustainable manner. Another way could be promotion of rainwater harvesting for farming by construction of farm bunds that are time tested and most eco-friendly techniques for enhancing farm yields and making sufficient food available for family. Access to sufficient food, along with the necessary nutrients and safe drinking water, will lead rural households in the desert towards healthier lives in a sustainable manner, and aid in them taking control of their own destinies.

Further enhancing the impact

WSHT project has been able to capacitate the rural communities of the Thar Desert to be able to maintain hygiene by provision of sufficient water. Access to safe drinking water has also freed them from the cycle of disease and recurrent illnesses. Impact of these interventions are already visible on the health status of



women and the rest of the family members, especially children. Impact of the project interventions may be further enhanced by introducing a more rigorous approach. For instance capacity building and sensitisation sessions may be intensified both in terms of length and periodicity. Local community leaders can be identified to carry on the message among those who might not have attended and ensure that people are incorporating the learnings from the trainings in their daily practice. GRAVIS may also consider working on reducing the distance that the community members need to cover to attend any of the meetings or trainings. While this may not be a significant problem for the young males, women and older adults do find it difficult to cover distances more than a kilometre, because of the time taken, social restrictions for women. Not only the participation of local community can be ensured by this adjustment, older people will also feel motivated if the trainings are organised in vicinity. These trainings may also be complemented with regular follow up sessions and refreshers.

Water is a life and millions of people who do not have access to sufficient potable water throughout the year face multiple challenges are exposed to severe health crises. Provision of safe drinking water protects the rural communities from recurrent diseases. Water harvested in taanka serves several purposes for families, and consumption of purified water made available through BSFs protects people from infections and eventually disease. Continued consumption of safe drinking water and maintenance of good hygiene, over a period of time has resulted in improved health outcomes. Most critical aspect of the project outcome is the fact that community itself is able to take charge of their situation, which is a result of structured discussions and interactions with the community members and leaders on the importance of maintaining the association between health and hygiene, and empowered community institutions that are proactively engaging with the issue in questions. The fact that all this have been made possible even in the wake of climate change and ensuing altered climate context, provides for a lesson that the other geographies with similar social, economic and climatic challenges may learn from.



Acronyms

BSF	Bio Sand Filters
GRAVIS	Gramin Vikas Vigyan samiti
LMIC	Low and middle income countries
PHC	Public Health Centre
SBCC	Social and Behavioural Change Communication
VDC	Village Development Committees
WSHT	Water Sanitation and Health in Thar
WWD	World Water Day



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GRAVIS is a leading Non-Governmental Organization working in rural India in the States of Rajasthan, Uttarakhand, and the Bundelkhand region of Uttar Pradesh. Since its inception in 1983. GRAVIS has worked in over 2,000 villages reaching a population of over 2 million and has established over 4,000 Community Based Organizations (CBOs). GRAVIS believes in participatory community development that blends traditional knowledge and modern sciences and promotes equality.

GRAVIS is registered under Rajasthan Societies Registration Act and under section 80 (G) and 12A of IT Act, 1961 of Government of India with tax exemption status.