

IMPACTS

Standard, global impact assessment indicators for WATSAN programmes include distance travelled and time saved in fetching water; change in water availability (volume) and quality; use frequency of the constructed sanitation units; inculcation of/ or change in sanitary habits of the population; change in health related expenses and increase of other productive activities in the village as a direct result of this programme. An impact



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study of the first phase by an external agency in 2009⁴ showed positive results in all aspects of the programme. Although water quality is not as serious an issue in the mountains as it is in the plains, chlorination systems are maintained well by the majority of Management Societies. Water availability had increased by 55 litres per day per family, women barely had to walk for water as the pipelines had reached the villages, time spent in collection went down from 5 hours a day to less than an hour, and some of that hour was actually spent socialising at the taps. Most women stated that the time and energy saved in fetching water gave them the chance to spend more time with their children and to cultivate a vegetable garden (entirely a woman's task) and gave them an annual income of about Rs 1,800. Annual expenditure of families on healthcare was down by almost 80%; the use of toilets and hand washing was up to almost 100 per cent.

A CASE STUDY

The people of Kheda Talla, a small, but scattered village, located in Jaunpur block of Tehri Garhwal district in Uttarakhand, had never really believed that they would

ever have clean, drinking quality water available at their doorsteps. Amidst applause, overcast skies and accompanied by a persistent drizzle, a ribbon was cut at a simple ceremony to inaugurate the water supply scheme that they firmly believe would change the face of their village by ensuring clean drinking water for all 43 households. "Ever since I remember the women have been walking 4-5 hours daily across several kilometres to fetch water for drinking and household use," says Maya Devi, an octogenarian, flashing a toothless grin. "My daughter is always late for her classes, she has to help me fetch water. She often suffers from stomach cramps and diarrhoea" says Kamini, yet another villager, who has turned up dressed in her best for the ceremony.

In November 2006 Kheda Talla was selected as one of the 48 villages under Phase 2 of the HMP, for initiating a drinking water scheme and the construction of household sanitation units. First the village underwent a one-year participatory Planning Phase for the formation and training of the representative Management Society (MS), which was to be responsible for planning, implementing and managing the scheme. The Planning Phase confirmed the demand and the community's willingness to contribute towards implementation of activities, besides bearing the entire expense of Operation and Maintenance (O&M) of assets created through the project. The Implementation Phase focused on setting up two gravity based water supply schemes and individual items including 36 latrines, 41 soak pits, 41 vermi-compost pits and 43 garbage pits. A supply main brings water from the source, located 7.5 kilometers away amidst dense forests, and stores it within a clear water reservoir. At the reservoir, the water is filtered through a slow sand filter and then supplied to individuals through distribution supply lines



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that measure almost 6 kilometers in length. Nine months later, results indicated that the scheme was a boon for the village. Besides saving up to 80 per cent of their time spent earlier on collecting water, the project ensured access to disinfected, clear water within a stone's throw from their residences. Water availability has increased from 8.69 to 275 litres per capita per day for Kheda *tok* and 119 lpcd for Sirwa *tok*, the two hamlets that constitute Kheda Talla. Sanitation interventions carried out led to 100 per cent toilet coverage (earlier about 25 per cent). The village wears a clean look, thanks to raised

awareness and the construction of latrines, garbage pits, soak pits and vermin-compost pits. The occurrence of diarrhoea, the most common water borne disease, has reduced significantly. Health camps held here have had their impact, with women, as well as men acknowledging the importance of safe pregnancy and childbirth. They are now willing to seek medical intervention, an achievement in itself. 100% immunization has been achieved and the health of both, mother and child has improved, thereby reducing medical expenses significantly.

¹ DAS India, a Lucknow based agency with expertise in drinking water scheme and sanitation unit engineering.
² Memorandum of understanding between Government of Uttarakhand and Sir Ratan Tata Trust, 2004, pp 5.
³ ACWADAM – Advanced Centre for Water Resource Development and Management, Pune. <http://www.acwadam.org/>
⁴ PRIMOVE, Pune, 2010, Impact Assessment of Himmothan Pariyojana Phase – I for Sir Ratan Tata Trust, pp 108.



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A Brief Water Supply and Sanitation (WATSAN) initiative under the Himmothan Pariyojana



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Although Uttarakhand, blessed with mighty glaciers, perennial rivers and excellent rainfall, appears to be a water rich state, the unique topography of the region translates into immediate runoff of all waters downhill, and straight out of the state. Water flows are rapid, and almost impossible to restrain. The lack of flat land implies the lack of small storages, which in turn implies local water scarcity. Big dams have, and continue to be constructed; submerging valley after fertile valley, but the benefits of these humongous storages do not even reach their nearest villages. Ironically many villages around Tehri dam have neither water, sanitation, nor proper electricity. While Uttarakhand serves the water demands of other states of northern India, villages and towns in Uttarakhand are facing a serious water crisis. Drinking water in particular is a scarce commodity, and the landscape is dotted with women and children walking miles to collect drinking water from natural springs and other water sources.

TATA VILLAGES –

In 2001 the Trust initiated the Himmothan Pariyojana programme to work on rural development issues in Uttarakhand, in collaboration with the state government of Uttarakhand, as formalised by a MoU between the two in 2004, for a period of ten years. One of the first programmes to be initiated was a largescale water and sanitation programme (WATSAN) which would bring drinking water to villages with the most severe scarcity, coupling it with 100 per cent sanitation coverage of the village. It was decided that the drinking water schemes would only be gravity schemes (bringing water from a higher source, usually a fresh water spring through a pipeline to the village using only gravity, that is, no use of electricity and pumping), and the sanitation units would be simple, adapted to local usage and long term sustainability. The project is implemented on the ground by local non-profit organisations and monitored by a

Awards: The Nirmal Gram Puruskar (NGP)

The Nirmal Gram Puruskar (or Clean Village Award) is an incentive award started by the Government of India to add vigour to the country's Total Sanitation Scheme (TSS). The NGP is given to 'open defecation free' villages, which are proven to have become fully sanitised. All houses, schools and Anganwadis in the village must have sanitary toilets and awareness amongst the community on the importance of maintaining personal and community hygiene, and a clean environment. The criteria of the NGP are strict, and unfortunately based on villages in the plains. It also abides by the census definition of a village, ignoring hamlets and outlying communities, which are often the focus of the HMP programme.

In the first phase of the HMP Watsan programme seven villages out of a total of 43 were awarded the NGP. In phase two of the programme, four have been nominated for the award. The largest impact of the award is seen to be on the community, which have become excellent showcases for the project.



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The programme brought about tremendous learnings. Similar projects are implemented by the state government, usually funded by the World Bank or the ADB. Although in some areas these schemes work, it was realised that a huge gap lay in villages in the more remote regions, and those which do not have at least some political recognition. Issues also arise due to differences in the designation of recognised villages. Over time villages tend to spilt into several "toks" or hamlets not recognised by the state till the next census, and therefore not nominated for government schemes, irrespective of size and population. The quality of material and planning in government schemes also remains an issue, further aggravated by the lack of local involvement in planning, construction and management. Most schemes seem to fall into disuse and disrepair within a few years of construction.

Till date about 150 villages have, or are in the process of being provided with drinking water schemes and individual household sanitation through the HMP Watsan programme. Informally known as "Tata Gaon (villages)" amongst the villagers, the schemes stand out from similar government schemes in quality, durability and in the fact that local villagers are strongly involved in developing and maintaining the systems, through village 'Management Societies'. Work is ongoing in another 50 villages. The process includes identification of villages in each district – developing a village list, for which proposals are invited from villages, which are then nominated by HMP partner organisations based in the field. The popularity of the programme is such that during the last list preparation there was something of a stampede amongst villages to be nominated, most of which adjoined older project villages. Villages are vetted for several indicators

before inclusion, including scarcity, distance of source stream from village, year round flows in source stream, participation of villagers, conflict identification, etc. The finalised list is then approved by a District Magistrate headed district committee (the DLCC or the District Level Steering Committee). Approved lists from all districts are then placed at the annual State Level Steering Committee (SLSC) headed by the Chief Secretary of the state for final approval. These Committees were agreed upon as to be formed by the State Government, and meeting held on a regular basis, as mentioned in the MoU.² It is acknowledged that over the years the State Government has given all possible aid towards timely implementation of the project.

Since 2002 HMP has completed drinking water schemes and total sanitation (building of sanitation units/ toilets in every house) in 90 villages in two phases. In these 90 villages, a total of 157 piped schemes for water (over 400 kilometers of pipe laying!) and 3,119 sanitation units were constructed. These two phases covered a total of 5,001 households (approximately a population of 25,000). Phase three of this programme was initiated in 2011, with another 50 new villages. The Conrad N. Hilton Foundation provided part funds in the second phase of the programme, while community contribution is at least 10 per cent in cash, usually more.

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क्र.सं.	ग्राम	रकबा	दरदरकार	कुल लागत	सहायक लागत	शेखरत कुल
1	कार्य/अभियंता	—	—	9,75,908	97,5,90	8,78,318
2	केचमेट सुराव (कनिंसी कार्य एवं वृक्ष रोपण कार्य स्थित)	—	—	—	—	—
3	शौचालय	18	7900	1,42,200	1,01,450	40,750
4	कुदा गड़डा	12	60	720	396	324
5	खेदला गड़डा	18	600	10800	5940	4860
6	वर्मा खाद गड़डा	1	1500	1500	550	750
7	नेडप	3	1000	6000	1400	3,600
8	सी. पी. पी.	—	—	—	—	—
9	प्रशिक्षण	—	—	23,300	—	23,300
10	संचालन एवं रखरखाव	1	—	9,045	9,045	—
11	अनुदान	1	—	97,590	97,590	—

With time, learnings evolve. Each drinking water scheme has a strong component of catchment protection. It is essential to conserve the area from where the stream descends, from where its main water flows are sourced. If the headwater zone of the stream is disturbed water flows will be disrupted and entire schemes can be laid to waste. Catchment protection is often the most challenging part of a drinking water programme and full and complete cooperation of the villagers is essential to maintain a good catchment. It implies fencing off the identified catchment, planting and maintaining forest cover, making sure animals are not allowed to graze and forest fires do not ravage the vegetation, that conflicts do not result in deliberate mishaps, and no one siphons off the stream above the scheme's reservoir. In the village selection process, the area of catchment must be identified as viable and conflict free.

In about 2007-08 it was realized that despite catchment protection activities going by the book with excellent villager cooperation, some stream flows had begun to show reducing trends. Low stream flows can make a scheme defunct and are simply not an option. In 2009, a Pune based organization, ACWADAM,³ consisting of a team of hydro-geologists, was roped in to survey four of the existing catchments and to comment upon the issue of reducing stream flows. The team identified the true catch-



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ment, labelled infiltration zones, and developed detailed geological maps of the area. Studies showed that some

catchments, identified originally as the area surrounding the upper zone of the stream, were not actually the main source of water for the stream. Due to the nature of the Himalayan rock beds, belowground flows of water sometimes come from as far as the other side of the mountain.

Identification of catchments took on a new dimension, and in the new, third phase of the project, hydro-geological studies have become an integral part of the village selection process. At the same time ACWADAM is now involved in intensive hands-on training for partner organisations and even villagers, to identify their basic geology and infiltration zones. Surprisingly, this new venture has been extremely popular with the organizations and villagers. Some villagers mentioned that their forefathers knew more accurately of basic geology and belowground flows than they did, but such traditional wisdom has sadly died out with time.

Non-Measurable Impacts

Women are used to drudgery in the mountains. Hundreds of years of carrying heavy loads of fodder, grasses, wood and water, walking up and down steep inclines, through deep jungles and rocky ledges balancing loads of up to 45 kgs. They retain a sense of humour about it. Songs sung by married women often revolve around the fact that they worked like animals in their father's home, and now, once married, do the same in a new house, so the beasts of burden are their only true relatives. Or, on saving a friend's life from a leopard, or carrying home a sister who had slipped and fallen down a cliff. A study once estimated that a village woman of these mountains walks a minimum distance equal to the length of India, from Kashmir to Kanyakumari in one year. A distance of about 3,000 kilometres.

They laugh when this is mentioned as that's only about eight kilometres a day, they possibly do about double that, a full round trip of the country. Then they say that of all the loads they carry, water is the most tiring. If you trip and fall, you make another trip. If a guest arrives unexpectedly, you make another trip. You try and not waste the water, not wash a child's hands, not wipe his face. Not drink water or tea yourself. Reuse the wash water several times. The several hours of carrying

heavy loads brings on back, shoulder and other health problems. But most of all they grudge the time spent away from the children. Five to six, or more hours a day in the forest mean that housework takes up all the rest of the day. "I've barely seen my children grow," says one; another mentions her sickly boy growing up with the elderly grandfather. One of the most relevant impact statements in a Himmothan WATSAN village was from a woman who simply said, "I can now feed my children." What she meant was that she did not have to leave cold chapattis and gruel for the young children to feed themselves, but could take the time to sit and feed them hot food. Impacts of this simple act on a child's health are obvious, as would be the impact on her own. Other women mentioned readying the children for school in the morning, brushing their teeth, giving them baths at the taps in the afternoons, taking time to grow a vegetable garden, meeting other women to sit in the sun and knit or stitch together. Ask them how they feel about the new toilets constructed outside every house and again there is much amused giggling. An elderly woman says abruptly, "is that a question to ask? We used to go to the forests before the men wake up, before the morning sun rises, in the winters, in the rains. Do you know how vulnerable a woman is in the forest in the dark?"



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team of external experts¹ and the Himmothan Society. Villagers are brought together in 'Management Societies' which have the role of operation and management of the schemes.