

Reaching the Unreached in Uttarakhand

Demography, Drinking Water and Technology

The basic problem in the Uttarakhand region is the hilly terrain and the absence of a transportation network, making access to basic needs like water and sanitation, primary health care and education almost impossible on a universal basis. The unreached have to be reached. Some observations on the problem of drinking water.

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Uttar Pradesh is politically the most dominant state in India, with 85 seats in the Lok Sabha. Demographically, however, it is the weakest state, with the most dismal prospect for population stabilisation. According to population projections, UP's population will be well over 400 million by 2051. Though fertility rates are declining, according to the latest available data from National Family Health Survey 2nd round (NFHS-2), the total fertility rate (TFR) in UP was 3.99 or 4 per woman during 1996-98, the highest in India. The infant mortality rate (IMR) was also about the highest in India (86.7 per thousand).

The plain fact is that UP is an unmanageable state, given its population size and its geographic diversity. Vested political interests have always opposed the splitting of UP into several smaller states. The States Reorganisation Commission had recommended in 1956 the division of this enormous state but the government paid no

heed to it. UP continues to remain one of the most backward states of India despite the fact that it has produced six prime ministers and even the present prime minister's constituency is in UP.

The people of Uttarakhand have been waiting patiently (with occasional outbursts) for long years for the formation of a hill state so that their socio-cultural identity is preserved and developmental activities promoted. There is a feeling that politicians and bureaucrats have been largely insensitive to the problems of this Himalayan region. Most bureaucrats consider posting in the hills a punishment. Though there have been three chief ministers from this region, Uttarakhand remains neglected. The basic problem in this region is the hilly terrain and the absence of a transportation network, making access to basic needs like water and sanitation, primary health care and education almost impossible on a universal basis. The unreached have to be reached.

The central government has conceded the demand for carving out a separate hill

state – Uttarakhand, which will be called Uttaranchal – but the bill concerning this could not be introduced in the last session of parliament. There is political controversy regarding the inclusion of Haridwar and Udham Singh Nagar in the proposed state.

In passing it may be mentioned that originally there were eight districts in Uttarakhand: five in Garhwal division (Uttar Kashi, Chamoli, Tehri Garhwal, Pauri Garhwal and Dehradun) and three districts in Kumaon division (Nainital, Almora and Pithoragarh). Five new districts were carved out by the Maya Devi government in UP: two in Garhwal division (Rudrapur and Haridwar) and three in Kumaon division (Udham Singh Nagar, Bageshwar and Champawat). Thus there are 13 districts in all.

We shall confine our observations to the problem of drinking water. Of late, the national media, both print and electronic, are replete with reports on the drought and acute shortage of drinking water in many parts of India. Thanks to the fuss over India crossing the 1 billion population mark on May 11, 2000, I had an over-exposure to the media. I decided to leave Delhi till July 11 when a similar fuss would be made on the World Population Day. Besides, I was a victim of the acute water shortage and abrupt power-cuts in Delhi. I decided to take the road to Uttarakhand to do some fieldwork on population and drinking water.

With my wife and two dogs, I travelled 500 kms by car through Nainital, Almora and Bageshwar to stay in a tiny Himalayan village called Mankote. My host Ashit Mitra has spent 15 years in the Uttarakhand region trying to find a viable solution to the problem of water and sanitation in this difficult region. As a researcher in census methodology, I was impressed to see the smooth functioning of the house listing operation for the Census of 2001 even in this remote village. It was a delight to see that the house where we stayed had a freshly painted house-number on the white wall marked 'one', probably because this house is on the highest point on the extreme end of the village. Pine trees and mountains surround us, the air is refreshing and the water clean – it comes from the ferro-cement tanks put up by Ashit's project on water and sanitation. The project is run by Kassar Trust which stands for Kumaon Association for Social and Scientific Action and Research. The local people worship a deity called Kassar

Devi and the acronym therefore is most appropriate.

It was in 1985 that Ashit Mitra who grew up in the Sri Aurobindo Ashram in Pondicherry and his English friend Tim Rees, an engineer by training who taught at the Sri Aurobindo International Centre of Education in Pondicherry, came to visit Almora district to get a feel of the mountains and they fell in love with the people and the place. What worried them was the acute problem of drinking water in spite of the abundant natural resources and rainfall. It was generally believed that installing handpumps was a mad idea but Tim and Ashit persisted. They went back to Pondicherry, formed the Kassar Trust and started work on water and sanitation in 1986, with grants from two donor agencies in UK and the Netherlands.

I went round several villages, saw the actual working of the water and sanitation project (WATSAN), talked to the villagers and read through the technical material generated by these two dedicated men. Tim went back to England in 1996 but Ashit stayed on: so my knowledge about the new technology is derived from him. Let me briefly summarise what I have understood after my fieldwork.

Life in the steep Himalayan slopes is directly dependent on the ability of the soil and the rock mantle to retain moisture through the year. This ability is enhanced by the forest and other vegetative cover, which retards and reduces the surface runoff and increases the process of infiltration. This moisture coursing down through the small subsoil fractures surfaces at times as seepage on the soil, which the local inhabitants have used for making their traditional 'Naulas'. As it flows further down the slope, the moisture surfaces on the ground as a gushing spring or 'Dhara'. This is how human settlements in the Himalayas have met drinking and household water needs for centuries. This delicate hydrological balance was abruptly deranged in the 1960s and 1970s by irresponsible destruction of forest cover, which led to serious imbalances severely affecting the complex relationship between man and nature.

A simple technology was developed to allow people to access subterranean water by means of an infiltration well/handpump technique. This technique was environment-friendly and was readily accepted by the people. It involved intercepting small subterranean seepages (with a minimum dry season discharge of 0.5 litre to 1 litre

per min) no deeper than 30 ft below ground level by means of an infiltration well. The well was then capped and sealed to prevent surface pollutants from coming into contact with the water below. The water from the well was then lifted by a handpump or taken to the village below by means of a pipeline.

The technology is simple to use and protects drinking water sources from surface contaminants. It can be entirely constructed by village teams trained for this purpose and there is very little maintenance problem. It is important to note that right from the beginning the people's participatory approach was adopted by Kassar Trust through the mechanism of Suraksha Samiti (user group water committees) to ensure effective beneficiary participation, prevention and misuse of the scheme, proper distribution and timely repair when needed. The construction technique uses simple tools and can be carried out in remote villages off the road. The technology has been extensively field-tested and over 200 infiltration wells constructed in Kumaon region alone during the past 10 years. It is possible to replicate this technology in similar regions in other parts of India and south Asia.

Where no subterranean seepage exists, for example, near to and on the ridges, one could adopt rainwater harvesting from rooftops. The Trust had field-tested and modified this technology developed by Structural Engineering Research Centre, Ghaziabad (a government of India research organisation). The technique, again simple, involves collecting roof water, filtering and storing it in 10 kl tanks. The tanks are made in situ in ferro-cement (a 25 mm shell made of steel mesh and cement) which are both economical, and unlike stone masonry and cement tanks, do not crack in this tectonically sensitive zone. The water stored in these tanks can be used for all household purposes and also for drinking, if passed through a simple double bowl candle filter available commercially.

In 1996, the World Bank launched the Uttar Pradesh Rural Water Supply and Environmental Sanitation Project (popularly known as the Swajal Project) in 1,000 villages in Uttarakhand and Budelkhand districts through the department of rural development, government of UP for a period of six years. One of the objectives of the project is to "test an alternative to the current supply driven service delivery mechanism and promote sanitation and gender awareness".¹

In the latest evaluation report on the Swajal Capacity Building Programme prepared by the UP Academy of Administration, Nainital, there is a chapter on 'lessons learned' which says: "Software, i.e., community development activities, tend to be totally ignored from the implementation phase onwards" and operation and maintenance are "viewed and addressed as a hardware issue to the neglect of its serious software implications".²

The People's Water and Sanitation Programme run by Kassar Trust blends beautifully the hardware developed by Tim Rees and the software developed by Ashit Mitra. Technology does not operate in a social vacuum as in several government projects based on the provider approach or, for that matter, in several NGO projects, which do not have any real participation of people and are based on 'do gooding' verging on charity.

I talked to Sher Singh (85) from a neighbouring village and asked for his comments on what was going on in this part of the world. Sher Singh spent all his life as a driver and knows the region inside out. After retirement he was elected pradhan of Udera panchayat and subsequently an elected member of Almora Zila Parishad. He had also joined the freedom movement in 1942 and gone to jail. I found him to be a Gandhian at heart. I asked him about the water crisis. At the back of my mind was the raging controversy over water: experts like Anil Aggarwal think that the water crisis is largely the result of gross mismanagement by the government while other experts like K B Sahay hold the view that prolonged rapid population growth had exceeded the carrying capacity of the ecosystem and was responsible for the water crisis. Much to my surprise, Sher Singh's explanation made room for both these viewpoints. He enumerated six factors resulting in the acute water shortage in the Uttarakhand region:

(i) Earthquakes in this hilly region which upset the water regime, (ii) extensive deforestation resulting in the inability of the soil to hold water, (iii) increase in population without any increase in the sources of water. "The 'Naulas' and 'Dharas' have remained the same but the population has more than doubled. How can everybody get water"?, (iv) The failure of the Jal Nigam programme because of widespread corruption. "Everybody wants a commission...the water pipes are stolen...the contractors do not know technology...the system does not work in

remote areas", (v) Change in the mindset of people who have become lazy and do not want to exert themselves to fetch water as in earlier days. "They all want cushy government jobs. They want to open the tap for water to flow", (vi) Decline in moral values. "Nobody thinks of the country...everybody wants to make money somehow or the other."

Sher Singh also said that during his youth he had not seen any water scarcity, things worsened after 1975. It is a fact that population has grown relentlessly in the BIMARU states for the last five decades. From the records of Mankote village I estimate that even now the population is growing at the rate of 2 per cent per year. The fragile ecology of this region cannot assure sustainable development in the face of this mounting population pressure.

Finally, even a short spell of fieldwork convinces one that water is a gender issue. It is tragic to see the young women and girls facing the drudgery of spending long hours in fetching water under strenuous circumstances. Roof water harvesting technology cuts down the time and labour of women and girl children. On an average, they have to carry roughly 75 tonnes of water annually for drinking and household use. With the aid of this new technology 45 tonnes are reduced from this crushing load annually. As Ashit observes: "If fetching water was a man's job instead of being exclusively a woman's duty as it

is now, the problem would have been resolved ages ago".

I face the blue hills capped by clouds as I write this. To get acquainted with this region one should start with the encyclopaedic work done by a remarkable British officer, E T Atkinson, more than a century back: six volumes on the *Himalayan Districts of the North-Western Province of India* (published in 1882). Atkinson writes in his preface to volume II "...it is hoped that its contents will be found suggestive to many, of the lives they should take up, not only for the higher aim of aiding in the great work of diffusing a knowledge of India and its peoples, but for the personal aim of following out some study which may give the student a fresh interest in life..."³

From Atkinson to Ashit is a long story hidden in the Himalayan heights but they have certainly induced me to get 'a fresh interest in life'! **EW**

Notes

- 1 CDS, UP Academy of Administration, *Report: Swajal Capacity Building Programme 1999-2000*, Nainital, May 2000, p 2.
- 2 Ibid, p 48.
- 3 E T Atkinson, *The Himalayan Gazetteer* (first published under the title *The Himalayan Districts of the North-Western Provinces of India*, in three volumes of two parts each, Allahabad 1882), Reprinted by Cosmo Publication, New Delhi, 1981, Vol II, Part I, p vi.

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