

# Water Crisis in the Nepal Himalayas

*-A case of too much, yet too little*

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Himalayan peaks with the legendary 'eight thousanders' are referred to as water towers of South Asia. They are the sources of all the three of south Asia's major river systems, the Indus, the Ganges and the Brahmaputra, and Nepal lies in the middle of it. The five river basins of Nepal, all important tributaries of River Ganges, contribute 71 % of the annual flow during the dry season and 40% in the monsoon which sees 80% of the total rainfall. The total renewable water resources including the groundwater adds up to 210.2 billion km<sup>3</sup> /year, which makes Nepal one of the Asian countries with the highest level of water resources.



The reality however is quite different. In spite of all the above resource, Nepal faces acute shortage of water and remains one of the poorest countries in the world. For many Nepalese who live in the hills, the water flowing in the large valleys below is out of reach. Families in the mountains have to do with less than 5 liters per capita per day as compared to 700 liters used by an average person in USA. Only half of all farm land is irrigated and more than a third of the population has difficulties in obtaining water. In Monsoon however, widespread landslides and flooding take heavy tolls on human lives and the infrastructure. Only 10% of the country's groundwater potential is utilized and so far only 253 MW of hydropower has been generated which is 0.3% of the total potential.

The uncontrolled dumping of wastes into flowing streams has turned the Himlayan waters into giant sewers. It is said that 80% of the country's illness is due to contaminated water. Every year many children die from the water-borne diseases like dysentery, hepatitis, and even cholera which are very common throughout the country. In recent years, another menace has been added to the list of the water pollutants -- Arsenic. Five of the southern districts in the plains bordering India have shown large concentration of

arsenic in shallow groundwater, the only source of water supply for some 10 million people. Water in many wells exceeds the regional standard of 50 ppb but the problem is more acute in Nawalparasi. Most have no choice except to use the contaminated water. Though it is believed the symptoms of arsenic starts to show after some 8 to 10 years, random cases of Arsenicosis can be now observed in some villagers. Though it is believed that the cause is natural in origin, why and how arsenic is transferred from the soil to water is still debated and little understood.

There is no simple single solution for all the problems mentioned above. The obvious solution for the water shortage would be to store and treat the river water, but building dams in the world's youngest and most fragile hills, which are known to sit in the seismically active zone, is not easy. Steep gradients of the streams and siltation problems make the job even more challenging. Also the economic, social and environmental cost makes them unattractive. Although the biggest demand for Himalayan water comes from agriculture, large scale irrigation projects in the mountains are impractical because there are only small pockets of cultivable land. Moreover large rivers flow at the bottom of the mountains while the farms are perched higher on the terraces carved out of the slopes.