

Dams have an impact on environmental health

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Industrialisation is polluting India's limited drinking water supply. To make matters worse, major river systems are obstructed by hydroelectric projects that disturb the aquatic ecology and the health of nearby communities.

India's development trajectory continues to be centred on the construction of large dams. India had fewer than 300 major dams at independence in 1947. By the year 2000, there were approximately 4,000 hydroelectric dams. Half of these were constructed between 1971 and 1989. Hydroelectric power is ubiquitous even in the eco-sensitive north-eastern region, for example the Subansiri Lower HE Project in Assam and the Dibang Multipurpose Dam in Arunachal Pradesh. These projects have impacted local ecosystems at an alarming rate.

Apparently, environmental health impacts are largely ignored when mega-dam construction projects are undertaken. In the Sardar Sarovar Dam, a hydropower project on the River Narmada in Gujarat, India, community health impacts were not considered in the project's planning, construction, or execution. The reservoir's perimeter raised humidity across the locality, extending the life and range of the area's mosquitoes and allowing for a prolonged malaria transmission cycle. Health impact studies have linked the construction of dams with the rise of malaria and schistosomiasis.

Water diversion construction projects have also had negative consequences. Studies have linked the reduction process in aquifers and oxidation in the unsaturated zones to be the likely source of arsenic pollution in the delta's groundwater. The groundwater in the lower Gangetic Basin was impacted by dam and reservoir developments along its tributaries. As a result, water pollution is a major negative impact of the Farakka Barrage, affecting communities downstream.

Dam-induced displacement and forced relocation had a strong impact on the dietary patterns of the tribal population. As grazing lands fell under the dam, livestock levels declined due to the difficulty of getting fodder.

The Tehri dam displaced the indigenous Garhwali population. The Garhwalis have a deep understanding of nature and traditional ecological knowledge. At the relocation site, though, such resources were not available. The resettled villagers experienced limited availability and poor quality of land. Since the Rajaji forest close to the relocation area is a national park, the government strictly limits the use of its supplies. The former abundance of fruits and vegetables harvested from the forest is no longer available. The resettlers were obliged to find alternatives for their daily needs because they no longer had access to forest sources.

It is evident that major hydro-electric power construction has undermined the health of local people. The construction of dams disrupts the natural flow of water. The Farakka Barrage on the Ganges is thought to be responsible for the increase in saltwater intrusion from sea due to reduced fresh-water flow. This indirectly impacts the aquatic ecosystem, fishing and farming.

Recent EIA guidelines undermine ethnic and tribal groups. Their voices are barely heard in designing and implementing these projects. Village councils should be granted greater control in resolving grievances and combating environmental health impacts.

To avert such health impacts, we argue for participatory Health Impact Assessment (HIA) for mega-dam construction projects. Development policies should be assessed using HIA techniques during the scoping stage. HIA is used to analyse the health effects of a project, policy, or programme where health is not its primary goal. HIA can help policymakers analyse and seek to minimise them. Implementing participatory HIA can ensure that health does not suffer in the pursuit of short-term economic gain.

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