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## Bitter Truth

# Tipaimukh Dam: Bane or boon?

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The unilateral Indian move to construct a dam at Manipur to regulate flow of the river Barak and generate electricity, despite opposition from upstream state Manipur and downstream country Bangladesh, has been made without any discussion with the government of Bangladesh as required by international law on common rivers.

S. Dhanbir, Co-ordinator of North East Forum Dialogue, contended that the proponents of the Tipaimukh hydroelectric power project are yet to conduct a detailed and independent Environment Impact Assessment (EIA), which is required under the Environmental Protection Act, 1986 of India and its amendment in 1994, where data should encompass information collected over at least one year to assess the likely impact on the ecology, environment and wild life population at the site itself and both up and downstream.

In 2007, North Eastern Electric Power Corp. commissioned the Agricultural Finance Corporation of Mumbai to carry out an EIA of the Tipaimukh dam. The Environment section of the EIA noted in its report: "Average water availability at downstream for monsoon season at post-dam condition will decrease by 30% in comparison to pre-dam condition and thereby will provide relief to downstream populations from recurring flood havoc," validating concerns about reduced water flow.

Brac University vice-chancellor and water expert Professor Ainun Nishat has rightly observed that Tipaimukh dam could play a role for Bangladesh if it was a joint project and managed in line with Bangladesh's requirements. He commented: "We know neither their construction plan nor their management plan." He adds: "Without exchange of data regarding the impact of the dam on ecology, environment, fishery, wildlife, and most spectacularly on the life and living of the people living upstream and downstream of the dam, any assessment done by India will be incomplete and one-sided." Other experts have asked: "What will happen if the gates have to be opened when there is a big rise in water level in the reservoir?"

Bangladesh and India are now at loggerheads over the latter's proposed dam, caused mainly because of the lack of openness about the whole project. According to Prof. Asif Nazrul, an expert on international river law, Bangladesh as a lower riparian country has the right to be informed before any action relating to an international river is taken.

Dam construction in recent years has turned out to be a dirty business because the hazards that follow the construction outstrip the benefits. The World Commission on Dams analysed the environmental, economic and social impact of the world's 45,000 large dams, and the result unveiled by Nelson Mandela, Chairman of the Commission, in the later part of 2000 is quite bleak. Overall costs of dams, to both man and nature, are mostly negative. They are notorious for creating great environmental change. They force massive human resettlements, mostly of people who live where the lake is due to appear.

The World Bank estimated in 1994 that 300 large dams forced some four million people to leave their homes. The resettlement is often badly planned and executed. The report of the World Commission on Dams concludes that all too frequently "an unacceptable and unnecessary price has been paid to secure those benefits." Until now, millions of people worldwide have been forced out of their homes and settled elsewhere with paltry compensation and no means of earning a living.

The list of indictments is daunting. Ecosystems were destroyed or permanently damaged. Hydroelectric dams, once regarded as clean renewable energy source, turned out to be significant generators of greenhouse gases given off by decomposing vegetation in tropical reservoirs.

Many of the worst environmental effects of dams stem from their supposed benefits. For instance, the constant and reliable irrigation hydroelectric dams can waterlog the ground. The water brings underground salt to the surface, which is left behind when the water evaporates. Eventually, the soil becomes too salty for crops to survive. Even the prevention of flood is a mixed blessing. The salt which was once carried downstream by a swollen river replenishing the soil and nutrients, no longer makes its journey to the sea. Instead it clogs up the reservoir.

The building of dams is often destructive. It usually means clearing of forests or other habitats in areas to be flooded. Water in reservoirs, especially in water storage dams, becomes silted with vegetation from upstream. As that rots it emits carbon dioxide and methane, contributing to greenhouse effect. Some estimates say that reservoirs could account for more than quarter of the "global warming potential" of gases in the atmosphere.

There are other problems, too. Some large dams alter flood cycles and downstream flows, pollute rivers, remove nutrients and alter water temperature. All these can affect the survival of plants, fish and animals downstream. Blocked rivers disrupt the migration and breeding of fish, causing extinction of some species. In recent years, assessment about dam building indicates that Aswan dam and Aswan high dam, commonly held up as examples of planning, now shows negative results. The arable land downstream is being eroded away partly because it is not getting enough silt. We can also see the adverse effect of Farakka Barrage on agriculture and fishery in the northern Bangladesh.

Dams are often touted to be protection from floods, but this often turns out to be one of their most troubling drawbacks. Traditionally, land near a river has been irrigated by floods and planted as they recede. A dam can stop this from happening and rob millions of people downstream of their livelihood. The belief that the dam's irrigation of other land will make up the loss is not true. A study on the Kainji dam on the Niger showed that the dam reduced rice production downstream by 18% and fish catch by 60-70%.

But the thorniest problem is the uprooting and resettlement of people. Those most likely to be evicted by a dam are least good at adapting to new conditions. They often have to change their

way of life. The World Bank itself reckons that only in a handful of cases, starting from Kaptai in Bangladesh to China and even the US, residents displaced by a dam ended up better off.

Experts fear that the Tipaimukh dam will choke up the Surma and Kushiyara rivers during the dry season and have a similar effect on a vast area of Bangladesh as that of the Farakka Barrage. Evidently, obstruction to the natural flow of Surma and Kushiyara will seriously hamper hydrology, and agriculture in at least seven adjoining districts that produce bulk of the country's rice crop.

Dams for all their material blessings are responsible for some of the worst environmental tragedies. The problems in the lower riparian countries will mount when a country building the dam in the upstream diverts or releases water to suit its needs without taking into consideration the impact on environment, agriculture, living, wildlife, fisheries and forest resources downstream.

Other than the ecological damage, the social penalties that dams impose are nowadays better understood. Dam builders, financiers, conservationists, and anti-dam protesters who met in Switzerland, agreed as early as 1997 that if an international commission were created to set standards, if everybody affected by a dam were in the planning process, if the option of building dam were weighed against all alternatives, if all the costs were accounted for and if everyone benefited from the dam, then it could go ahead.

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