

## **Tipaimukh Dam for hydro-power: An old concept of use of river-waters**

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Rivers are gifts of nature and their flow knows no territorial boundaries. Where there are waters, human habitations take place and human beings and waters have symbiotic relationship. Water is life and water provides food for human beings.

Almost all capital cities of the world are either bounded by rivers or near to rivers or seas. Waters of rivers sustain agriculture, fishery, river transportation, and day-to-day essential use for households.

Many communities live in boathouses on the rivers and also use the rivers as transportation, thus the waterways are an integral feature of their lives.

Unique culture and civilisation grow around the water of rivers. The Colorado River and the use of its water has shaped the history of the states of Arizona, California, Colorado, Nevada, New Mexico and Utah of the US.

Folk music, “Bhatiali,” in Bangladesh, originates from rivers. It conveys descriptions of the beauty of nature of the rivers and their wonders. The boatmen of Bangladesh composed much of the traditional Bhatiali folk music, as they spent much of their time in their boats on the rivers longing for their families and finding inspiration on the waterways of Bangladesh. As new boatmen take to the waters, new songs are added and compositions change, but the form of Bhatiali remains the same.

River basins are significant part of national economy and offer market linkages with other riverine countries. Food security and self-sufficiency of nations depend on sustainability of natural flow of rivers.

### *Trans-boundary Rivers with India:*

Bangladesh, excepting some minor rivers, has major 57 trans-boundary rivers—54 with India and 3 with Myanmar. Trans-boundary Rivers are considered as integrated whole, taking into account of geographic, hydrographic, hydrological, climatic, ecological and other factors for their natural character.

Given the above, the construction of Tipaimukh dam on the trans-boundary Barak River that will interfere the natural flow of the river has raised hue and cry both in Manipur state in India and in Bangladesh. In Bangladesh, it is because the Barak River is the life-line of the mighty Meghna River of Bangladesh.

The Barak River enters Bangladesh near Amalshid of Sylhet. At Amalshid the river bifurcates. The right hand branch is the Surma River and the left hand branch is the Kushiara River. Both the rivers unite in Habiganj district and flow down as the Kalni River. The Kalni River meets with Ghorautra River near Bajitpur of Kishoreganj district

to become the Meghna River which meets with Padma River near Chandpur district falls into the Bay of Bengal, constituting a big estuary in Bangladesh.

This estuary is the spawning place of Hilsa and other fishes as well as marine lives. The estuary is a part and parcel of ecology of Bangladesh which cannot be measured in terms of money. Preservation of ecology is imperative for environmental grounds during the crunching time of Global Climate Change.

There is an alarm among many water experts in Bangladesh that the construction of the dam on the Barak River is expected to dry up the flow of Surma and Kushiara, source of Meghna river.

A Parliamentary delegation from Bangladesh is expected to visit and assess the impact of the dam and report to the parliament in due course.

*Discredited concept:*

Commercialisation of rivers arises because of the attitude that any river water passing to the sea is a waste and needs to be commercially used. The fate of the Colorado River provides an example of commercial approach. This fabled river reportedly dries up in the South Californian desert.

The commercial approach of the river has been followed by developing countries and India and China have built around 57% of the world's large dams.

The construction of dam on rivers for hydro-power is a much discredited idea and its benefits are seriously questioned by experts.

The question is: has the construction of dam/barrage interrupting the natural flow of rivers achieved its social, ecological and commercial purpose in the long run?

The World Commission on Dams, in its report in 2000, having examined the technical, financial, economic, environmental and social performance of the dam projects, has concluded that overall the benefits of dams have not justified their financial, social and other costs.

There are many examples how construction of dams on rivers has affected adversely the environment in the long run. Some examples are noted below:

Aswan Dam in Egypt (completed in 1970) has developed major agricultural and environmental problems. The increased use of artificial [fertilisers](#) in farmland below the dam has caused chemical pollution which the traditional river silt did not. Irrigation control has also caused some farmland to be damaged by waterlogging and increased [salinity](#), a problem complicated by the reduced flow of the river, which allows salt water to encroach further into the [delta](#).

The Aswan Dam tends to increase the salinity of the Mediterranean Sea, and this affects the Mediterranean's outflow current into the Atlantic Ocean. This current can be traced thousands of kilometers into the Atlantic.

Due to the Aswan Dam inhibiting the natural fluctuations in water height, i.e. floods, the [bilharzia](#) disease has flourished causing great expense to the Egyptian economy and people. The battle with the disease continues..

In China, Three Gorges Dam on Yangtze River (scheduled to be fully commissioned in 2009 after 16 years of work) is the world's biggest hydro- power project and some environmental experts say that the Three Gorges Dam is "a model for disaster" and around the world, large dams are causing social and environmental devastation while [better alternatives](#) are being ignored.

If ever there was a lesson in the unintended effects of damming rivers, the Farakka Barrage is probably it. A 4.5-kilometer Barrage completed on a tributary of the River Ganges in 1974 is threatening to wreak havoc on a series of downstream villages and ultimately silt up the Kolkata harbor, the condition it has been designed to fix, besides its adverse effects on Bangladesh.

The Barrage (completed in 1974) is now raising the possibility that two of the Ganges' major tributaries, the Padma (in Bangladesh) and the Bhagirathi (West Bengal in India), is likely to merge, with unimaginable consequences. Some 20 km downstream from the barrage, the two rivers are fewer than 750 meters apart. Ten years ago, they were almost 3 km from each other. The flow of water to the port of Kolkata, already faced with declining navigability, is expected to wane further.

The then Irrigation Engineer of West Bengal Kapil Banerjee wrote a book in the early 60s opposing the Barrage. He eventually lost his job. Indian water experts attending a seminar in Kathmandu in 2004 held that Kapil Banerjee was right and that vast areas of West Bengal, Bihar and Orissa had been badly affected by the barrage causing woes to the Indian people.

Bangladesh also has its own experience. In 1962, the then Pakistani regime constructed the Kaptai Dam in the Chittagong Hill Tracts for hydro-power with the total installed capacity of only 230 MW. As a result, some 100 000 people of the Chittagong Hill Tracts were displaced and many books have been written seriously questioning the overall benefits. Its financial, social and environmental costs of the dam in Kaptai have been enormous. Furthermore, the dam itself may become useless because of sedimentation of the Kaptai Lake.

On Tipaimukh dam, it is reported Dr. Soibam Ibotombi of the Department of Earth Sciences, Manipur University, in an article, mentioned that the "Tipaimukh dam is a geotectonic blunder of international dimensions

*New Approach:*

By 1990s, industrialised advanced countries have gradually moved away from construction of dams on rivers and developing countries must not repeat the mistakes what they had committed, water experts say.

In the US and Europe, since 1998, the decommissioning rate for large dams has overtaken the rate of construction of dams, according to the World Commission on Dams. Another factor that has contributed to the rise of new approach is the disappointing long term effects of dams/barrage on rivers.

The modern concept is called “Ecological Approach”. This means the river resources must be harvested in a way that no serious damage is done to the natural flow and course of the rivers and the eco-system they support, more so during the time of Global Climate Change.

India may easily find an alternative to generate electricity from other sources, including renewable resources for its northeastern states.

*Summing up:*

It is desirable that India may take a pioneering role in pursuing this “ecological approach” in South Asia that will help in reducing unnecessary tension among the co-riparian countries by not constructing dams.

Although India and Bangladesh are not parties to the 1997 UN Convention on the Law of Non-Navigational Uses of International Watercourses, the 103 affirmative votes of the countries in the UN show that the Convention indicates broad agreement as to how to use water of trans-boundary Rivers, such as the Barak River. India may abide by the principles of the Convention and demonstrate its leadership in the region.

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