

Dam on Brahmaputra: Consequence and Reality Check

China is planning to divert some of its water towards Eastern region, in addition to generation of 40,000 MW of electricity. The Brahmaputra River follows an odd channel to flow to the sea. It flows towards east for almost half of its length in mountainous Tibet and then it takes a U-turn (Fig 1) to enter plains in Assam. Ultimately, it enters Bangladesh towards South and meets the Ganges before reaching the sea.



(Fig.1 Great Bend of Brahmaputra)

The place where it takes a U-turn, is known as Great Bend of Yarlung Tsangpo or Brahmaputra. At the same place, the river forms the deepest canyon of the world (Grand Canyon??). Only in 1998, a 30 meter waterfall was discovered nearby and since then China is planning to build a huge hydroelectric dam having an installed capacity of 40,000 MW.

The media also claim that there are proposals in China to divert some of rivers water too through the same dam to Eastern region. It also claimed that China is planning to divert 40 BCM of water out of 71.5 BCM carried by Brahmaputra each year. The same river has a runoff of an average of 550 BCM of water when it reaches Bangladesh. Where from this additional flow comes? There are two answers – the first is the Monsoon waters and the other is the water carried by the tributaries. The monsoon flow of Brahmaputra is almost 10 times that of its dry season flow.

The first possibility is only the hydro-power generation. This does not change anything for India. Hydro-power generation is non-consumptive usage of water and should end up increasing the dry season flow by 10-20% – which should be good for irrigation usage in Assam and Bangladesh. The success of this plan depends on how the irrigation planning is done. China will also sell some of the electricity to India since it may be a cheaper option for them.

The second should also cause no harm to India. It is understandable that during Monsoon, it's the excess water that causes the problem as it floods vast area in India and Bangladesh. It's good for China as well since it is diverting the water to an area that does not get rainwater at the same time of the year. It will get water for 3-6 months when India or Bangladesh does not need it.

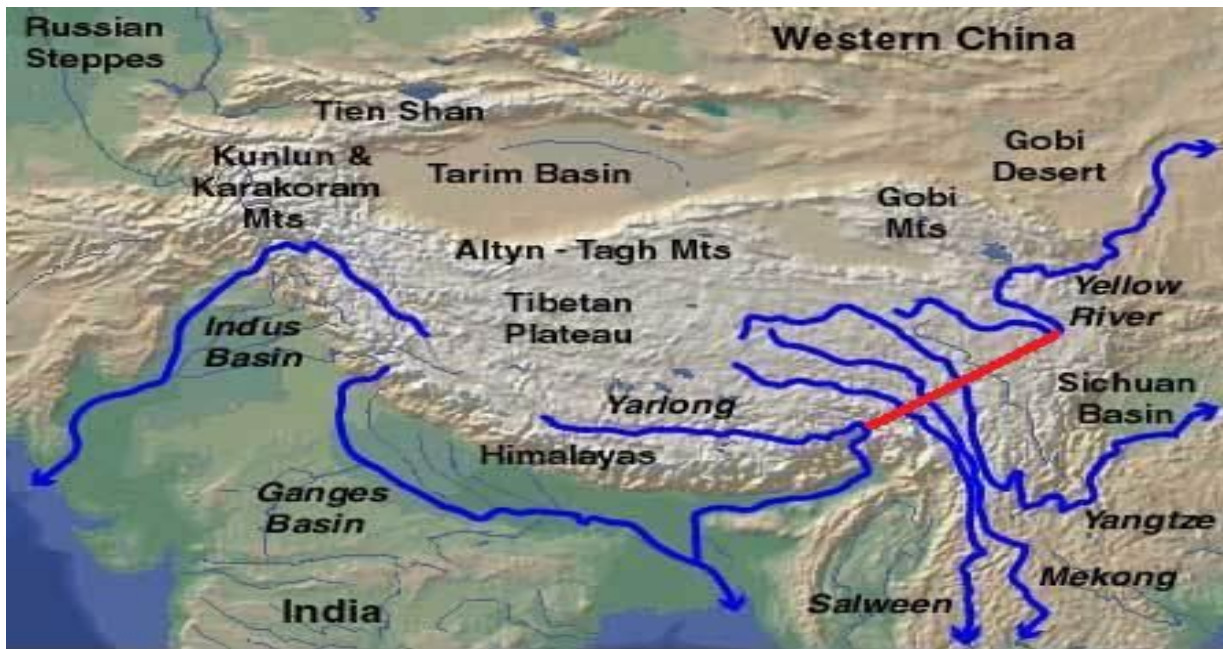
The third one could potentially have dire consequences for both India and Bangladesh. It could be completed as the second phase of Chinese plan to interlink their rivers (Fig 2.) For India, the North-East is both food-surplus and water-surplus. After the diversion starts, the dry season flow could diminish by 20-30%. For a sandwiched Bangladesh, it's time to share water with both Asian Giants – China and India. India is already taking 50% of Ganges water in the East. If Brahmaputra (Jamuna in Bangladesh) is compromised, it would virtually be a dry Bangladesh in lean season. A lot of alarmist authors also mentioned reduction in Hydro-power potential of North-East India due to Chinese diversion. Some people do not agree to them. First reason is most of planned hydro-power potential is actually in Brahmaputra tributaries. The lack in dry season flow would only block any “run-of-the-river” projects, but not anyone with a plan of reservoirs.



(Fig 2. Chinese river-linking plan)

There are ways to cushion against the third problem as well. If Indians build reservoirs in Arunachal to hold the excess monsoon water, the condition should not be that bad. However, the loss of vast forest area and displacement of tribal's from their land is regretted. The Indian Govt has already stepped a foot towards this news.

One thing we should to keep in mind that if India can not show any meaningful use of Brahmaputra waters, China has a right to divert them. This is why the first two plans has to be accepted by India even if it harms India. India does not “use” monsoon water; neither does it use the gradient of the Great Bend. The International law (though neither India nor China signed it) indicates the existing use as a parameter for equitable water sharing. China has already built a dam (Fig 3) on Indus tributary. The first Chinese dam on Tsangpo is also coming up.



(Fig 3.Chinese diversion of Brahmaputra water)

Someone has to do a reality check on how this plan would work. If a viewer can identify the river Brahmaputra (Yarlong on the map) on top of India, he can see the red marked channel (or the dotted red line on the map above) from the same river passing a string of rivers to reach the Yellow river. The river crossed includes Salween, Mekong and Yangtze – three of the largest in Asia. In the first phase, the plan is to build a connector between Yangtze and Yellow river as a part of Western routes.

It is logical to believe that China cannot divert water from Yarlong (Brahmaputra) before it does so from Salween and Mekong. So far, China has built three dams on Mekong, two are under construction and there are four more to come (fig 3). However, there are no plans to divert Mekong water yet. Once it starts diversion of Mekong, a series of political conflict is expected – especially with ASEAN states – something that China could hardly afford. This could potentially delay the plan to add further water in the channel. Therefore, in my opinion, even if China diverts Brahmaputra, it won't be soon. Literally, there is no such possibility in next 30 years in expert's opinion. By that time, energy-hungry India should cultivate the Brahmaputra and have sufficient control over it. If India fails to do that, it would be our problem because we would fail to meet our goal despite the mitigation plan is available. It's better not to be the "Cry Baby" if we know the problem beforehand.

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