



Worries about Brahmaputra

What is the issue?

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- China plans to build a 1,000-km tunnel to divert water from the Brahmaputra in Tibet to the dry Xinjiang region.
- This has created worries about Brahmaputra getting dried up, especially in Assam.

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What constitutes the drainage route of Brahmaputra?

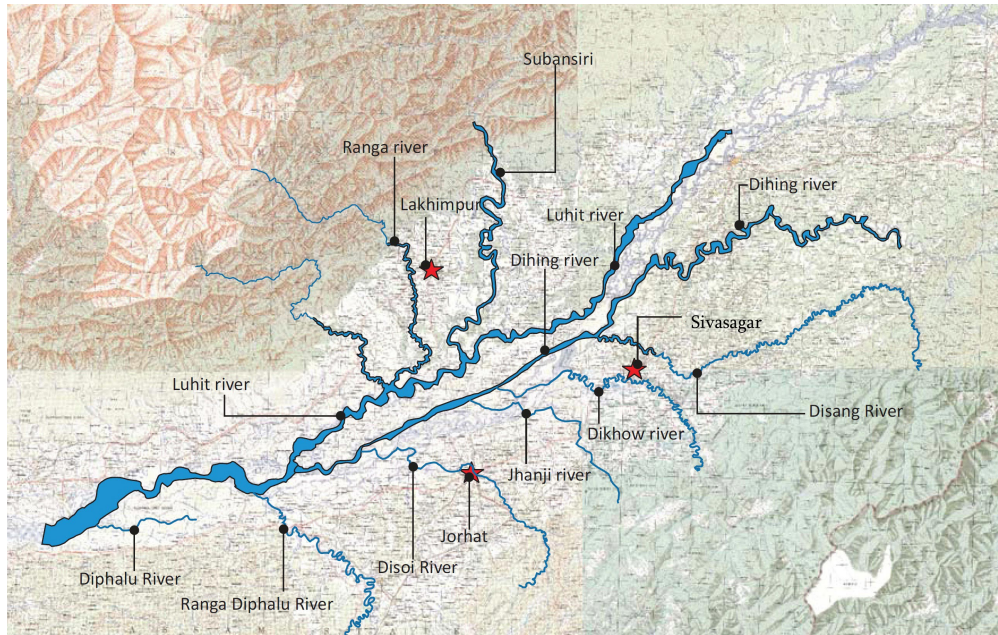
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- Out of the total length of the Brahmaputra of 2,880 km, 1,625 km is in Tibet flowing as Yarlung Tsangpo.
- 918 km is in India and known as Siang, Dihang and Brahmaputra.
- The rest 337 km in Bangladesh has the name Jamuna till it merges into Padma near Goalando.
- As a trans-Himalayan tributary, Yarlung is substantially fed by snow and glacial melts, in addition to rainfall.

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Why India shouldn't be worried?

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- There fears are hardly based on objective data-based analysis.

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- Melting snow contributes merely 15-20% of the total volumetric discharge of the river.

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- **Catchment** - With the Himalayas acting as the barrier, Tibet is a rain shadow region with an annual precipitation of about 300mm.

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- As the tributaries cross the Himalayan crest line, the annual average precipitation reaches about 2000 mm.

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- Hence, a very large component of the total annual flow of Brahmaputra is generated to the south of the Himalaya in India.

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- **Flow Rates** - While the total annual outflow of the Yarlung River in China is estimated around 31BCM, the same for Brahmaputra towards the end at Bahadurabad in Bangladesh is about 606 BCM.

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- Further, the peak flows at the 'Tsela Dzong' measuring station near the great bend in Tibet, is about 10,000 cumecs.

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- But the peak flow at downstream Guwahati is around 40,000 cumecs and at Bahadurabad in Bangladesh is 50,000 cumecs.

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- Similarly, during the lean season, flows at the mentioned locations read 400 cumecs, 4000 cumecs, and 5000 cumecs respectively.

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- **Implication** - The above data implies that the Brahmaputra gets fatter and mightier as it flows further downstream.

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- This is also because of the contributions of various tributaries like Dibang, Lohit, Subansiri, Manas, Sankosh, and Teesta.

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Can water diversion affect sediment flow?

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- Currently downstream Brahmaputra carries a huge sediment load on its run towards the sea.

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- River volume in the Yarlung River is not sufficient to generate and transport large sediment load.

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- Notably, the annual suspended sediment load near the Arunachal border in Tibet is around 30 million metric tonnes.

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- This is miniscule when compared to 735 million metric tonnes at Bahadurabad in Bangladesh.

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- Therefore, the large sediment load is created only in the downstream region in India.

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What is the way forward?

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- In the case of Brahmaputra, initial evidence suggests that Chinese diversions can't have a substantial impact on the Indian and Bangladeshi drainage networks.

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- It should be understood that structural interventions does not always reduce downstream flows.

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Source: Business Line

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