

## A Raging Hydro-politics: An overview of India-China friction over Brahmaputra

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### Abstract

Millions of people in China and India rely on the Brahmaputra River for their daily necessities, but it also poses a constant concern. The lack of a water-sharing agreement between upper riparian nation China and lower riparian nations like India, combined with severe water stress due to climate change, has led to China's attempts to assert control over the river, which is perceived as a threat to India. This situation has the potential to escalate into a future water conflict between the riparian nations. Instead of promoting regional cooperation, the Brahmaputra River has become a problem that must be dealt with.

**Keywords:** Hydro-politics, India, China, Brahmaputra River Basin,

### Introduction

The Brahmaputra is one of the biggest rivers in South Asia. It is ranked as the ninth-largest river in the world by discharge volume and the fifteenth-longest river overall. It travels 2,900 kilometers (1,800 miles) from its source in the Himalayas to the point where it converges with the Ganges River when the combined waters of the two rivers pour into the Bay of Bengal. With a total basin area of 580,000 sq. miles, the Brahmaputra River basin flows through the Tibet Autonomous Region of China (50 per cent), Bhutan (7 per cent), the Indian state of Arunachal Pradesh and Assam (36 per cent), Bangladesh (7 Per cent). (See Fig. 1). In India, the Brahmaputra River's drainage basin covers approximately 195,000 square kilometers or 6 per cent of the total land area.<sup>1</sup> According to research by IIT Roorkee, the Brahmaputra River gets around 22 major tributaries in Tibet, 33 significant tributaries in India, and 3 major tributaries in Bangladesh during the course of its whole length.

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<sup>1</sup> FAO Aquastat. 2011. Transboundary River Basin Overview – GangesBrahmaputra-Meghna. Available at <https://www.fao.org/3/CA2138EN/ca2138en.pdf>.

**Fig 1: Brahmaputra River**

**Source:** "[File: Yarlung Tsangpo map.png](#)" by Background layer attributed to DEMIS Mapservier, map created by Shannon1 is licensed under [CC BY-SA 4.0](#). [https://upload.wikimedia.org/wikipedia/commons/e/e3/Yarlung\\_Tsangpo\\_map.png](https://upload.wikimedia.org/wikipedia/commons/e/e3/Yarlung_Tsangpo_map.png)

There is a lot of potential for hydropower in the Brahmaputra basin. The basin has a hydro capacity of 66,065 MW. A total of 5292 MW of installed capacity is being built as of January 8, 2013, and 2120 MW of that capacity is now operational. Only 11.33 per cent of the potential has been determined. Consequently, the basin's hydroelectric potential is still mostly untapped.

The river serves as an important interior waterway throughout the majority of its length. Millions of people living along the Brahmaputra benefit significantly from the ecological, cultural, and economic services provided by the Brahmaputra basin. However, a large part of the Brahmaputra is in Tibet which is a "water tower of Asia". Instead of enormous hydro potential, China is under great water stress.

### **China and Water Stress**

China can print money but can not print water. It does not have any feasible replacement. Climate change has worsened the water situation in China. The Climate Change Performance Index (CCPI) experts note that the government's strategies are focused on the medium-term goal

of peaking carbon and its long-term policies are not concrete enough. Climate change is having a significant impact on water resources in China. Rising temperatures and changing precipitation patterns are leading to reduced water availability in many regions of China, particularly in northern and northwestern areas, where water is already scarce. As per NASA GRACE satellites data, “the North China Plain’s groundwater reserves are even more overdrawn”.<sup>2</sup> Groundwater levels in this region have dropped each year, which has led to the collapse of natural subterranean water storage aquifers. In addition, the volume of water in the area's lakes, rivers, and aquifers has been steadily declining in the most densely populated part of China, i.e. the region north of the Yangtze River, which stretches from eastern Sichuan to southern Jilin and is habitat to a significant part of China’s population.

Climate change is also leading to decreased water quality in many parts of China, as melting glaciers and changes in precipitation patterns can cause increased sedimentation and decreased water clarity, affecting both drinking water supplies and aquatic ecosystems. Qualitatively, China's sizable amount of water is unsuitable for human consumption. For instance, “a 2018 analysis of surface water by *China’s Ministry of Ecology and Environment* found that although the quality had improved from previous years, 19 percent was still classified as unfit for human consumption and roughly seven percent was unfit for any use at all.

Moreover, China's rapidly growing population and economy are putting additional strain on its water resources, which are being depleted faster than they can be replenished. The growing population gives impetus to intense water demand. It has been projected that by 2030, China’s water demand will surpass the current demand. Echoing the water scarcity concern, nearly half of the country's population resides in the north, which lacks sufficient water. On the other hand, the south, with more than half of the country's population, is water-rich.

As “Asia’s water tower”, China's policies concerning transboundary rivers have the potential to impact several downstream countries and communities. China's 16 primary transboundary rivers provide water to almost 3 billion people residing in 14 Asian countries, which is equivalent to half of the world's population.<sup>3</sup> There is little doubt that China's dominance over water on the Asian continent is concerning. For decades, it will have an impact on the region's politics and security. China has long been warned about the dangers of water scarcity. China possesses around 7 per cent of the global freshwater and about 20 per cent of the global population. In 2005, then-premier Wen JiaBao identified water shortage as a threat to “the very survival of the Chinese nation”. Underling the water stress, China is manipulating the Brahmaputra basin by diverting its waters through the building of high dams.

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<sup>2</sup> Ibid.

<sup>3</sup> Zhifei Li and Fengshi Wu, *China’s Shared Water Resources: Geopolitics, Domestic Institutions and Global Governance*, available at

<https://deliverypdf.ssrn.com/delivery.php?ID=370115027092010118112095021066085094103033031041027010022025005096093117026115125067057030039061008116026027090125030065115093049074003041085022123119068066016081090071022077118028105068090073103072114027099023111085022093088107093019023068106083017024&EXT=pdf&INDEX=TRUE>

### How China controls the Brahmaputra

Echoing the words of Mikhail Gorbachev, “Water, like religion and ideology, has the power to move millions of people. Since the very birth of human civilization, people have moved to settle close to it. People move when there is too little of it. People move when there is too much of it. People journey down it. People write, sing, and dance about it. People fight over it and all people, everywhere and every day, need it”.<sup>4</sup>

The importance of water is rightly described by ‘Sun Tzu’ i.e. “The nature of water is such that it avoids heights and hastens to the lowlands. When a dam is broken, the water cascades with irresistible force. Now the shape of an army resembles water. Take advantage of the enemy’s unpreparedness; attack him when he does not expect it; avoid his strength and strike his emptiness, and like water, none can oppose you”. China has firsthand experience with the significance of water. For instance, “in an attempt to halt advancing Japanese troops during World War II, Chang Kai-Shek, commander of the Chinese Nationalist Army, destroyed a dike along the Yellow River flooding thousands of miles of farmland, killing an estimated 800,000 Chinese, and displacing nearly 4 million”.<sup>5</sup>

Moreover, the water map of Asia is centered on China. China is the starting point of rivers that run to 18 countries further downstream as a result of its conquest of the expansive Xinjiang province and the water-rich Tibetan Plateau. The region is often described as “the third pole”. The plateau includes the Indus, Mekong, Yangtze, Yellow, Irrawaddy, Brahmaputra, and other rivers. By some estimates, “two billion people or more in some 18 countries depend upon a dozen or so major rivers, most of which emanate from the Tibetan plateau in the southwest”.<sup>6</sup> China is constructing a massive upstream infrastructure that will enable it to create dams and barrages to control water. There are currently more major dams in China than there are in the rest of the globe combined. Since immediately after Mao Zedong's ascent to authority in 1949, the PRC has occupied and used force to maintain control of the plateau. In 1952, Mao is said to have observed that the South has lots of water, the North has less. If it were possible, borrowing would be good.

A major project at Metog, or Motuo in Chinese, on the Brahmaputra, is one of its proposed new dams which will have a potential for producing nearly equal to the “Three Gorges Dam” and will be built close to the contentious, heavily guarded border with India.<sup>7</sup> Additionally, the “*South-to-North Water Diversion (SNWD) Project*” is one of the main solutions for China's water problems. As Mao's reply indicated that the vast majority of exploitable water sources are in the

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<sup>4</sup>Kreamer, D.K. (2012), Water and International Security. Journal of Contemporary Water Research & Education, 149: 1-3. <https://doi.org/10.1111/j.1936-704X.2012.03121.x>.

<sup>5</sup> Eugene K. Chow. 2017. China is Weaponizing Water. Available at <https://nationalinterest.org/blog/the-buzz/china-weaponizing-water-22053>

<sup>6</sup> Dr. Uttam Kumar Sinha. 2016. *Riverine neighbourhood*. MP-IDSA, New Delhi.

<sup>7</sup> Brahma Chellaney. 2019. China is weaponizing water and worsening droughts in Asia. Available at <https://asia.nikkei.com/Opinion/China-is-weaponizing-water-and-worsening-droughts-in-Asia>.

south where there is the least 40 per cent of the country's overall water demands. The Yangtze River basin's water will be diverted northward along three channels by the SNWD, a system of future canals, reservoirs, and tunnels, the longest of which will be approximately 1,000 miles long.

The SNWD Project is a massive infrastructure project in China that aims to transfer water from southern China to the dry northern regions. The project consists of three main routes: the eastern, middle, and western routes (See Fig. 2). The Eastern Route, which began operations in 2013, diverts water from the Yangtze River to the cities of Tianjin and Beijing. The Middle Route, which started operating in 2014, transfers water from the Danjiangkou Reservoir in central China to the cities of Beijing and Tianjin, as well as several other cities in the northern region. The Western Route is still under construction and aims to transfer water from the upper reaches of the Yangtze River to the arid northwestern regions of China. The Project is intended to alleviate water scarcity in the northern regions of China, where water resources are scarce, and to support economic development and improve the living standards of the people in these areas. The project has faced various technical and environmental challenges, including water quality, cost, and social displacement issues. However, on the other hand, this project will create a huge water stress in north eastern India.

**Fig. 2: Three Routes of the South-North Water Transfer Project**



Source: Brookings Institution<sup>8</sup>

<sup>8</sup> Moore, Scott. 2013. Issue Brief: Water Resource Issues, Policy and Politics in China. Brookings Institution. Available at <https://www.brookings.edu/articles/issue-brief-water-resource-issues-policy-and-politics-in-china/>.

China has openly utilised water as an offensive mechanism in its diplomatic stance. Beijing is currently involved in another power struggle, this time over water in the Tibet Autonomous Region (TAR). TAR, a plateau located in the western part of China, is home to several major rivers such as Brahmaputra, Indus, Mekong, Salween and others. These rivers and their tributaries provide water and other resources to millions of people in the region, and play a crucial role in the economies of the countries they flow through. The water crisis in China is severe. On the surface, the PRC's vast damming of major transnational rivers is a sinister drive by Beijing to amplify its power and influence across Asia and take control of water, energy, and agriculture.

China is robbing the Brahmaputra river basin of its flow through its hydroelectric project, which has resulted in excessive electricity production from the river itself. As a result, the river and its environment in countries downstream are being killed. China is unafraid to utilise dams to store river waters as reserves that can be used as leverage to resolve geopolitical conflicts without exchanging gunfire when the situation calls for it. They believe in Sun Tzu's saying "subduing the enemy without fighting is the acme of skill". Although dams damage people living downstream by altering the natural cycle of floods and droughts, which negatively impacts the ecosystem, China uses water as an exclusive commodity. The maneuvering on Brahmaputra waters has huge implications for India's water security.

### **Impact on India's Water Security**

Water stress in India and China's hegemony over Brahmaputra is creating concern over India's water security. Water security issues in the region have worsened due to an increase in demand, excessive usage, and climate change. A report by McKinsey in 2009 predicted that water demand in India will surge by almost 1.5 trillion cubic meters by 2030. In contrast, India's current water supply stands at approximately 740 billion cubic meters. Consequently, by 2030, most of India's river basins may encounter significant shortages unless decisive action is taken.<sup>9</sup> Further, the disparity between water supply and demand is expected to widen as a result of climate change. However, China's unilateral actions over Brahmaputra river is further adding to the concern of water stress in northern India.

The biggest threat to India right now is what China is doing with the Brahmaputra River. The issue where friction exists across borders is the infrastructure on water bodies. In the past, "India has blamed sudden discharges from Chinese dams for several flash floods including one that caused an estimated \$30 million in damage and left 50,000 homeless in northeast India".<sup>10</sup> China was often blamed by India for violating the terms of agreements that were made to

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<sup>9</sup> As quoted in ('the McKinsey Report') by IDSA, Institute of Defence Studies and Analyses, New Delhi, 'Water Security for India: The External Dynamics,' IDSA Task Force Report, September, 2010, ISBN# 81-86019-83-9

<sup>10</sup> Brahma Chellaney. 2019. China is weaponizing water and worsening droughts in Asia. available at <https://asia.nikkei.com/Opinion/China-is-weaponizing-water-and-worsening-droughts-in-Asia>.

exchange hydrological data. China always stated that the hydrological stations were undergoing maintenance. Even if the crisis was resolved diplomatically, future tension and maybe confrontation seem possible.

The weaponization of water was made clear to India in 2017 when, during “the Doklam crisis”, China was not ready to provide hydrological data which caused flooding in the Brahmaputra River in Assam. This unwillingness to exchange information went against two contractual agreements between the two nations. China, incidentally, refused to share this hydrological information with India but did with Bangladesh. It appears to be intended to weaken India's stance in the area by distorting the loyalties of the impacted nations that depend on the Brahmaputra.

In 2018, it was noted that “one of the Brahmaputra's tributaries, the Siang River, had water that changed color shortly before it entered India. The Chinese falsely asserted that an earthquake in Tibet had caused water contamination, but the water in the Siang had already become contaminated”.<sup>11</sup> Given its recent unilateral aggressive activities in the South China Sea and its flotilla of man made islands, the notion of China redirecting segments of the Brahmaputra towards its mainland no longer seems preposterous. China is already constructing infrastructure in the Lhasa River, one of the tributaries of the Brahmaputra, which turns it into multiple artificial lakes, posing a significant concern to the Brahmaputra.

India is concerned that China may divert river resources away from it, causing irreparable damage to the northeastern plains of India. That eventuality might be avoided by a water treaty, but Beijing might not be willing to give up control of the faucet. Both countries have “a Memorandum of Understanding upon the provision of Hydrological Information on the River Brahmaputra / Yaluzangbu, a Memorandum of Understanding on Hydrological Data Sharing on River Sutlej / LangqenZangbo, and Expert Level Mechanism (ELM)”.<sup>12</sup> Moreover, India and China have consistently engaged in discussions on collaborating regarding water resources. In Ahmedabad, the 12th meeting of the India-China Expert Level Mechanism (ELM) regarding Trans-border Rivers occurred on the 12th and 13th of June 2019. During the meeting, in pursuance to the MoU for provision of hydrological information of the Brahmaputra River, both sides signed the “Implementation plan on the provision of hydrological information of Brahmaputra River in flood season”.<sup>13</sup> A similar MoU for provision of hydrological information of the Sutlej River is also in force. In general, China and India address transboundary river issues

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<sup>11</sup>PrabinKalita. 2017. Arunachal river turns black, officials blame China. *The Times of India*. Available at <https://timesofindia.indiatimes.com/city/itanagar/arunachal-river-turns-black-officials-blame-china/articleshow/61844165.cms>

<sup>12</sup>Ministry of Jal Shakti. India-China Cooperation. Government of India. Available at <http://jalshakti-dowr.gov.in/international-cooperation/bilateral-cooperation-with-neighbouring-countries/india-china-cooperation>.

<sup>13</sup>Ministry of External Affairs. India-China Bilateral relation. Government of India. Available at <https://mea.gov.in/Portal/ForeignRelation/ind-china-new.pdf>

under the aegis of the India-China ELM. In May 2015, Beijing hosted the ELM's ninth meeting.<sup>14</sup>

Around 260 river basins worldwide serve nearly 40 per cent of the global population, with roughly 145 sharing agreements or treaties governing the distribution of these river waters. Despite this, China has not entered into any water sharing agreements with its neighboring countries.<sup>15</sup> Moreover, China also opposed “the 1997 UN Convention on non-navigational uses” of international water courses. This global convention aims to establish standards and regulations, which China rejects. China's strategies for exploiting, controlling, and diverting its water resources are highly non-transparent and confidential, causing significant concern for all of its downstream neighboring countries.

However, there is no particular treaty related to the India-China water issues. It has been noted that “the dramatic increase in dam-building activity has had an outsized environmental impact and stoked fears in downstream nations. They can unleash their fury during earthquakes, accidents or by intentional destruction can easily be used against India during the war,” said Milap Chandra Sharma, a glaciologist at Jawaharlal Nehru University in New Delhi.<sup>16</sup>

## Conclusion

The extremely political issue of "who gets how much water, how and why" has an impact on riparian behaviour. China and India play an important role in the hydropolitics of the region because of their hydrological position and reliance on the Himalayan rivers. According to Uttam Kumar Sinha, a Senior fellow at MP-IDSA, New Delhi, China's upper riparian status fuels its hydro-arrogance, hydro-egoism, and hydro-aggression. China is the dominant water power in Asia and disregards the concerns and requirements of the countries downstream. The Brahmaputra is one of these Himalayan rivers that has caused India worry. Furthermore, China has significantly greater water security than India owing to the Brahmaputra River's territorial source. In reality, China is arguably the riparian nation with the greatest degree of independence. Due to its hydrological location and encouragement of large-scale, expensive water projects, China has a lot of leeway in determining the bigger political dynamics with India. The chances for a rules-based order in Asia may be lost forever if China does not change its current strategy. Thus, on the one hand, From an extended hydrological point of view, hydro diplomacy will be a crucial part of India's neighbourhood strategy, which cannot exclude China. It is difficult to

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<sup>14</sup>Rajya Sabha. 2015. Q. No. 52 on Dam on Brahmaputra By China. Government of India. Available at [https://mea.gov.in/rajya-sabha.htm?dtl/26106/Q\\_NO52\\_DAM\\_ON\\_BRAHMAPUTRA\\_BY\\_CHINA](https://mea.gov.in/rajya-sabha.htm?dtl/26106/Q_NO52_DAM_ON_BRAHMAPUTRA_BY_CHINA).

<sup>15</sup> Major Gen. G. D. Baxi. 2011. China as Hydro- Hegemon : The Onset of Water Wars. Vivekananda International Foundation, New Delhi. Available at <https://www.vifindia.org/article/2011/july/06/China-as-Hydro-Hegemon-The-Onset-of-Water-Wars#:~:text=%20China%20is%20the%20natural%20hydro-hegemon%20of%20Asia.,sometimes%20around%20the%20middle%20point%20of%20this%20century>.

<sup>16</sup>Brahma Chellaney. 2019. China is weaponizing water and worsening droughts in Asia. Available at <https://asia.nikkei.com/Opinion/China-is-weaponizing-water-and-worsening-droughts-in-Asia>.



ignore the fact that the shared rivers originate in the Himalayan watershed, which serves as a hydrological stretch of land, and the competitive drive of the water between the two.

In a nutshell, China has consistently demonstrated a disinclination to engage in any official agreement with its adjacent nations concerning transboundary rivers. This lack of formal arrangements provides China with the flexibility to utilize water as a bargaining chip or as leverage. Therefore, it is imperative to initiate regular dialogues with China on matters relating to water, as well as to raise hydrological apprehensions during bilateral meetings.