

# Trans-boundary Water Management: A Study of Water Politics between India and China

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## ABSTRACT

South Asia is increasingly becoming a water-stressed region. With the growing population; industrial, agricultural and domestic uses; melting glaciers; and with environmental degradation, resultantly, the rivers are also becoming a bone of contention between countries and communities in South Asia. The issue of utilization of water for hydropower generation and commercial irrigation is a matter of great concern and causing conflicts. At the broadest level, the management and utilisation of water resources in the riparian regions of South Asia is pivotal to the geopolitics of the region. The study focuses entirely on the political aspect of water disputes and water politics between India and China in the context of international relations. The study also examines the areas of conflict and cooperation in India's riparian relations with its neighbour China.

### Transboundary River Basins in South Asia

Most of the South Asian river basins originate in the Himalayas, which support rich ecosystems and irrigate millions of hectares of fields, thus supporting some of the highest populated densities in the world. South Asia has two major river systems in the world, the Indus River System and the Ganges-Brahmaputra-Meghna river system. These two major river systems have four main river basins; the Indus Basin, the Ganges Basin, the Brahmaputra Basin and the Meghna Basin. Here it should be noted that South Asia has been taken into account, with the exception of Sri Lanka and the Maldives, the two island states that do not have transboundary rivers flowing through their territory. The transboundary rivers of the above two major river systems flow through eight countries, including six from South Asia.

Table: 1. Catchment Area of Major South Asian River Basins

Basin Name	Total basin area (km <sup>2</sup> )	Countries Included	Area of Country in Basin (km <sup>2</sup> )	Area of Country in Basin (Percentage)
Indus	1,120,000	Pakistan	520,000	47
		India	440,000	39
		China	88,000	8
		Afghanistan	72,000	6
Ganges-Brahmaputra-Meghna	1,712,700	India	1,102,000	64
		China	304,400	18
		Nepal	147,500	8
		Bangladesh	120,400	7
		Bhutan	38,400	3

Source: Irrigation in Southern and Eastern Asia in figures – AQUASTAT Survey – 2011.<sup>1</sup>

## INTRODUCTION

The South Asian region has been under considerable pressure from a growing population and the absence of carefully crafted integrated water resource development strategies. This region is home to nearly 1.5 billion people, and nearly half of them depend on the large river systems. Several of these river systems flow across national

<sup>1</sup> Karen Frenken, Irrigation in Southern and Eastern Asia in figures, *FAO AQUASTAT Survey* (2011): p.38.

boundaries and have been the source of interstate conflicts. Climate change has also brought serious risks to the access of water resources in South Asia. In particular, the impact of climate change on glaciers will directly affect water flow in many of the major international rivers in this region. In the Himalayan River systems, due to the increased rate of melting of the glacial area, the water flow in spring has increased and water flow during the remaining seasons – especially during summer when it is most needed – has decreased. Since the 1960s, most glaciers in the Himalayas are retreating, shrinking in area, and losing mass consistent with rising temperatures and decreasing precipitation. On an average, Himalayan glaciers shrunk 0.36 percent in area per year from 1960 to 2010.<sup>2</sup>

The Himalayas are called the “water tower” of South Asia. Most of India's northern rivers originate in Tibet. China annexed Tibet in 1950 and thereby gained control over the Himalayan glaciers of the region where some of the world's largest rivers originate and flow to South and Southeast Asia. China has strengthened its political and economic control over Tibet where India and China have a complex, unresolved boundary dispute. Thus, water has assumed higher priority in Sino-Indian relations in recent years. There are widespread fears in India that China's diversion of waters of the Yarlung-Tsangpo (the upper stream of the Brahmaputra River), to meet high demand in its arid north, will cause hydrological imbalance in the northeast part of India and shortage in Bangladesh, which in turn will impact riparian relations.<sup>3</sup>

India has long standing water disputes in South Asia with its neighbours over the distribution of water resources, particularly rivers. These disputes are gradually increasing their intensities; as the demand for water is increasing. There is the possibility that if current demographic, economic and environmental challenges may precede then this tension may lead to crisis like situation and probably to wars between India and its neighbours, thus threatening regional stability.

#### **Water Politics between India and China**

Given the distances that the Himalayan Rivers traverse in their respective territories, China and India are critical players in the hydro-politics of the region. India is simultaneously an upper, middle, and lower riparian. China's hydrological position, on the other hand, is one of complete upper riparian supremacy. India's middle riparian position, increases its dependency (and thus water insecure) on the headwaters of the rivers such as Indus, Sutlej and Brahmaputra which originate in the Tibetan plateau. China is equally water insecure, but its insecurity relates to the disproportionate availability or uneven distribution of waters within its territory, the majority of which is in the south (Tibet Autonomous Region), with the north and west excessively water stressed. In terms of per capita water availability, China ranks amongst the world lowest. On the other hand, China has no bilateral riparian treaties,<sup>4</sup> and is, therefore, not bound by any water utilisation agreement with its neighbours. In fact, China was one of the three countries that did not approve of ‘the 1997 UN Convention on the Law of the Non-Navigational Uses of International Waterways’. So it is marked that China would tend to take a strategic view of the water it commands and, given its hydrological position, factor water as a tool, leverage, and a bargaining instrument in framing its regional policies.

India and China has had a series of bilateral dialogues but the issue of water never came up until recently. Now, the issues causing tension between China and India extend beyond border disputes. Water is becoming a key security issue in India-China relations, paving the way for a new era of hostility. Although the world as a whole has abundant freshwater resources, spatial variability and seasonal freshwater scarcity, as well as climate change, are emerging as a severe threat to many parts of the world. Perhaps the highest probable point of water conflict could be in the Himalayan region between the two most thirsty and populous countries - India and China, which share many transboundary rivers, including the most contentious Brahmaputra River. The Brahmaputra River, or the Yarlung Tsangpo River as it is known in China, is one of the most challenging trans-border rivers that India and China share. China is the upper riparian state of all rivers that cross national borders with India.<sup>5</sup> With an expanding population and growing demand for water from agriculture and industry in both India and China, competition for shared water resources would intensify in their transboundary rivers, especially the Brahmaputra. Without an effective working mechanism between the two countries, water disputes could become a serious challenge to India-China relations.

<sup>2</sup> Neha Jain, “Himalayan glaciers are wasting away, threatening mountain communities,” *Mongabay*, May 14, 2018, <https://india.mongabay.com/2018/05/himalayan-glaciers-are-wasting-away-threatening-mountain-communities/>

<sup>3</sup> IDSA Task Force Report, “Water Security for India: The External Dynamics,” (New Delhi: Institute for Defence Studies and Analyses, 2010), p.29.

<sup>4</sup> Uttam Kumar Sinha, *Riverine Neighbourhood: Hydro-politics in South Asia* (New Delhi: Pentagon Press, 2016), pp-62-63.

<sup>5</sup> Hongzhou Zhang, “Sino-Indian water disputes: The coming water wars?,” *Wiley Interdisciplinary Reviews: Water*, Vol.3, no. 2, (2016), p.156.

India and China share five major rivers, but not just between them as shown in Table 1. China, India and Pakistan share the Indus River and Sutlej River. The Brahmaputra River is shared between India, China, Bangladesh and Bhutan. China, Nepal and India share the Kosi and Ghaghara rivers. It is clear that India and China do not uniquely share any of the rivers; all transboundary rivers of India and China are also shared with other neighbours.

**Table 2: Major Transboundary Rivers between India and China**

Name	Countries
Indus (Shiquan) River	China, India, Pakistan
Brahmaputra (YarlungZangbo) River	China, India, Bangladesh, and Bhutan
Sutlej (LangqenZangbo) River	China, India, Pakistan
Kosi (Arun) River	China, Nepal, and India
Ghaghara (Kongque) River	China, Nepal, and India

Source: Ministry of Jal Shakti, Government of India<sup>6</sup>

China happens to be the upper riparian state for all these rivers. India is a middle riparian country in the rivers of Brahmaputra, Indus, and Sutlej, but it is a lower riparian in the other two river systems. Among the shared rivers, most tensions exist along the Brahmaputra River. This is due to three main reasons. First, while China is the upper riparian state of all four transboundary rivers, it only occupies the significant parts of the Brahmaputra river. China has more than 50 percent of the Brahmaputra River Basin area. As a result, the potential impact of China's activities on the Brahmaputra River is much greater than other rivers. Second, the Brahmaputra River is of great importance to both India and China. For India, it accounts almost 30 percent of freshwater resources and about 40 percent of the total hydropower potential of the country.<sup>7</sup> In the case of China, while at the national level, the role of the Brahmaputra River in the country's total freshwater supply is very limited but it is of great importance to Tibet. The Brahmaputra River is considered as the birthplace of Tibetan civilization and plays a crucial role in the agriculture and energy sectors of Tibet. Third, the Brahmaputra River is related to border disputes between India and China. The two countries have contested claims in the eastern Himalayas, a triangular intersection between India, China and Bhutan from the west to the Brahmaputra River in the east, largely along the crest of the Himalayas. The disputed region is called southern Tibet in China and Arunachal Pradesh State in India, which now controls the region. This region occupies about an area of 90,000 km<sup>2</sup> and has a population of more than one million people.<sup>8</sup>

The Sino-Indian War of 1962 over a disputed Himalayan border left a legacy of suspicion and tense relations between the two countries. The border dispute remains unsolved even today with China claiming India's north-eastern state of Arunachal Pradesh bordering southern Tibet. India, too, claims that China is occupying about 15,000 square miles of the Himalayan plateau-Aksai Chin. Even after a series of bi-lateral dialogues, the border issue has not been resolved.

Both India and China's economic growth and development depends on the availability of water. Both the Indian and Chinese economies continue to grow at a frantic pace and both countries face acute water shortage which soon can be comparable to the kind of water scarcity prevalent in the Middle East in terms of per capita availability. The expansion of irrigated farming, growing industries and rising demands of the middle class calls for both countries to ensure a stable source of water supply. As such, China has been engaged in major inter-river water transfer projects on the Tibetan plateau, the world's largest freshwater repository after the polar ice-caps. However, these activities are of great concern to India and other lower riparian states such as Bangladesh and Pakistan. Tibet is the source of major Indian rivers and any water transfer or diversion projects on the Tibetan plateau would reduce international river flows into the lower riparian countries. India depends on rivers that originate in China for one third of its renewable water supplies. China is expected to face 25 per cent water shortfall by 2030. With rising power shortage and international pressure to reduce carbon emission, China is now focusing on generating hydro power that

<sup>6</sup> "Bilateral Cooperation with Neighbouring Countries: India-China Cooperation". Ministry of Jal Shakti, Department of Water Resources - Government of India, <http://jalshakti-dowr.gov.in/international-cooperation/bilateral-cooperation-with-neighbouring-countries/india-china-cooperation>

<sup>7</sup> Hongzhou Zhang, "Sino-Indian water disputes: The coming water wars?." *Wiley Interdisciplinary Reviews: Water*, Vol.3, no. 2, (2016), p.156.

<sup>8</sup> Hongzhou Zhang and Mingjiang Li, "Sino-Indian border disputes," *ISPI Analysis*, No. 181, (June 2013): p.2.

requires building dams. As such Brahmaputra and other rivers originating in its territory could become pawns in the political game.

As such, international water sharing treaties will play a key role in addressing the threat of a water war. India is an upper riparian state with respect to Pakistan and Bangladesh and a lower riparian to China, Nepal and Bhutan. Therefore, India needs to recognise its geostrategic location and aim to effectively pursue new trans-boundary riparian treaties while reworking on the existing treaties. "The silent 'water war' is now finally becoming a reality and India should be ready to face it. The water conflict is also slowly adding a deeper layer of intricacy to the border dispute. In order to prevent the conflict from escalating, the Indian government needs to diplomatically take up the issue with the Chinese government and push for a water sharing treaty".<sup>9</sup>

For years, Indian media and security experts as well as some international observers have been warning of water wars between the two countries. For example, in 2013 Christopher Mark wrote an article entitled "Water Wars: The Brahmaputra River and Sino-Indian Relations", published by the Naval War College. In this article, Mark emphasizes that "China's commitment to construct ever-larger upriver dams reflects a zero-sum mentality on water use that has the potential to bring it directly into conflict with India".<sup>10</sup> The most influential figure in propagating the narrative of 'water war' between India and China is Dr. Brahma Chellaney, the author of the book "Water, Peace, and War: Confronting the Global Water Crisis" and the award-winning book "Water: Asia's New Battleground". In the latter, he argues that 'the battles of yesterday' were fought over land, 'those of today' are over energy, but the battles of tomorrow may be over water, most likely between China and India.<sup>11</sup>

At present, the Chinese government is not a party to any of the world's major water norms, but provides its riparian neighbours, including Mongolia, Russia and Kazakhstan, with hydrological data through bilateral agreements. For the most part, China has provided annual hydrological data to help the Indian authorities to formulate flood forecasts. For the Chinese authorities, these activities help to provide adequate warning and minimize potentially adverse environmental impacts caused by China's upstream damming activities.

The Indian government recognizes the politicization of water issues. "Rivers, in effect, can no longer be seen as a soft component of a country's foreign policy. Rather they are intricately linked to developmental goals and domestic needs and thus impact bilateral relations".<sup>12</sup> India has felt its regional influence being challenged by unilateral moves of China to develop hydropower projects on the upstream of the GBM. In fact, the current Indian Prime Minister, Narendra Modi, has taken a tough stance on the issue of water sharing with China by abandoning the position of his predecessor, Dr. Manmohan Singh, which involved full acceptance of China's claims of non-strategic water use. The Modi administration wondered whether China's damming activities are blocking upstream water. Moreover, the Modi government has demanded "all-year-round" hydrological data, a move that would allow India to monitor China's plans and management of the GBM from the upstream. He has then challenged Beijing's claim that it had the right to exploit resources in its territory. However, this strategy did not receive Modi much favour, and nor has it lasted long.<sup>13</sup> In 2017, Indian and Chinese troops were stuck in a 73-day confrontation at Doklam plateau. Foreign relations between the two countries worsened with increased military frictions, which prompted China to stop its sharing of strategic river data. Thus, China has effectively used hydrological data as a weapon to counter the military threat posed by India, while at the same time also exerting pressure on New Delhi to reconsider its foreign policy position towards China.<sup>14</sup>

## CONCLUSION

Water-related conflicts have a long history and will continue to be a global and regional problem. As water scarcity in India and China worsens with rapid economic development and population expansion, the competition over

<sup>9</sup> Nazia Hussain, "Water: the new dimension in India-China relations," Centre for Development and Peace Studies, accessed March 05, 2018, <http://cdpsindia.org/pdf/Water%20war.pdf>.

<sup>10</sup> Mark Christopher, "Water wars: The Brahmaputra River and Sino-Indian Relations," Case study. (Newport, Rhode Island: United States Naval War College, Center on Irregular Warfare and Armed Groups, 2013): p.22.

<sup>11</sup> Brahma Chellaney, *Water: Asia's New Battleground* (Washington, D.C.: Georgetown University Press, 2011), p.153.

<sup>12</sup> IDSA Task Force Report, "Water Security for India: The External Dynamics," (New Delhi: Institute for Defence Studies and Analyses, 2010), p.5.

<sup>13</sup> Lei Xie, Yanbing Zhang and Jagannath P. Panda, "Mismatched Diplomacy: China-India Water Relations over the Ganges-Brahmaputra-Meghna River Basin," *Journal of Contemporary China*, 27, no. 109 (2017): pp.11-13.

<sup>14</sup> Zhao Yusha, "China has to halt river data sharing as India infringes on sovereignty: expert," *Global Times*, August 20, 2017.

shared water resources in Transboundary Rivers, especially Brahmaputra, will intensify. Without an effective working mechanism between the two countries and with long-standing border disputes, water disputes could become a serious challenge to Indo-China relations. In summing up, it can be said that the sharing of transboundary river waters in South Asia is one of the main determinants of the behaviours and foreign policies of co-riparian states, and it has significantly contributed to the determining of bilateral relations of these co-riparian countries.