

Non Traditional Security Digest

Navigating the Rivers: India-Bangladesh
Hydro Relationship

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Navigating the Rivers: India-Bangladesh Hydro Relationship

Introduction

Water is both a catalyst for cooperation and competition. Interstate hydro-arrangements often present a complex challenge to balance just sharing and ensure domestic water security.

This edition of the Non-Traditional Security Centre Digest aims to explore the hydro-relationship between India and Bangladesh.

The two countries share 54 common rivers, including the Brahmaputra, Ganga and Barak (Map 1). These rivers are a critical source for sustenance in both countries and their effective management continues to remain on the bilateral [agenda](#).

Water Governance

For the successful governance of the shared water resources and to facilitate communication and coordination on water-related issues, the two countries have developed some mechanisms. These include a rivers commission, technical committees and bilateral agreements. Despite these mechanisms, disputes over water allocation, use, and management of

the rivers also exist. The digest will cover both these dimensions.

Joint Rivers Commission

Established in 1972, the India-Bangladesh Joint Rivers Commission (JRC) aims to promote collaboration in the creation and administration of shared river systems. It has meetings to review water resource-related issues and implement projects for flood control, irrigation, and hydropower production. The JRC also constitutes committees of experts focussed on issues such as mitigating flood damages and sharing of Ganga water at Farakka.

The JRC recently held its [38th Ministerial level meeting](#) in New Delhi on 25 August 2022. Gajendra Singh Shekhawat, Union Minister for Jal Shakti, led the Indian delegation and Mr. Zaheed Farooque, State Minister for Water Resources, led the Bangladesh delegation.

The meeting was particularly significant as it was the first ministerial-level gathering in 12 years. The [37th meeting](#) of the JRC was last held in March 2010. During the meeting, the MoU on Interim Water Sharing of the Kushiara River was finalised. They also welcomed the decision to construct an intake well to implement the 2019 MoU on the use of Feni River for drinking water supply in Tripura.



Map 1: India- Bangladesh Transboundary Rivers

Major Water Sharing Agreements

Ganga Water Sharing Treaty 1996

On 12 December 1996, then-Indian Prime Minister HD Deve Gowda and his Bangladesh counterpart, Sheikh Hasina, signed the [Ganga Water Sharing Treaty](#).

Precedent to this, the friendly relationship between the two countries deteriorated when India initiated the Farakka Barrage Project in 1975. This project was aimed at redirecting the waters of the Ganga River into the Bhagirathi-Hooghly River system, with the objective to preserve and maintain the port of Calcutta.

In 1977, [India and Bangladesh](#) made a five-year agreement under which Bangladesh was granted 60 per cent of the water volume at the Farakka Barrage. Additionally, an assurance of 80 per cent water share in scenarios of low flow was included. Subsequently, two MOUs were signed in 1982 and 1985 after the 1977 agreement expired. These MOUs did not contain any guarantee clause but stipulated an equal share when the flow fell below 75 per cent of the standard flow.

Finally, in 1996, the landmark treaty was signed to address Bangladesh's concerns as a lower-riparian and display India's intent as a responsible upper-riparian.

The treaty allows sharing of the Ganga waters at Farakka by ten-day periods from 1st January to the 31st May every year through the formula in Table 1 and an indicative schedule. This allocation is based on the average flow of the river at Farakka subject to the condition that India and Bangladesh each shall receive guaranteed 35,000 cusecs of water in alternate three 10-day periods during the period March 11 to May 10.

It is noteworthy that the indicative schedule used for allocation is based on the 40-year (1949-1988) 10-day average availability of water at Farakka. Table 2 depicts the allocation of water in 2023 according to the schedule in the treaty.

The treaty also required the two countries to formulate a joint committee to oversee implementation and cooperation. The 80th [meeting](#) of the Joint Committee on Sharing of the Ganga Water at Farakka was held on 3 April 2023 in Kolkata.

According to Article XII of the treaty, it remains valid for a period of thirty years and its renewal is subject to mutual consent. With the current term set to expire in 2026, the upcoming renewal of the treaty will only intensify the discourse on water sharing.

Availability at Farakka	Share of India	Share of Bangladesh
70,000 cusecs or less	50%	50%
70,000 cusecs-75,000 cusecs	Balance of flow	35,000 cusecs
75,000 cusecs or more	40,000 cusecs	Balance of flow

[Table 1: Water Sharing Formula](#)

Month/ Date		Total amount of water received in Farakka	According to the Distribution Formula in the Treaty				Received at the Hardinge Bridge by Bangladesh
			Share of Bangladesh at Farakka	Received by Bangladesh at Farakka	Share of India at Farakka	Received by India at Farakka	
January	01-10	1,07,874	67,874	67,874	40,000	40,000	85,316
	11-20	98,543	58,543	58,543	40,000	40,000	70,827
	21-31	1,04,088	64,088	64,088	40,000	40,000	69,660
February	01-10	1,02,160	62,160	62,160	40,000	40,000	67,364
	11-20	97,621	57,621	57,621	40,000	40,000	59,376
	21-28	81,877	41,877	41,877	40,000	40,000	47,891
March	01-10	69,843	34,922	34,922	34,922	34,922	42,372
	11-20	65,064	35,000	35,000	30,064	30,064	41,368
	21-31	69,616	34,616	34,616	35,000	35,000	40,390
April	1-10	77,263	35,000	37,263	40,000	40,000	42,071
	11-20	71,589	35,000	35,000	36,589	36,589	36,960

(In Cusecs)

[Table 2: Information of Water Sharing 2023 \(Translated\)](#)

Kushiyara Water Sharing Agreement

On 6 September 2022, the Ministry of Jal Shakti, India and the Ministry of Water Resources, Bangladesh [signed an MoU](#) for the withdrawal of up to 153 cusecs of water by each country from the Kushiyara river during the dry season (1st November to 31st May) for their water consumption needs.

First such agreement since 1996, it permits the Government of Assam to withdraw the 153 cusecs of water. It aims to benefit river projects in southern Assam and also facilitate irrigation in the Sylhet region of Bangladesh. Both countries will establish a Joint Monitoring Team to oversee and monitor the withdrawal of water by each side.

Feni River's Interim Sharing Agreement

Following the JRC secretary-level meeting in Dhaka in 2019, India and Bangladesh signed the Feni water-sharing agreement during PM Sheikh Hasina's visit to India. The [MoU](#) allows India to withdraw 1.82 cusec of water from the Feni River.

The agreement aims to facilitate the supply of drinking water to the population of Sabroom town in Tripura. During the latest JRC meeting, the decision to construct an intake well was taken in order to implement the MoU. Both sides also fixed the design

and location of the water [intake point](#) on the river.

While the river sharing agreement enhances goodwill, many sceptics from Bangladesh have raised [concerns](#) about the balanced use of water and the impact on Bangladesh's Muhuri-Feni irrigation project.

During PM Hasina's 2019 visit, the Technical Level Committee of JRC was also instructed to expedite the exchange of updated data and information and draft Interim Sharing Agreements for [six rivers](#), namely, Manu, Muhuri, Khowai, Gumti, Dharla, and Dudhkumar.

In an effort to further enhance hydro-connectivity, the [Maitri-Setu Bridge](#) was inaugurated by PM Narendra Modi in 2021. Constructed over the Feni River at Sabroom, the bridge makes Agartala the nearest city to an international sea port in India. It also connects the Chittagong port with Tripura.

Protocol on Inland Water Transit and Trade

The [Protocol on Inland Water Transit and Trade](#) provides for the use of inland waterways for transit and trade between the two countries and to third countries through the territory of the other under mutually agreed terms (Map 2). Under the Protocol, 50:50 cargo sharing by Indian and Bangladeshi vessels is also permitted.

First signed in 1972, the protocol was last renewed in 2015 for a period of five years, with a provision for automatic renewal for an additional five years. Recently, the [Second Addendum](#) to the Protocol (2020) increased the number of Indo Bangladesh Protocol (IBP) routes from 8 to 10 and the Ports of Call to 11 in each country.

In line with the "Act East" policy, the Ministry of Ports, Shipping, and Waterways (MoPSW) has initiated various infrastructure projects on National Waterways-1, the Indo-Bangladesh Protocol route, and NW2, in collaboration with the Inland Waterways Authority of India (IWAI). In March 2022, the MV Lal Bahadur Shastri vessel completed its maiden [voyage](#) carrying foodgrains from Patna to Pandu via Bangladesh. The IWAI is planning to introduce such regular fixed sailings between NW-1 and NW-2. These measures will encourage low-cost transportation and dramatically enhance connectivity with the North Eastern Region.

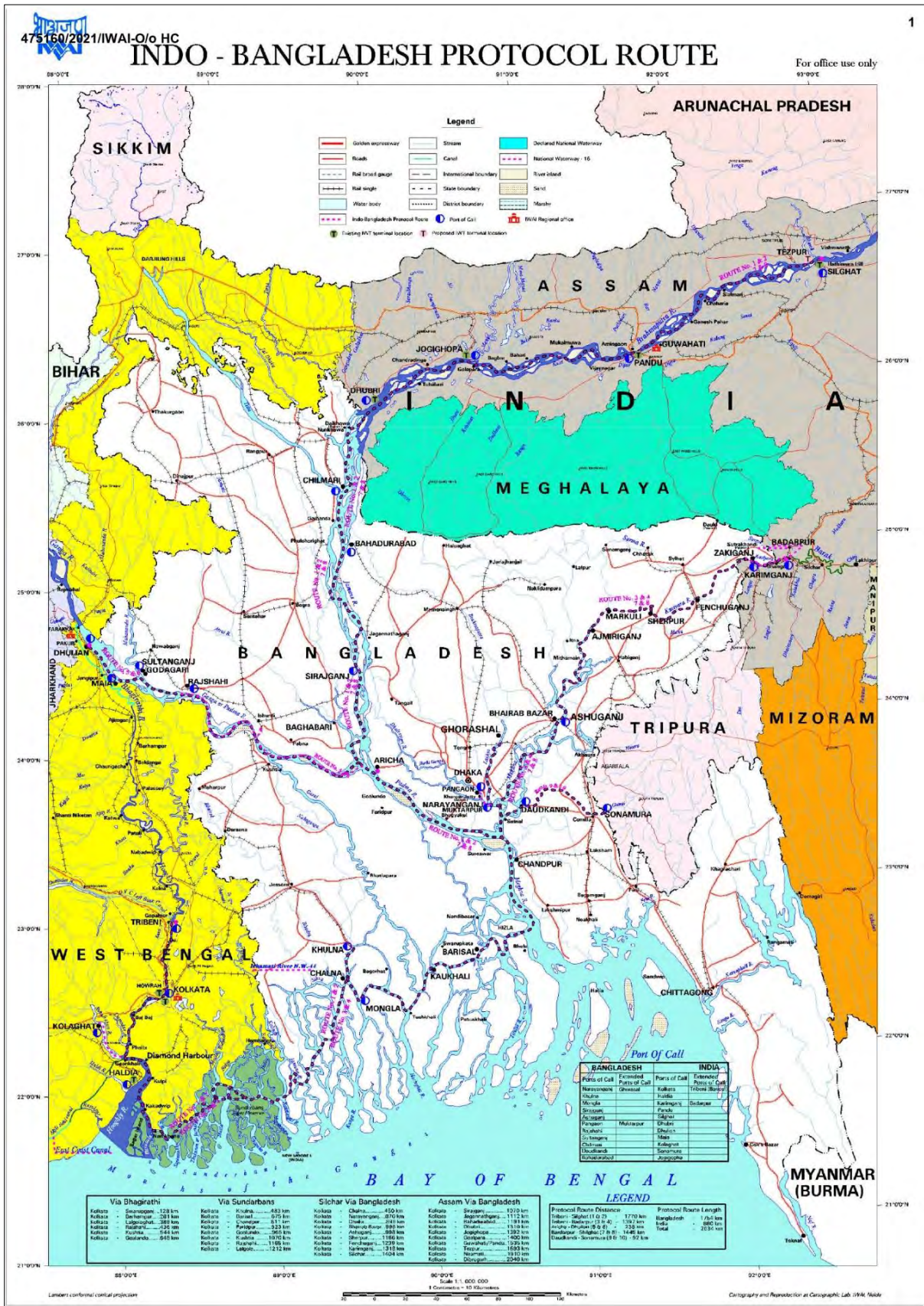
India has also undertaken several dredging projects to maintain the waterways, encourage their use and ensure effective flood management. In September 2022, the IWAI agreed to spend ₹ 200 crore to [dredge](#) and maintain the fairways of rivers up to the

Indian side in the north-east region. The government also dispersed funds for dredging in the [Gomati](#) River last year. In 2022, it was finalised that the Dredging Corporation of India (DCI) will also undertake work on NW16 ([Barak](#) River).

Additionally, bilateral agreements on the use of [Chittagong](#) and [Mongla](#) port will further improve India's linkages and allow it to bypass the narrow Siliguri Corridor, popularly known as the 'Chicken's Neck'. [Trial](#) runs for the same were conducted recently.

Ganga-Brahmaputra-Meghna Basin

The Ganga-Brahmaputra-Meghna (GBM) basin is home to over [600 million people](#). While basin management is a comprehensive long-term endeavour, cooperation between India and Bangladesh is vital. The 2011 Framework [Agreement](#) on Cooperation for Development between India and Bangladesh highlights this need for basin management and flood forecasting for mutual benefit. Both countries have adopted also some ad hoc measures, for instance, in 2021, it was decided that an [SOS system](#) for hydrological management of the basin will be developed. However, the absence of an integrated policy response remains a challenge.



Map 2: Inland Waterways Authority of India

Technical Cooperation

Under the provisions of the Ganga Water Sharing Treaty 1996, a [Joint Technical Committee](#) was established in September 2022 to study the optimal utilisation of Ganga water in Bangladesh.

In addition, of the 54 rivers shared between the two countries, seven were initially identified as priority rivers. During the latest JRC [meeting](#), both nations agreed to expand their ongoing cooperation by adding eight more rivers to the exchange of data. The details of the same will be finalised by the Technical Level Committee of the JRC. The 15 rivers include Ganga, Brahmaputra, Meghna, Teesta, Feni, Dharla, Manu, Muhuri, Khowai, Gumti and Dudhkumar.

India has also continued to play a crucial role in aiding Bangladesh in sharing [real-time flood data](#) from important rivers like the Ganga, Brahmaputra, Teesta and Barak. The dissemination of flood forecast information has allowed the civil and military authorities to relocate the flood-affected population to safer areas. To further assist Bangladesh in addressing unexpected flood events, India recently extended the period of flood data sharing beyond [October 15th](#).

In 2016, Bangladesh also sought India's involvement as a stakeholder in the \$4

billion [Ganga barrage project](#). The barrage will stretch for 165 kilometres from Rajbarhi to Chapainawabganj districts. With a depth of 12.5 meters, it will hold an enormous 2.9 billion cubic litres of water during the lean season, and then release it to feed small rivers during the dry season. Water scarcity and water salinity are the major concerns. However, there has been no notable bilateral development on the project so far.

Ongoing Issues

The Teesta Impasse

The Teesta River, a tributary of the Brahmaputra, originates in the Teesta Kangse glacier and flows through the states of Sikkim and West Bengal before entering Bangladesh. The sharing of the Teesta waters has been a longstanding and pressing demand of Bangladesh. Despite being a crucial water resource for the region, the river has been [embroiled](#) in dispute for several decades, ever since the catchment areas of the Teesta were allotted to India in 1947.

Despite the setting up of the JRC, progress on the sharing of Teesta waters has been slow. In 1983, an ad hoc arrangement was made which allocated 39 per cent of the water to India and 36 per cent to Bangladesh. The issue gained further

traction following the finalisation of the Ganga Water Treaty in 1996.

In 2011, India agreed to share 37.5 per cent of the Teesta waters, while retaining 42.5 per cent of the waters during the lean season from December to March. However, the agreement never came to fruition due to strong opposition from West Bengal Chief Minister Mamata Banerjee. The federal structure of the Indian Constitution designates water as a state subject.

In the years since, the issue has continued to be a significant point of bilateral discussion. During PM Hasina's recent visit to India in 2022, she [reiterated](#) Bangladesh's long pending request for an interim agreement.

The issue has been further compounded by various factors, including the dependency of large populations on the river, inadequate water flow during lean seasons, high water-consuming crops, and volatile domestic electoral contexts. Recent reports of possible [Chinese](#) involvement in the Teesta projects in Bangladesh and India's growing hydropower [initiatives](#) have made cooperation further complicated.

The Tipaimukh Dam

The proposed construction of the Tipaimukh Dam by India in the Barak River

basin in Manipur has also been a source of friction between India and Bangladesh.

The [dam](#), which is intended to generate hydroelectric power, has sparked concerns from Bangladesh regarding its potential downstream impact on the Surma-Kushiyara river system and fisheries, and on the *Haor* ecosystem. The construction of the dam has been repeatedly stalled since it was first commissioned in 1983.

In addition to lower-riparian concerns, many have also raised concerns about its environmental and social impact. The dam is located in a seismically fragile area amidst rich biodiversity. It is also home to the Hmar people of the Kuki tribe who are at risk of displacement.

In a similar vein, Bangladesh has earlier [opposed](#) the construction of the Mawphu dam across river Umiew and the Myntdu dam across river Myntdu in East Khasi Hills and West Jaintia Hills districts, respectively.

Interlinking of Rivers

India's proposal to transfer water from the Brahmaputra sub-basin to the Ganga sub-basin as part of its larger interlinking of rivers project has evoked serious concern in Bangladesh. The Himalayan component of the [ILR programme](#) aims to construct reservoirs on the main tributaries of the

Ganga and the Brahmaputra in India and Nepal. This includes the transfer of water from the eastern tributaries of the Ganga to the western ones, as well as linking the Brahmaputra to the Ganga and the Ganga to the Mahanadi.

Bangladesh has expressed concern about the potential diversion of water from the Ganga's tributaries upstream, as well as the Brahmaputra and Teesta rivers, to the Ganga. They have argued that the diversion could “reduce water flows into Bangladesh, increase water salinity, make the soil unsuitable for cultivation, and lead to the desertification of large parts of the country”.

Recognition of Additional Rivers

In 2016, Bangladesh sought India’s cooperation on the joint-management of [ten additional rivers](#) flowing between the two countries. These include the Moharoshi, Uddakhali, Sonkosh, Mohadeo, Harivanga, Chela, Luva, Loha, Kamjhora and Khasimara, located in northern Bangladesh, with Meghalaya and Assam across the border. The process to formally recognise these rivers as transboundary rivers is currently ongoing. Their verification will allow proper exchange of information on river system management, flow, erosion and navigability.

Conclusion

The transboundary rivers of India and Bangladesh play a crucial role in providing sustenance and economic opportunities to the people of both countries. However, with the increasing pressure on water resources due to climate change, it has become imperative to further strengthen effective hydro diplomacy. This requires the fine-tuning and enhancement of cooperation on multiple levels, regular meetings, and effective technical collaboration.

Interlinked challenges of climate change, migration, and resource scarcity present an opportunity for constructive dialogue which is not only inter-state but also internal. The focus of the discourse can extend beyond specific rivers and consider the wider ecological, environmental and social implications. The upcoming renewal of the Ganga agreement also presents an opportunity to adopt this holistic approach.

Regular exchange of data and the proper management of river relationships carries the potential to strengthen goodwill between the two countries.

Non-Traditional Security Centre

This digest has been prepared by the Non-Traditional Security Centre, Manohar Parrikar Institute for Defence Studies and Analyses, New Delhi.



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