



## **Module 4**

# **Cooperative Arrangements Worldwide and their relevance to Governance of Himalayan rivers**

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Authors: Dr. Uttam K. Sinha, Dr Ashok Behuria and Dr Smruti S. Patnaik, Institute for Defence Studies and Analyses, New Delhi

Coordination: Archana Chatterjee, IUCN and Aditi Jha, Independent Consultant

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## **Introduction**

The Great Himalayan river systems flow through seven countries, support the livelihood of more than 1 billion people, irrigate millions of hectares of agricultural land and have a cultural connection for many of those who rely upon them. In view of growing water challenges in the region, it is helpful understand the local political/strategic dynamic that interferes with process of positive forward-looking engagement on important issues like joint basin management, glacial studies and effect of climate change on basin ecology.

This module seeks to acquaint readers with the broad challenges in managing transboundary river basins. It puts together lessons drawn from five case studies - Danube, Mekong, La Plata, Nile and the Yellow River on transboundary basin management. It goes on to provide an analysis of two case studies from South Asia the Indus Water Treaty (IWT) between India and Pakistan, and the Farakka agreement between India and Bangladesh. It details the way river water sharing arrangements were worked out in the region and how they have fared over reasonably long periods of their operation. The main aim of the module is to study cooperative river basin arrangements from different parts of the world and analyse their relevance for transboundary water governance in South Asia.

### **Learning objectives**

To analyse select transboundary water-cooperation and governance frameworks in different regions of the world and explore their achievements and shortcomings.

To underscore the relevance of extra-regional cooperation frameworks for South Asia in the context of transboundary governance of river waters.

To discuss transboundary water-sharing/governance experiences in South Asia and identify the factors that led to bilateral cooperation agreements and constraints that inhibit timely modification of the transboundary governance framework in the context of new ideas, knowledge and technology.

To provide an overview of how the treaties have been operationalised among states in the region and to analyse the domestic narratives and literatures on the theme.

## Learning outcomes

To gain a greater understanding of the pressing issues of transboundary water governance across international boundaries and borders among sovereign states around the world that require objective analysis.

To draw upon the lessons learnt from existing trans-boundary water sharing governance mechanisms globally in identifying challenges and problem areas and potential resolutions within South Asia.

## Module Topics

The module is comprised of two topics. Topic 1 is on “Cooperative Arrangements Worldwide and Transboundary Governance”; Topic 2 is on “River Water Sharing in South Asia” and is comprised of two case studies. Case Study A is on “The Indus Saga: Sharing cum Division, and Way Ahead” which traces the backdrop of the Indus treaty between India and Pakistan, the mediatory efforts of World Bank; the negotiating positions taken by both countries; the domestic narratives on the issue, and the drivers of bilateral engagement on IWT; and domestic thinking on Basin management and the future trajectory. Case Study B is on “Making of the Farakka Treaty and Understanding the Process of Negotiations”. This component deals with the construction of narratives on water sharing at various levels; the political decision-making process that led to the conclusion of the treaty; Strengths and Weaknesses of the Treaty; the issues that continue to affect the operation of the agreement; and the future ahead.

## **Module 4 Cooperative Arrangements Worldwide and their Relevance to Transboundary Governance of Himalayan Rivers**

### **Topic 1: Cooperative Arrangements Worldwide and Transboundary Governance**

More than 45% of Earth's land area lies within the world's 263 river basins that cross national boundaries. These international river basins are home to about 40% of the world's people and account for 60% of the flow in the world's rivers.<sup>1</sup> The Helsinki Rules on the Uses of the Waters of International Rivers (1966)<sup>2</sup>, defines an international drainage basin as a "geographical area extending over two or more states determined by the watershed limits of the system of waters, including surface and underground waters, flowing into a common terminus." However, the UN Convention on the Law of the Non-navigational Uses of International Watercourses (1997)<sup>3</sup>, avoids the term 'basin', which is replaced by the term, 'watercourse'.

River basins are important from hydrological, economic and ecological points of view as they provide fresh drinking water as well as access to irrigation, hydropower, navigation and recreational opportunities. Their Institutionalisation has considered the 'basin' concept, example the La Plata Basin, the Nile Basin and the Yellow Basin, in others, the 'river' concept as streams or system of streams, example the Danube river. In the case of the Mekong, while the legal instruments refer to the 'basin', 'watercourses' are the main concern.<sup>4</sup>

To manage these transboundary river basins effectively, the development and implementation of joint strategies are essential. Technical cooperation and information exchange forms a good base for building trust and political cooperation between riparian countries. Multi-sector involvement can broaden opportunities for cooperation. Furthermore, involving civil societies and the public in transboundary management can attract donors to finance transboundary projects.

### **Challenges and trends in managing transboundary river basins**

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<sup>1</sup>UN Water, <http://www.unwater.org/water-facts/transboundary-waters/>

<sup>2</sup>See Text of the Helsinki Rules, 1966.

[http://www.thehinducentre.com/multimedia/archive/03021/The\\_Helsinki\\_Rules\\_3021443a.pdf](http://www.thehinducentre.com/multimedia/archive/03021/The_Helsinki_Rules_3021443a.pdf)

<sup>3</sup>See Text of the UN Convention on the Law of the Non-navigational Uses of International Watercourses, 1997. [http://legal.un.org/ilc/texts/instruments/english/conventions/8\\_3\\_1997.pdf](http://legal.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf)

<sup>4</sup>For the information on these river basins, see FAO's global water information system called AQUASTAT. It is the most quoted source on global water statistics. <http://www.fao.org/nr/water/aquastat/main/index.stm>

Transboundary river basins are determined by a diverse set of political situations between riparian neighbours, changing physical/environmental conditions (precipitation, run-off, etc), and institutional structures (water treaties, river basin organisations). Political jurisdictions do not correspond to basin boundaries leading to challenges for cooperation between riparian states or provinces. River basin management is often described as ‘fitting biophysical systems to political-administrative territories’<sup>5</sup>. Some key challenges in managing transboundary river basins are summarised<sup>6</sup>.

- **Regional Mechanisms:** A common lacuna or weakness experienced in several transboundary basins management is the lack of effective joint management. While one size may not fit all, a range of approaches/actions can be studied from scaling up executive powers beyond riparian states to strengthening River Basin Organisations (RBOs) as facilitator for water infrastructure and development rather than just a regulatory body for ensuring fair and sustainable allocation of water among different users.
- **Power Rivalry:** Riparian relations are embedded within the more often influential dimensions of historical political relations between riparian countries and their power asymmetries. Agreements on the river basin are often imposed and shaped along the interests of the stronger party. A weaker riparian, in aggregate power terms, is often not able to satisfy its needs or achieve its aim.
- **Data Sharing and monitoring:** In developing regions, mechanisms for monitoring and enforcement of data sharing are weak and their implementation is ineffective. Often, sentiments of territorial sovereignty challenge sharing data. States do not want to lose control and authority over the river.

### **Cooperative Arrangements Worldwide: Lessons Learnt**

Even though basins and rivers are not the same in physical reality, it is possible to harvest guidelines and lessons learned which can be applied to the context of the South Asian river basins. Clarity of the context of the challenges addressed in the

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<sup>5</sup> International Water Management Institute Report on Water for Food, Water for Life, Earthscan, 2007, p.608.

case studies is important without sensationalising the relevance. A general exploration into the international basins mentioned in the Module, reveal, or at times fail to reveal, common features, concerns and challenges. The common feature that emerges from all the basins under study is that Institutions remain an important body for regional water governance and has the potential to remain the most effective avenue for basin-wide water-resource management.

The long-term sustainability of water resources in the basins depends on collaborative institutional mechanisms that involve the private sector, non-governmental organisations and local communities in decisions around water usage. This enables solutions to manage the challenges posed by the competing interests of different stakeholders for water use and sectors such as energy and agriculture. Such institutional mechanisms exist in the Mekong Basin. In the Nile basin, the institutional mechanism is not inclusive and is an outcome of diplomacy and political arrangements. However, institutions are evolving in the Nile and bringing in multi-level governance<sup>7</sup>. On the Yellow River Basin the recent experience of how local governance and human-nature interaction has helped overcome massive engineering solutions that helped select constituents while alienating others is an instructive lesson.

Extensive hydropower development and climate change-related natural disasters represent some of the greatest threats to water security in basins over the world. In the Mekong, new hydropower dams could negatively impact the basin's livelihood. In the La Plata Basin, Itaipu, the world's largest hydro project and a result of a bilateral agreement between Paraguay and Brazil, helped end a prickly and emotional border dispute between the two countries.

Developing mechanisms to adapt to climate change, improving water and sanitation infrastructure, and providing agricultural innovations that reduce water use, together with other interventions, are among the most effective solutions to addressing water resource challenges. Creating economic corridors as the Greater Mekong Subregion conceived in 1992 between Cambodia, Laos, Myanmar, Thailand, Vietnam, and the two sub-regions of China (Yunan and Guangxi Zhuang) is an interesting example based on the 3 Cs: connectivity, competitiveness and building a sense of community.

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<sup>7</sup> J Dore, "An Agenda for deliberative water governance arenas in the Mekong", Water Policy, 16, 2014, pp. 194-214

Similarly, on the Danube the waterways and harbours are kept in good condition and regularly maintained, ensuring that both the present and future communities benefit from its offering. If the waterway is not easily and efficiently navigable, it simply results in the reduced market potential, and a loss of revenue.

Dispute resolution mechanism or the lack of it within the treaties governing the shared river basin is an important element of future water cooperation. The existence of a treaty or some form of cooperation over transboundary water does not mean the absence of conflict. Cooperation between riparian states decreases as conditions, political or hydrological, change more rapidly than institutions can manage. The Nile Basin Initiative set up in 1999 to promote economic integration has worked to ensure cooperation between the riparian states and reduce tensions between Egypt, Sudan and Ethiopia on the construction of the Grand Ethiopia Renaissance Dam. Egypt realises that it is better to object within the Nile Basin Initiative (NBI) than to pull out of it.

### **Lessons for South Asia**

Sharing knowledge and lessons learned from the various case studies can contribute to develop new ideas and delineate strengths and weaknesses for various stakeholders involved in basin management and water governance. Some key lessons for South Asia are the need for development of early warning system for natural disasters and floods, protection of cross-border ecosystems, regularising communication and data exchange to reduce the impact of flow variability and early identification of future trends and reviving inland navigation for regional development.

## Topic 2: River Water Sharing in South Asia

The bilateral treaties governing water sharing between India and Pakistan on the Indus Indus Water Treaty, signed in September 1960 and India and Bangladesh on the Ganga (Ganga Water Treaty) in 1996, have done fairly well in terms of ensuring steady water flows according to the terms of treaties, despite differences in interpretation of certain provisions of the treaties. The following discussion provides an analysis of the circumstances leading to the signing of the treaties, the way in which the treaties have performed over the years, the challenges that they are confronted with, and the lessons for future.

### *The Indus Saga: Sharing cum Division, and Way Ahead*

As demand for fresh water is growing around the world (additional 64 billion cubic meters every year), as per to estimates by UNESCO<sup>8</sup> to keep pace with the increase in world's population (80 million per year), it is but natural that more and more countries would turn water-scarce and transboundary water bodies would become subjects of dispute amongst people and states. India and Pakistan are fast becoming water scarce day by day. In case of India, the per capita water availability has gone down from 1861 cubic metres in 2001 to 1545 cubic metres in 2011<sup>9</sup> while in Pakistan the per capita water availability has reduced from 5300 cubic meters in 1947 to about 1000 cubic metres in 2016.<sup>10</sup> The figures are likely to come down further and reach well below one thousand and seven hundred cubic metres per person by 2025 for India and Pakistan respectively.

Water has become an extremely sensitive issue in the India-Pakistan bilateral context, leading both states to try their best to maximise their shares from the shared rivers, irrespective of the Indus Water Treaty (IWT), which provided the framework for sharing of the water resource in the Indus river system. The IWT has had a decent run, even though bilateral relationship between the two countries has been

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<sup>8</sup>See *The United Nations World Water Development Report 3: Water in a Changing World*, Unesco Publishing, 2009.

<sup>9</sup> According to figures released by Ministry of Water Resources, Government of India on 27 April 2017, available at <http://pib.nic.in/newsite/PrintRelease.aspx?relid=119797>.

<sup>10</sup> According to figures cited in "Water Scarcity in Pakistan – A Myth or a Reality?", Executive Development Institute(EDI), National School of Public Policy, 25 – 29 September, 2017, at [www.nspp.gov.pk/RATIONALE%20%20\(1\).docx](http://www.nspp.gov.pk/RATIONALE%20%20(1).docx).

fraught with tension and conflict.<sup>11</sup> However, the treaty is under stress as both the countries are witnessing the rise of vocal constituencies blaming each other for violating the terms and spirit of the treaty, with some of them even advocating scrapping of the treaty or modifying the treaty to serve each other's needs. In India some of the analysts have raised their voice against continuation of Indus Water Treaty. One representative voice is Brahma Chellaney, who has written several articles to this effect advocating scrapping of the treaty.<sup>12</sup> Some others from India like Ramaswamy R Iyer have advocated renegotiation of the treaty.<sup>13</sup> In Pakistan, there is a strong perception that India is stealing water from the Western rivers allocated to Pakistan leading to severe hardship for its farmers.<sup>14</sup> Some militant groups within Pakistan have repeatedly alleged India of blocking water flowing in its rivers. <sup>15</sup> There is a need for dispassionate analysis of how the treaty was negotiated, how it has functioned during the last 57 years, and what can be done to address mutual concerns.

## Historical Background

The Indus Water Treaty (IWT) was signed on September 19, 1960, after bitter negotiations between the representatives of the two countries for nearly nine years.<sup>16</sup> The negotiations saw maximalist position advocated by both the countries. It has completed its 57th anniversary in 2017.

Historically speaking, the competition and conflict over water in the India-Pakistan border regions are as old as the Mughal period, when irrigation system was

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<sup>11</sup>In fact, the two countries have fought two wars (in 1965 and 1971) and have had an armed engagement (in 1999) which threatened to expand into full-scale war.

<sup>12</sup>See Athar Parvaiz, "Indus Waters Treaty rides out latest crisis", *Dawn*, September 29, 2016, at <https://www.dawn.com/news/1286448>. In September 2016 for example, he tweeted: "The biggest weapon in India's arsenal against Pakistan? Nuclear? No, it's water, if India jettisons the Indus treaty" (See <https://twitter.com/Chellaney/status/777025210096553985>).

<sup>13</sup>See his article, "Indus Treaty: A Different View", *Economic and Political Weekly*, Vol. 40, Issue No. 29, 16 Jul, 2005.

<sup>14</sup>See Andrew Buncombe and Omar Waraich, "India is stealing water of life, says Pakistan", *The Independent*, London, 26 March 2009 (at <https://www.independent.co.uk/news/world/asia/india-is-stealing-water-of-life-says-pakistan-1654291.html>).

<sup>15</sup>See "Hafiz Saeed warns of water dispute with India, urges dialogue", *The Tribune*, July 31, 2012 at <https://tribune.com.pk/story/415347/hafiz-saeed-warns-of-water-dispute-with-india-urges-dialogue/>)Hafiz Saeed warns of water dispute with India, urges dialogue.

<sup>16</sup> For detailed discussion on the negotiations see Niranjana Das Gulhati (1973). *Indus Waters Treaty: An Exercise in International Mediation*. Allied Publishers, Delhi and Bashir Ahmad Malik (2005), Brite Books, Lahore.

introduced to harness the water of the Indus system. With the advent of the British colonial rule, several schemes were implemented to utilise the waters of the Indus Basin in a planned and programmatic manner to produce surplus agriculture and to increase the revenue of the colonial state. As the revenue grew from agricultural produces, provincial administrations started competing for their share of water for irrigation, which often led to disputes at the inter- and intra-province levels. There were several disputes between Punjab and Sindh over the share of water from Sutlej and Beas rivers. Similarly, the proposals for Sukkur Canal, Thal Canal, Haveli and Bhakra projects led to inter- and intra-provincial competition for water. However, the centralised British administration could resolve these disputes through 'commissions', whose members often consulted the disputing parties and came out with recommendations acceptable to them, based on which executive orders were passed to settle the differences amicably in the end. Such intra-state competition for water had to assume an inter-state dimension with the formation of two independent and sovereign states in 1947.

In 1947, in the immediate aftermath of the creation of India and Pakistan out of the colonial state of British India, problems arose over the issue of utilisation of canals and water resources. The boundary-line drawn by Cyril Radcliffe cut off the Indus canal system from its head-works. Even princely states of Bahawalpur on the Pakistani side and Bikaner on the Indian side (in Rajasthan) had their concerns about the headworks of their canals in Punjab. Many of the canal head-works such as Upper Bari Doab Canal (UBDC) and Sutlej Valley Canal (SVC) remained in India (Eastern Punjab), while most of the lands being irrigated by their waters remained in Pakistan (Western Punjab). Out of about 26 million acres of land irrigated by the existing canal system, 21 million acres and ten canals remained in Pakistan and only 5 million acres and two canals in India. In the changed circumstances, India wanted to use its upper riparian position to its advantage and develop new irrigation facilities in Eastern Punjab to correct the imbalance in the water distribution.

In December 1947, to maintain the continued supply of water to canals in Pakistan, an inter-dominion agreement was signed, which expired on March 31, 1948, without Pakistan taking too much interest in the continuation of the agreement. The very next

day, the provincial government of East Punjab shut off water supplies from the Ferozepur Headworks to the Dipalpur Canal, the Pakistani portions of Lahore and the main branches of the Upper Bari Doab Canal, fuelling protests from Pakistan and ultimately leading to yet another Interim Agreement on May 4, 1948, wherein both countries agreed to recognise and respect each other's needs for water. The agreement required East Punjab (India) to release sufficient waters to Central Bari Doab Canal (CDBC) and the Dipalpur Canal until West Punjab (Pakistan) developed alternative water resources. In the Agreement, it was also decided that Pakistan, in turn, would make annual payments to India for the cost of transporting water through canals in East Punjab, and give its share of any maintenance costs, which is to be deposited in the Reserve Bank of India.

However, the agreement soon fell through because of differences over construction of irrigation channels by Pakistan on Sutlej upstream of Ferozepur headworks to connect to Dipalpur Canal. India responded by constructing the Harike Barrage, upstream of Pakistan to balance out attempts by Pakistan to divert Sutlej waters. Pakistan, in a bid to secure its rights called for the equal apportionment of all common waters by the involvement of International Court of Justice, while India opted for resolution through mutual understanding. The bilateral discussions over the share of water reached a deadlock by the end of 1950, when Pakistan refused to pay seignorage charges.

### **The Negotiations**

In 1951, David Lilienthal, head of Tennessee Valley Authority (TVA), suggested some mechanism to manage the Indus Basin by joint control following which, the World Bank offered its good offices to resolve the dispute. The negotiations steered by the Bank lasted for almost nine years (1951-1960). The World Bank based its observations on the suggestions of Lilienthal that the whole Indus Basin should be developed as a unit—designed, built and operated as a unit as in the seven-state TVA system back in the United States and international financing be arranged, perhaps by the World Bank, to fund the work. The two countries, however, stuck to their maximalist positions. The Indian plan claimed the waters of all the three eastern rivers (Ravi, Beas, and Sutlej) and 7 percent of the western rivers (Indus, Jhelum

and Chenab), while it proposed allocation of 93 percent of the western rivers to Pakistan. The Pakistani plan proposed the allocation of 30 percent of the eastern rivers to India, and claimed 70 percent of the waters from the eastern rivers and all waters from the western rivers. The World Bank concluded on February 5, 1954, that without any new developments, there would be no prospect of further progress in the negotiations. Later, the Bank came up with an alternative proposal that had the concurrence of the engineering consultants, and enjoyed the full support of the management of the Bank. The proposal called for allocation of the entire flow of all the three eastern rivers (the Ravi, the Sutlej and the Beas) to India and allocation of all the three western rivers (the Jhelum, the Chenab and the Indus) except for a small amount from the Jhelum used in Kashmir, to Pakistan. It proposed a mutually-agreed transition period during which Pakistan would complete link-canals dividing the watershed and India would allow Pakistan use of water from the eastern rivers. Pakistan refused to accept it because it feared that India would not release enough water to fulfil its needs and because it did not have the finances to build the link-canals. From April 1, 1955 to October 1, 1957 and again from 1 October 1958 till March 31, 1960, many ad-hoc agreements were signed to ease the situation. India agreed to release specific amount of water from the eastern rivers.

The military government of Ayub Khan, after he came to power in 1958, went by the advice of his economic advisers and agreed to accept the 1954 proposal of the World Bank resulting in the signing of the agreement on September 19, 1960. The Indus Water Treaty (IWT), as it was finally called, was signed by Jawaharlal Nehru, the Prime Minister of India, Muhammad Ayub Khan, the President of Pakistan, and W.A.B. Iliff of the World Bank.

## **The Treaty**

Rather than sharing of river waters, the Treaty provides for separation of six rivers of the Indus System flowing between India and Pakistan. As per the treaty provisions, India has exclusive rights over the eastern rivers (Ravi, Beas and Sutlej) with a combined average annual discharge of 33.8 Million Acre Feet (MAF)<sup>17</sup>. Pakistan

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<sup>17</sup> During 1921-1946, Ravi had an average annual discharge of 6.4 MAF at Madhopur; Beas of 12.8 MAF at Mandi and Sutlej of 13.6 MAF at Ropar. ((data taken from R Rangachari, *Bhakra-Nangal Project: Socio-economic and Environmental Impacts*, Oxford University Press, New Delhi, 2006).

has exclusive rights over the three western rivers (Indus, Jhelum and Chenab) with annual discharge of 135.6 MAF<sup>18</sup>(measured on the Pakistani side with water collected from the rivers from the Pakistani side of the basins), with India given the right to store a volume of 3.6 MAF of water (1.60 MAF for hydro-power, 0.75 MAF for flood moderation and 1.25 MAF for general storage for non-consumptive uses, including power generation).

Article IX of the Treaty, lays down distinct procedures to handle issues which may arise: “questions” are handled by the Commission; “differences” are to be resolved by a Neutral Expert; and “disputes” are to be referred to a seven-member arbitral tribunal called the “Court of Arbitration.” The World Bank’s role in relation to “differences” and “disputes” is limited to the designation of people to fulfill certain roles when requested by either or both parties. There is no exit clause in the Treaty. Article XII (3) and (4) provide for modification of treaty provisions through a “duly ratified treaty”, which will replace the present one with the condition that it cannot be abrogated unilaterally.

Article VIII of the treaty provides for the Permanent Indus Commission (PIC) which is a bilateral commission consisting of officials from India and Pakistan. This is supposed to implement and manage the goals and objectives outlined in the Treaty. The commission maintains and exchanges data. The Commission is required to meet regularly at least once a year, alternately in India and Pakistan. The commissioners in both the countries, who “should ordinarily be a high-ranking engineer competent in the field of hydrology and water-use”, have the power to convene a meeting when they desire.

The most important provision in the Treaty is the Article VII which emphasises “Future Co-operation”. It recognises the “common interest” of the two countries, “in the optimum development of the Rivers”, and to that end they would “co-operate, by mutual agreement, to the fullest possible extent”. Either of the party can pay for and set up or install “such hydrologic observation stations within the drainage basins of the Rivers, and install such meteorological observation stations relating thereto and carry out such observations thereat”, as it may desire, and obtain the data from such

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<sup>18</sup> During 1921-1946, Indus had an average annual flow of 89.5 MAF at Kalabagh; Jhelum of 22.6 at Mangla and Chenab of 23.5 at Marala. However, at Nimoo and Chutak the flow in Indus is measured at 9 MAF, while for Jhelum at Uri is about 21 MAF and for Chenab at Akhnoor in about 21 MAF according to Indian figures (Rangachari, Ibid).

installations. They can carry out “such new drainage works as may be required about new drainage works of the other Party”, and also “by mutual agreement, co-operate in undertaking engineering works on the Rivers”.

### **The Treaty in operation**

The Treaty has withstood two full-scale wars (1965 and 1971), the Kargil conflict (1999) and regular asymmetric engagements also known as proxy-wars between the two states. This is not to deny that there have been several differences between the two countries regarding the operationalisation of some provisions of the treaty. For example, India has tried to build run-of-the-river hydro-power plants without live storage on the western rivers as per the terms of the treaty. However, most of its efforts have been put to question by Pakistan starting from the Salal project conceived in 1974, the Baglihar project in 1992, to the ongoing Kishenganga and Ratle projects in the state of Jammu and Kashmir. While Pakistani objections to the Salal project were handled at the PIC level, the Baglihar project was referred to the neutral expert who endorsed Indian position with certain modifications in the plan. The Kishenganga case has gone beyond the ‘Final Award’ by the Permanent Court of Arbitration (PCA) in 2013 (which allowed India to go ahead with the project by maintaining nine cubic metres per second (cumecs) of water in river at all time), as Pakistan sought another PCA hearing on the designs of both Kishenganga and Ratle projects. Beyond India and Pakistan, the people of Jammu and Kashmir feel betrayed by the provisions of the treaty, which, according to them, has robbed them of their right to utilise their resources for their development. In March 2003, the J&K State Assembly had passed a resolution urging Indian government to review IWT and revise it to accommodate the interests of the people of the state. Growing popular awareness over the issue at the provincial level runs counter to Pakistani resistance to developmental projects being attempted in the state.

### **The way ahead**

The final award in the Kishenganga case gave due weightage to environmental consequences of hydroelectric projects and disregarded Indian contention regarding established mode of flushing out silt through use of low gates (draw-down flushing to

tackle sedimentation by depleting the water level below dead storage level) by referring to Clause 19 of Annexure E of the Treaty. Prospective use of these principles as enunciated in this award will force India to design all future projects on the Western Rivers keeping this award in view. The fact that the award has taken note of the problem of sedimentation and sought proper evaluation of it with respect to each project would call for careful planning of all future projects. The issue also provides an opportunity for dialogue on revising certain terms of the treaty.

There is a need to critically analyse the treaty and focus on the 'future cooperation' and management of the basin in a cooperative manner. The institutions set up by the treaty also need to evolve according to the changing needs of the time preserving the spirit that guided the countries to enter into an agreement on transboundary water cooperation. In case of India and Pakistan, it is more urgent to leverage the inbuilt treaty-supported structure of annual dialogue and discuss the prospect of incorporating new knowledge being generated at various levels concerning water sharing, management and power generation.

As climate change issues are being considered very important these days, there is a need to explore the possibility of joint research and analysis of the entire basin, the changing effect of climate on precipitation and glacial cover, and the variation in water discharge in the rivers. The new technologies that have come up in dam-building and siltation-management need to be discussed and adapted. The possibility of the Treaty being amended to consider the changing technological and hydrological issues needs to be explored. In this context research being undertaken by informal knowledge and research networks like Upper Indus Basin Network (UIBN) enabled by International Centre for Integrated Mountain Development (ICIMOD) is very important. UIBN's professed mission is "to foster coordination research in climate, cryosphere, water, hazards and vulnerability, and adaptation related issues".

The Indus Forum (IF) project funded by World Bank serves as the coordinating initiative to identify strategic opportunities for collaborative action and seeks to influence "the thinking and decision of national governments in the sphere of water resources management and transboundary cooperation". Similarly, the knowledge being harnessed by South Asia Water Initiative (SAWI), enabled with the support of multi-donor trust fund (MDTF) under the World Bank, can be used for influencing

discourse on transboundary water use and governance. Importantly, SAWI aims to increase regional cooperation in the management of the major Himalayan rivers of South Asia to deliver sustainable, fair and inclusive development and climate resilience.

### **The Lessons**

We can draw the following lessons from the making as well as operation of the IWT. Firstly, in case of two states locked in a conflictual relationship of enduring hostility, the help rendered by international community proved critical in drawing up a reasonably sound agreement. Even if the impartiality of the mediations efforts by World Bank has been questioned by critics in both the countries, its quintessential approach to deal with the issue as a technical rather than political issue resulted in the final work plan to divide the transboundary river system that led to acceptable treaty provisions in the end.

Secondly, the Treaty has survived because of mutual recognition of the usefulness of continuing with an agreement that does not have a withdrawal clause; this has, indeed, made it difficult for the recalcitrant party to the agreement to walk out of the treaty without subjecting itself to international censure.

Thirdly, the dispute resolution mechanism of the Treaty has proved quite helpful to settle differences through a multi-layered approach, which has dealt with the differing views of the two parties on the provisions in a reasonably impartial manner. The fact that both the states are repeatedly resorting to the resolution mechanisms provided in the Treaty, proves that the Treaty continues to remain relevant despite the stress and strain it has been subjected to, over the years.

Finally, despite inter-state rivalry, mutual suspicion and enduring pattern of hostile relationship, there is a precipitate willingness at the official level to abide by the terms of the treaty and engage each other at least once a year as per the provisions of the treaty, which provides an avenue for continuation of dialogue and contributes to efforts at building trust between the two neighbours.

### **Brief Historical Background of Ganges Water Treaty at Farakka**

The major river systems that flow into Bangladesh is the Ganga and Brahmaputra and the large river basin is known as Ganges-Brahmaputra-Meghna (GBM) basin. This transboundary river basin with a total area of just over 1.7 million sqkm, distributed between India (64 percent), China (18 percent), Nepal (9 percent), Bangladesh (7 percent) and Bhutan (3 percent) with an estimated population of 630 million.<sup>19</sup> Augmentation of the hydro potential of Ganga is not possible because all the countries do not share the same perspective on the river water sharing in terms of the quantum of water they need and how best they can manage the water resources. The potential of the river has not been harnessed to create prosperity or to control flood, address the problem of land erosion and the related problem of sedimentation<sup>20</sup>.

There are 54 transboundary rivers that are part of GBM basin which India and Bangladesh share. Management of the common river basin requires close cooperation between these two countries. In fact the best practices of the Ganges water treaty and the manner in which this longstanding conflict was resolved would induce them to find common ground to cooperate on other common rivers. Since GBM basin, to a very large extent, determine the economy and forms backbone of the agriculture, especially in Bangladesh it sufficiently compels the two countries to be accommodative to each other's point of view and adopt policies keeping in mind the people living in the river basin. According to the Joint Rivers commission of Bangladesh, "The Ganges, the Brahmaputra and the Meghna river systems drain a total catchment area of about 1.72 million sq km through Bangladesh into the Bay of Bengal. Out of this large catchment area, only 7% lies in Bangladesh. The other co-riparian countries are India, Nepal, Bhutan and China."<sup>21</sup> This itself illustrates the need for close transboundary cooperation on shared rivers that form the lifeline of agriculture, commerce and caters to the poorest in the region who are dependent on

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<sup>19</sup> General Economic Division, Planning Commission, "Bangladesh Delta Plan 2100", June 2015, p.3, <http://www.bangladeshdeltaplan2100.org/wp-content/uploads/2015/10/Regional-Cooperation-Post-Review.pdf>. Also see <http://www.fao.org/nr/water/aquastat/basins/gbm/index.stm>

<sup>20</sup> Somnath Poudel, in Dwarika N. Dhungel, Santa B. Pun ed., *The Nepal-India Water Relationship: Challenges*, Springer, 2009 p.103

<sup>21</sup> For details see the Joint Rivers Commission of Bangladesh, <http://jrbc.gov.bd/new/index.php>

river for drinking water. Of 54 rivers that the two countries share, the Ganges water sharing problem was a major issue between India and East Pakistan which later became Bangladesh. Connected to this conflict are three major issues: flushing of Kolkata port, providing de-salinised drinking water to Kolkata and most importantly, ensuring Bangladesh gets its legitimate share of water. The conflict was how much water is considered as 'legitimate' especially in the lean season when water becomes scarce.

The Farakka issue dates back to the British time when the barrage was planned and several studies were undertaken but there was no consensus on the benefits of Farraka barrage<sup>22</sup>. Post partition, after 1947, between 1957 and 1965, Pakistan and India held four meetings between the experts of the two countries to resolve the issue of Farakka. The sixth round of meeting was held in 1968 and the matter could not proceed further as Pakistan got deeply involved in the crisis in East Pakistan. With the creation of Bangladesh, the problem of sharing the Ganges remained a major bone of contention between the two countries. To resolve the Ganges river dispute as well as to devise mechanism to share the water of common rivers, the two countries established a Joint Rivers Commission (JRC) in 1972. Both the countries signed a short-term agreement (49 days) in April 21, 1975 that allowed the commissioning of the Farraka barrage on 'experimental basis' and clearly defined the quantum of water to be shared during the lean season. However, with the assassination of Sheikh Mujibur Rahman and deterioration of bilateral relations, no long-term agreement could be concluded between the two countries. The issue was internationalised by the military regime in Bangladesh, however, Farakka did not receive the same attention as Indus did with the international community. Farakka issue was raised at the UN, the NAM summit in Colombo and Islamic Foreign Ministers Conference at Istanbul in 1976 to exert pressure on New Delhi. Though India was asked to resolve the issue bilaterally, both countries could conclude only two more interim short-term agreements in 1977 (with a guarantee clause of 80 per cent share), memorandum of understanding in 1982 (without the guarantee clause) and 1985 agreement (which had a 'burden sharing clause if the water level falls below 75 percent of the standard flow), before the two countries agreed for a long-term arrangement on Ganges in 1996. It needs to be mentioned that the shifting

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<sup>22</sup> Ben Crow, "Sharing the Ganges", University Press Limited, Dhaka, 1997, pp.26-54

nature of the river and decrease in the flow contributed to the complexity of the issue. The fact that the first review of the treaty was after two years to observe the working of the treaty and its impact of the water sharing agreement also refers to the cautious approach. In the absence of mutual adjustment or mutual agreement in case of a disagreement during the five-yearly review, the treaty clearly stated that 90% of Bangladesh's share will be released as per availability of water downstream of Farakka Barrage. The dispute redressal mechanism is bilateral and not international arbitration as is the case with Indus.

In the context of the Ganges water sharing Treaty, this section focuses on two broad issues that are relevant to water governance in the region. Does Ganges Treaty provide a suitable framework for similar cooperation on other common transboundary rivers? To what extent the treaty addresses the conflict dimension of the relationship between the countries and provides future pathway of cooperation. This section is broadly structured as follow: Dealing with Narratives, Making of the Farakka Treaty, Strength and weaknesses of the Treaty and Future of Cooperation taking into account the two countries share another 53 common rivers.

### **The Narratives on Farakka: Making and Unmaking of the Cooperation**

The dispute over the sharing of the water of Ganges has been a longstanding dispute between India and Bangladesh which at times threatened to derail the entire gamut of bilateral relations. There are popular narratives that have been weaved around the issue of water sharing in the two countries. One often comes across reference to 'stealing water' to explain the shortage of water in Bangladesh and India's hegemonic design to deny Bangladesh's legitimate share. Similarly, in India the narrative is 'giving away too much water' to Bangladesh as water is never 'sufficient' to meet the need of the people living the large Ganges basin who primarily depend on agriculture. Increased salinity in the river water, erosion of river bank, deterioration of the quality of water available for drinking, growing sedimentation that blocks the flow of the river causing flood, shrinking ground water level or pollution and its ecological impact on flora and fauna are attributed to the non-availability of the water. Moreover, in the construction of this narrative other upper riparian countries like China and Nepal or Bhutan do not figure in the discourse.

The relations between the upper riparian and the lower riparian is also determined by the flood and drought cycle that is linked to the availability of water. One often comes across terminology like “Hydro-hegemony”, “unfair”, that are often attributed to the upper riparian India while India considers itself of being “generous” (share of 34,500 from 55,000 cusecs in the earlier agreements and MoUs), and accused Bangladesh of being too “demanding” and “exaggerating” its water usage. Bangladesh considers the 34,500 cusecs water as its ‘right’ including the 80 percent flow that was guaranteed in the 1977 agreement and its claim on ‘historic flow’. Such narratives can be attributed to the spells of mistrust and suspicion that dominated the bilateral relations in the past. The political dynamics of the conflict is often described as big power-small power and Upper riparian and lower riparian conflict. Also the discourse touches on issue of sovereignty and at times was very nationalistic making it difficult to resolve the problem. The Farakka issue in Bangladesh continues to feed the oppositional politics and gives rise to anti-India sentiments. Unilateral action of India, both in terms of building the barrage and unilaterally diverting the water after lapse of the 1985 MoU, harmful impacts of Farakka and desertification of South Western region of Bangladesh due to Farakka barrage, have been part of popular narrative in Bangladesh.

After Awami League signed the treaty in 1996, BNP organised long march to Farakka and has often threatened to review the treaty once it is elected to power. In the post 2001 when BNP came to power, it neither questioned the treaty nor initiated revision process when the treaty came up for the periodic review. In India, the state of Bihar was extremely critical of the treaty and issued a white paper in 1996 that documented letters that the state exchanged with the centre regarding its demand for a fair share of the Ganges water. Even the West Bengal government has often complained about reduction of its share of water in Farakka<sup>23</sup>. However, in the case of the two countries, while India was not appreciative of the impact of reduced flow of Ganges on Bangladesh, Bangladesh always referred to historic flow without taking into account the natural reduction in the flow because of various ecological

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<sup>23</sup> 'Bangladesh getting extra water through Farakka leakage', BDnews24.com, 23 February 2012, <https://bdnews24.com/bangladesh/2012/02/23/bangladesh-getting-extra-water-through-farakka-leakage>

factors<sup>24</sup>. These narratives often blind any realistic assessment of the working of the Treaty and its potential benefits.

### **Making of the Ganges Treaty**

In spite of the long-drawn negotiation, that often languished in bureaucratic hurdles and hydrographers scientific inputs which relegated the people living in the basin as secondary stakeholders, the signing of Farakka is not a mean achievement if one goes through the process of talks that were conducted at various levels since the early 1950s. From temporary short-term arrangements (1977 Agreement, 1982 MoU, 1985 MoU) for sharing dry season flow to the long-term arrangement in 1996, is a major political landmark that was possible due to the involvement of political leaders at the highest level. Both the countries laid their claim to total water available in the river that is maximisation of demand as a starting point of negotiation which led to frequent deadlocks between the two countries in the past. The 1977 agreement reached by the Janata government in power with Gen Zia ur Rahman was based on political decision with the intervention of Babu Jagjivan Ram, to release 34,500 cusecs of water from the available 55,000 cusecs of water and a guarantee clause that ensured that Bangladesh will receive a 80 per cent of its share (article 2 and 12 of the agreement). The constitution of a committee to look into the issue of augmentation was a failure as the proposal of both the countries were not acceptable to each other.

Political Dimension of the conflict was very much dominant in the water sharing talks between the two countries. Therefore, one has noticed periods of bilateral contestation – both demanding the available water in its entirety and the politics of water sharing saw the diplomacy moving from bilateralism to internationalisation which involved contemplation to build a reservoir in Nepal (proposed by Bangladesh). Unlike the previous water sharing agreements, the formation of Joint Committee under the Ministry of External Affairs, unlike a joint committee of water Resource Ministries of the two countries involving technical experts that was entrusted with the work of devising a water sharing agreement was significant in the successful conclusion of the 1996 agreement. The two governments, took into account the average water availability from 1949-1988 to reach an agreement on

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<sup>24</sup>Ramaswamylyer, "Conflict Resolution: Three River Treaties", Economic and Political Weekly, June 12, 1999, Vol. 34, No. 24, p.1513

what constitute 'average' and accordingly devised the share of water during the lean season. From the India's perspective, West Bengal government was one of the important stakeholders and the Chief Minister of West Bengal, Shri Jyoti Basu was brought on board which contributed to the successful conclusion of Ganges Water sharing agreement in 1996.

### **Strength of the Treaty**

The signing of the Ganges water sharing was certainly a landmark taking into account the bitter war or words between the two countries over the sharing of Ganges. It is also the first bilateral long-term treaty between two neighbours who share 54 common rivers among themselves. It also attested to the fact the two governments recognised that without flexibility in their respective national positions an agreement between the two countries is not possible. Rather, the non-resolution of Farakka had an impact on the overall bilateral relationship. Though critics in Bangladesh often termed the treaty as a failure of Bangladesh's negotiation since the 1996 treaty lacked a guarantee clause, no provision for augmentation and it did not had any provision for international arbitration<sup>25</sup>. In spite of not have an arbitration clause, when there was a crisis in 1997, in the first lean season soon after the conclusion of the treaty, when the flow was reduced, the dispute resolution mechanism was put in place to sort out the crisis and the problem was successfully resolved. The reduction in Bangladesh's share that season was due to the fact that the level of water in the feeder canal was required to be reduced gradually to safeguard the canal sides and this was not taken into account during negotiation. That was soon corrected and Bangladesh was provided the stipulated quantum of water in the next ten days in April. This incident actually raised question about the working of the treaty in Bangladesh and drew criticism from the opposition who termed the treaty as a failure.

The conclusion of the Farakka treaty brought a degree of certainty to the flow of water to Bangladesh through the treaty arrangement especially in the lean season<sup>26</sup> and assurance of 90% flow of water, in case there is a disagreement over sharing, when average water reduces below 50,000 cusecs. This factor is extremely

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<sup>25</sup>Mizanur Rahman, "Ganges Water Conflict: A Comparative Analyses of 1977 Agreement and 1996 Treaty", *Asteriskos*, 1-2, 2006, p. 200-02

<sup>26</sup> See annexure I and II of the Treaty)

significant since in the past India had unilaterally withdrawn water taking advantage of no agreement after 1988.

Second, the treaty has a provision for review at the interval of each 5 years or earlier. This provision ensured that any dispute arising out of the implementation can be brought to the notice of the other during the review process. It was also a confidence building measure given the mistrust and suspicion that existed between the two countries over water sharing. Article (XI) Article XI(ii) of the treaty also states to make every effort to ensure the average of the past 40 years flow is maintained. The treaty envisages a basin development and augmentation approach (article VIII). Article IX emphasises on the “fairness, equity and no harm to either side”. It also speaks of augmentation of water in Ganges as a desirable step.

The working of the treaty can act as a confidence building measure (especially the well laid out lean season division of available water(Article X). In spite of opposition terming it as sell out, the treaty has worked well since it was signed by the two countries in 1996.

### **Existing Structure within the Treaty for resolution of differences**

Within the existing Treaty there are provisions to jointly monitor flow of water at Farraka, Hardinge Bridge daily and take note of the total discharge. The 1996 treaty provides the following structure for bilateral dispute resolution.

- i) Mutual Consultation
- ii) Joint monitoring of flows

Three stages are specified to resolve disagreements on the interpretation of the treaty (article VII)

- (i) Joint Committee
- (ii) Joint Rivers commission (JRC of the two countries function separately)
- (iii) Bilateral mechanism at the leadership level.

Unlike Indus which just monitors the World Bank guaranteed Indus Water Treaty, the JRC mandate is much larger. The JRC was part of negotiation of Farakka, and is now part of implementation and monitoring.

### **Weaknesses of the Treaty**

One of the significant factor is while JRC of Bangladesh provides ten days average of the Ganges flow during the lean season, India does not publish any data that actually makes the quantum of water available in the river public. Failure to publish the exact water received downstream of Farraka gives rise to speculation, even though Bangladesh jointly monitors the flow with India.

The treaty also fails to suggest how to augment water of Ganges. No concrete step has been discussed between the two countries. Some also argue that the 50 years average taken to arrive at the quantum of water sharing is too less a period to determine the flow of water. There are arguments that Farakka water actually did not flush much of the sedimentation that plagued Kolkata port.<sup>27</sup>

Moreover, management of sediment that is deposited upstream due to the barrage needs to be looked into. This is one of the factor responsible for the frequent floods in Bihar and Uttar Pradesh. It needs to be noted that Farakka was constructed at a time when ecological impact of dams was given less consideration and water-engineers dominated the discourse<sup>28</sup>. From a state-centric approach, the treaty needs to move to people centric approach and concentrate not just on how to share water but how to ensure clean water that flows down the river free of industrial pollutants.

The JRC of the two countries which provides institutional framework do not meet regularly to discuss the divergences of opinion on water sharing or how to cooperate on other common rivers, how to have effective flood warning system, manage the large sediment that is deposited and reduce the ecological distress of the river. This is a major problem and does not provide much hope for institutionalising cooperation

### **Can there be Third-Party Role/Arbitration?**

Farakka is a bilateral Treaty, unlike the Indus water treaty, it does not have any provision for international arbitration or have an international guarantee. Though many in Bangladesh argue that the treaty should have had a clause for international arbitration, there are unclear about what benefits Bangladesh would have received and at what financial cost. Unlike Pakistan, there is no intractable political conflict

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<sup>27</sup> Kalyan Rudra, "Dynamics of the Ganga in West Bengal, India (1764–2007): Implications for science–policy interaction", *Quaternary International*, 227(2010), p.161

<sup>28</sup> Kalyan Rudra, *The Encroaching Ganga and Social Conflicts: The Case of West Bengal, India*. <http://www.gangawaterway.in/assets/02Rudra.pdf>

between the two countries. India and Bangladesh share good relationship and issues can be settled bilaterally as was the case with the finalisation of Land boundary agreement and exchange of enclaves. It has a five-year review clause, unlike Indus water treaty. The treaty is signed only for 30 years unlike the Indus water which is signed in perpetuity.

There is a possibility that third party may have vested interest given the geopolitics of the region. International arbitration is expensive and also indicates the lack of mutual trust between countries. Moreover, there is no reason to believe that the two countries cannot resolve the issue bilaterally, if there is a political will.

### **Future of Cooperation**

Idea of basin management is embedded in the treaty. Political climate has not allowed the two countries to put forth the idea of further cooperation on basin management. But the treaty has several provisions for further cooperation in terms of augmenting the water in Ganges, flood control etc. The treaty speaks of “utilisation of the water resources of their region in the fields of flood management, irrigation, river basin development and generation of hydro-power for the mutual benefit of the peoples of the two countries”.

River-linking proposal of India has created an apprehension in Bangladesh and India need to assuage Bangladesh’s apprehension through transparency in its decision making regarding common international rivers.

As it appears the sharing of Teesta has cast a shadow over the water sharing between India and Bangladesh. Unlike the Farakka Treaty where the then Chief Minister of West Bengal, Jyoti Basu played a visionary role keeping long term relationship between the two countries in mind, the current Chief Minister, Mamta Banerjee lacks that long-term vision. Though Teesta will remain a major stumbling block, Farakka provides lessons for future cooperation on river water.

### **Multi-stakeholder approach: Will it help?**

Ganga Treaty Provide a suitable Framework for similar cooperation in other common transboundary rivers. It provides broad framework. There are lessons learnt from the making of the treaty given the historical nature of the dispute.

The treaty addresses one of the conflict dimensions of the relationship between the countries. The BBIN countries (Bangladesh, Bhutan, India and Nepal) have constituted Joint Working Group (JWG) on Water Resources Management and Power/Hydropower cooperation. Therefore, there is a possibility of the countries coming together to cooperation on managing the common basin as sub-regional cooperation makes way over bilateralism. Navigation through waterways is receiving much priority in both India and Bangladesh and also among the BBIN countries.

There are several civil society initiatives at track II level on formulating a collaborative approach. NADI initiative is one of them where there is participation of government representatives as well as high profile politicians discuss Common Rivers and common cultural space that are intertwined with the rivers. There is multi-stakeholders dialogue on Brahmaputra organised by SasiWATERS (South Asian Consortium for Interdisciplinary Water Resources Studies), South Asia Water Initiative (SAWI) etc. The same dialogue can be replicated on the other common transboundary rivers including Ganga to bring in various stakeholders perspective while formulating larger water sharing agreements.

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