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## Powering or sharing water in the Brahmaputra River basin

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### ABSTRACT

This article examines the power interplay that shapes the transboundary water interaction in the Brahmaputra River basin. The article provides two key insights based on data sharing and bilateralism aspects. First, the lack of a standard, hydrological data-sharing mechanism has created a sense of mistrust between riparians. Second, bilateralism and power asymmetry between the riparian countries has created a sense of unilateral control over the Brahmaputra River. This article concludes that due to regional geopolitics, issues of sovereignty, and unequal power, negotiation for a multilateral basin-wide treaty at this moment is a non-starter in the Brahmaputra basin.

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Power interplay; data sharing; bilateralism; Brahmaputra River; South Asia

## Introduction

Transboundary river basin management is described as a 'wicked problem' (Mirumachi, 2015). This is because transboundary rivers are shared by two or more sovereign nation-states, with diverse values attached to water resources management, rendering riparian decision making difficult. Each of these states would want to ensure a reliable supply of water to meet its various social, environmental and economic needs, making water not just a national concern but an international issue implicating state sovereignty (Alam, Dione, & Jeffrey, 2009). Any water-related intervention in one state is likely to affect the water situation in another, causing tension, apprehension, and, at times, conflicts between riparian states. These conflicts can range from silent fuming to very public displays of hostility, affecting all levels of society, often even in distant, non-riparian circles. Given the scope of the problems and the resources available to address them, avoiding a water conflict is vital (Wolf, 2007). Transboundary water interaction is needed between the sovereign states sharing a river basin.

Transboundary water interaction is inherently a political process, which is determined by the broader political context of riparian countries. Often in transboundary interactions, water acts as a medium through which politics occurs (Mirumachi, 2015). The politics is driven by the state's ability to exercise sovereignty and to control its territory and the resources in its

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jurisdiction. Any transboundary cooperation requires the respective states to sacrifice some sovereignty. Therefore, the states are willing to accept some limitation on their autonomy only if they see certain gains in that bargain (Alam et al., 2009).

The imbalance of power between riparians also plays a crucial role in determining who wins the sovereignty bargain, since it is often argued that power asymmetries are the prime determinants of the degree of control over water resources that each sovereign state attains (Zeitoun, 2008; Zeitoun & Allan, 2008; Zeitoun et al., 2017). As Warner (2004) puts it, while up-streamers use water to get more power, down-streamers use power to get more water.

The Brahmaputra River flows through four countries: India, China, Bhutan and Bangladesh. 'Brahmaputra' here refers to the entire Yarlung-Zangbo-Brahmaputra-Jamuna basin area. The basin is rich in biodiversity, with a huge potential for irrigation development, livelihood opportunities, hydropower generation, and navigation. But the riparian countries face major challenges relating to floods and droughts, infrastructural development, rising suspicion and distrust, and lack of open communication within and between countries. As a consequence, the river is inseparably linked with the regional politics involving the four riparian countries, which are unequal in size and power. The power asymmetry between the riparians of the Brahmaputra basin has made the task of accessing water resources data complex, although the states have signed bilateral memoranda of understanding to enable data and information sharing.

Against this backdrop, this article examines the power interplay that affects the water interaction of the Brahmaputra's riparian countries, specifically focusing on bilateralism and data sharing. The article draws from the findings of a dialogue project initiated by the South Asia Consortium for Interdisciplinary Water Resources Studies. In 2013, the consortium began a multilateral dialogue on the Brahmaputra basin called Transboundary Policy Dialogue for Improved Water Governance in the Brahmaputra River. The project, now in its third phase, was meant to provide a platform to the four riparian countries of the basin, to share their concerns related to the river.

The article is in four sections. The second section elaborates on the conceptual grounding, reflecting on power interplay and bilateralism in a transboundary context. It further explains how power asymmetry and interplay shape transboundary decision making. The third section deals with the methodology of the study, elaborating on data-collection methods and analysis. Section four presents the findings, substantiating the power interplay and bilateralism aspects from empirical data. The last section discusses the key findings of the article.

## **Role of power in transboundary water interaction**

Power is a concept and practice with numerous connotations and outcomes. Robert Dahl (1957) considers power a relational construct, defining it as the ability of 'A to get B to do something that B would not otherwise do'. According to Weber (1978), power is the capacity of one actor to realize their will in a social relationship, despite the opposition of other actors. Bachrach and Baratz (1962) added another dimension, i.e., 'How is power used in decision-making by limiting the breadth of discussion or by not bringing the concerns to the political forums?' These connotations represent various types of power interplay between actors.

The literature discusses three types of power interplay. The first is 'hard power', where the 'material' capacity of an actor can influence another to do something against their will. The

second is 'soft power', or bargaining power, which is less visible. It is defined as the ability to control the political agenda and to create barriers that impede certain issues from being discussed. Third, there is 'ideational power', the power to prevent people, to whatever degree, from having grievances by shaping their perception, cognition, and preferences such that they accept their roles in the existing order of things (Zeitoun, 2008). The analysis of this article revolves around the second and third categories of power interplay.

In a transboundary context, the first attempts to study how control of water resources is related to power dynamics were made by Fredrick Frey (1993), Peter Gleick (1993), and Miriam Lowi (1993). Gleick used the Euphrates River basin, and Lowi the Jordan River basin, to show how power is used to achieve political gains in transboundary negotiations (Menga, 2016). Frey attempted to theorize violent conflict over shared water resources by considering scarcity and power differentials between states and their riparian positioning (Mirumachi, 2015). In 2005, Marwa Daoudy first applied different theoretical forms of power in a transboundary context to analyze the case of the Euphrates and Tigris Rivers. Her analysis showed that Turkey and Syria had used both structural and bargaining forms of power in river system negotiations.

Likewise, many scholars have discussed the role of power interplay across different transboundary river basins (e.g. Allan & Mirumachi, 2010; Mirumachi, 2015; Wolf, Yoffe, & Giordano, 2003; Zeitoun & Warner, 2006). These studies found that in international river basins power also determines who is the hegemon, while the relative power of the parties dictates the fundamental power structure in the basin (Dinar, 2009) as well as the intensity of water conflicts (Zeitoun, 2008; Zeitoun & Warner, 2006; Wolf, Natharius, Danielson, Ward, & Pender, 1999).

### ***Types of power interplay***

Material power in a transboundary context includes the riparian's position, size, military might, economic strength, and structural capacity (Menga, 2016). Geographic proximity to a water source may influence material power, since it is an important factor that explains upstream–downstream dynamics in the politics of water allocation and river basin management (Mirumachi, 2015). As put by Allison (1971), 'Where you stand depends on where you sit.' Therefore, in analyzing hegemony, both the perception and the position of the sovereign state matter (Zeitoun & Warner, 2006).

Soft power – bargaining power and ideational power – is also an important form of power used in transboundary negotiations (Zeitoun, 2008). The first allows the hegemon to set the political agenda and shift the balance in negotiations by limiting the options and alternatives available to the weaker counterpart. The second is power over ideas, or 'power to prevent people, to whatever degree, from having grievances by shaping their perceptions, cognitions and preferences in such a way that they accept their role in the existing order of things' (Zeitoun, 2008). The 'water wars' discourse has usually focused on the exercise of hard power (visible and concrete), violence and coercion in transboundary basins. However, it has been found empirically that in transboundary contexts the focus has moved from hard to soft power – hidden and sophisticated (Menga, 2016).

Transboundary relations are mostly governed by a wide spectrum of nonviolent, co-optive power manifestations as well as other types of soft-power instruments, ranging from side payments and bribery to persuasion, inciting desire and emulating success (Warner, Zeitoun,

& Mirumachi, 2014). While soft power appears to be the most effective form of power in a transboundary context, the relative value of each form may vary depending on the situation in which basin riparians find themselves (Menga, 2016). Therefore, power forms may vary from basin to basin.

### **Power asymmetry and hydro-politics**

Power asymmetry in the context of transboundary water is a fundamental aspect of hydro-politics (Daoudy, 2009, 2005a). It affects the bargaining process (Daoudy, 2005b) for basin riparians. In international river basins, power asymmetry explains not only how conflict occurs in relation to allocation and exploitation of a water resource, but also how consent may be established through agreements and institutions (Mirumachi, 2015).

As mentioned earlier, in transboundary water negotiations, soft power, particularly bargaining or ideational power, may be used by the basin hegemon to bring about outcomes that are uncontested, under the guise of cooperation (Selby, 2005; Zeitoun & Jägerskog, 2009; Mirumachi, 2015). This soft dimension of power creates a situation where inequitable or unsustainable water allocation arrangements are undisputed; they *seem* to represent a cooperative riparian relationship (Zeitoun, Mirumachi, & Warner, 2011).

Power asymmetry may also lead to a 'benevolent hegemon'. It is usually cited that India and Egypt act as benevolent hegemons with respect to their upstream basin states (Bhutan and Sudan), offering economic incentives designed to foster cooperation (Dinar, 2009). However, in spite of such power interplay, the transboundary cooperation of India and Bhutan is considered a symbiotic, positive relationship, since it has brought significant economic benefits to both countries (Biswas, 2011).

Zeitoun and Warner (2006) posit that relative power differences can cause various forms of hydro-hegemony. According to their framework, power may either encourage or discourage effective transboundary water cooperation, and consequently result in either 'positive' or 'negative' transboundary arrangements. If the basin hegemon uses power to lead the way to cooperation, taking into consideration the needs of the basin riparians, such power can help achieve effective transboundary management. However, if the basin hegemon uses its position and power in a negative way, behaving not as a basin leader but as a basin bully, it will lead to a negative transboundary outcome or arrangement. For example, it has been argued that 'hegemonic' South Africa plays a leading (and enabling) role that has brought about an effective transboundary water management regime between Lesotho, Botswana and Namibia in the Orange-Senqu River basin (Turton & Funke, 2008). In contrast, cooperation through asymmetric treaties (like those for the Nile, Jordan, or Ganges) has become a source of conflict rather than cooperation and often brings new tensions between riparian countries. Evidently, not all cooperation is good, for in many instances it is actually a form of domination dressed up as cooperation (Selby, 2005).

It is obvious that the absence of symmetry in power between riparian countries may result in asymmetric negotiations and treaties. It is therefore important to recognize and analyze this power asymmetry and how it may influence basin-level negotiation or cooperation. The greater the symmetry in power, the better will be the outcome (equitable and sustainable) of transboundary negotiations. But, again, the effectiveness of strategies to confront power asymmetries varies from basin to basin (Zeitoun et al., 2011).

### ***Power interplay in data sharing***

Sharing of hydrological data is widely considered a fundamental component of transboundary cooperative history (Gerlak, Lautze, & Giordano, 2011), since it is extremely important to support decision making and planning among riparians. However, basic data collection in transboundary systems is not well developed (De Stefano, Edwards, De Silva, & Wolf 2010). Data are usually collected within the limits of the territory of a country. This makes it an instrument of power interplay in terms of sharing information, fully or partially, or keeping it under wraps entirely. For that reason, many countries are looking to improve their data gathering technology to have an upper hand in data sharing negotiations (Thu & Wehn, 2016).

Plengsaeng, Wehn, and van der Zaag (2014) discuss hydrological data sharing practices related to Integrated Water Resources Management. They point out that such practices may seem easy in principle but are difficult to implement in practice. They also discuss non-technical barriers (such as a perception of limited gains or concerns for national security) to hydrological data exchange and sharing on transboundary river basins, and their impact on decision making and planning in riparian countries. Similarly, Gerlak et al. (2011) argue that the implementation of data sharing exercises and procedures is lagging behind institutional and legal obligations agreed on between countries because of non-technical obstacles, not lack of data or other related technical issues.

Non-technical obstacles are political in nature and have a host of interlinkages. These may be basin-specific or from outside the basin, and may involve water-related or non-water-related aspects. The fact that data sharing is seen as closely related to national security, foreign policy, strategic relations and territorial sovereignty makes it a prime marker of power interplay and conflict. It is a ready instrument in the hands of riparian countries to extract concessions or stall negotiations over transboundary rivers. A basin state's sovereignty plays a crucial role in this regard, because sharing of data may be considered to imply a loss of control over data, information or ideas. That is to say, issues of national security and national interest, or a perceived loss of control, act as major hurdles in transboundary interactions.

### ***Bilateralism shaping transboundary water interaction***

Contrary to the predominant trend towards multilateral cooperation in other areas (Van der Wusten, Denmark, Hoffmann, & Yonten, 2011), in the case of transboundary waters, although negotiations may take place at a multilateral level, riparian states have typically opted for bilateral instead of multilateral agreements (Zawahri & Mitchell, 2011, Song & Whittington, 2004). A simple way of looking at the preference for a bilateral treaty could be that bilateral cooperation is easier to achieve and maintain than multilateral cooperation (Axelrod & Keohane, 1985; Oye, 1985). But there could be several other reasons a state might prefer bilateralism over multilateralism in transboundary river management. For example, Ruggie (1992) points out that bilateralism gives adequate space to countries to design their responses to particular situations on the merits of the case in hand, taking into account the linkages with other sectors in their bilateral engagements. Another reason for favouring bilateralism is the higher transaction costs associated with multilateral treaties. This is because negotiation becomes complex and long, due to a diversity of interests, as the number of states increases (Martin, Rutagarama, Cascão, Gray, & Chhotray, 2011). If the states involved in



negotiations have different legal systems, this may raise the cost further. In such cases states need to spend more time negotiating the content and design of treaties, increasing the transaction costs of reaching an agreement (McLaughlin Mitchell & Powell, 2009; Oye, 1985; Powell, 2006).

Power asymmetry between states may also play a significant role in the kind of treaty that is signed between riparians. According to Crow and Singh (2000), powerful states prefer bilateral treaties in multilateral basins, because such agreements allow them to impose a 'divide and conquer' policy and secure substantial relative gains. An umbrella multilateral arrangement will not be able to take into account specific exigencies. This explains why countries are averse to commit themselves to multilateral arrangements alone. The expression of power as a strategic option in the hands of any country is best preserved when bilateralism is retained. In short, while power parity may help in achieving a multilateral treaty, power asymmetry in a multilateral basin usually leads to a bilateral treaty.

## Context and methodology

### The Brahmaputra River basin

The Brahmaputra River basin originates in the Himalayan mountain range (in Tibet) and links China, India and Bangladesh (Figure 1), before it flows into the Bay of Bengal (Liu, 2015). It flows through China (1700 km), where it is called the Yarlung Tsangpo, India (769 km) under the names of Brahmaputra and Lohit, and Bangladesh (337 km) as the Jamuna (Rahaman & Varis, 2009). Three main tributaries originate in Bhutan, and thus Bhutan also makes a major contribution to the river (FAO, 2011). The basin shared by these four countries is rich in



Figure 1. Map of Brahmaputra Basin. Source: Institute of Water Modelling, Bangladesh.

biodiversity and has a huge potential for irrigation development and livelihood opportunities, and infrastructure-related operations such as navigation. With its massive hydropower potential and water flows the river not only contributes to the economic development of its riparian countries, but also triggers tension and disputes (Liu, 2015).

Within the Brahmaputra basin there are the stereotypic conflicts of interest, between upstream and downstream riparians, related to water resources development and the water diversion plans of the upstream areas. But other key concerns and challenges that are typical to the Brahmaputra basin countries are historical rivalries (e.g. the China–India war of 1962 and their border disputes), political mistrust and suspicion, increasing nationalism, closed-door negotiations exclusively on water issues, absence of negotiation frameworks, and lack of open communication (Biswas, 2011). For example, water conflict between India and China is often conflated with larger territorial and political issues (Ho, 2016). China's plans to develop four hydropower dams on the Brahmaputra River and divert its waters increase India's suspicions of Chinese intentions (Yasuda, Aich, Hill, Huntjens, & Swain, 2017). China is seen as unilateral in its actions, particularly in building dams, and unforthcoming with information. Although since 2006 an Expert Level Mechanism has been established between India and China to discuss transboundary river issues, it is still unclear how it operates or what progress has been made (China & India, 2006; Liu, 2015).

There are ongoing discussions among the political leaders and other stakeholders on regional multilateral cooperation for water management of the Brahmaputra basin, but very little progress has been made (Bandyopadhyay, 2002). At the bilateral level, there is a memorandum of understanding (MoU) between India and China (the 2013 MoU, which was signed after the expiry of the 2007 agreement on the Provision of Hydrological Information on the Yarlung Zangbo/Brahmaputra River in Flood Season by China to India) and an agreement between India and Bangladesh on hydrological data sharing (India & Bangladesh, 1972). In spite of MoUs, neither India nor China has been forthcoming in sharing such data with its neighbours. For example, China and India share hydrological data on the Brahmaputra River with India and Bangladesh, respectively, only during the flood season. Data sharing does not happen year round, particularly during the lean period. The 2013 MoU does not include any mechanism of dispute settlement related to data sharing. The overall scope of cooperation is very narrow, as it limits the legal reach of the MoU to rivers, excluding other bodies of water (Liu, 2015). Moreover, these bilateral treaties address specific and largely localized aspects of the broad issue of integrated water management. Unlike in other international river basins, there is no institutional mechanism in place to address the issue of water management at the river basin level (Bandyopadhyay, 2002). Thus, in spite of bilateral arrangements, the data sharing mechanism between riparians in the Brahmaputra basin is vague and does not follow any standard procedure. As stated by Gerlak et al. (2011), this could be because, even when an agreement is reached, states intentionally design vague mechanisms related to data exchange to enable greater flexibility in the face of resource uncertainty or to serve domestic political interests.

While both China and India have the potential to initiate or engage in basin-wide cooperation, both nations primarily take a bilateral approach to transboundary rivers (Yasuda et al., 2017). The bilateralism favoured by China and India is another challenge, particularly for the Brahmaputra basin, where multiple countries are involved. China is willing to pursue multilateralism when it is in its interest to do so and when there is more trust and engagement between China and the countries involved (Ho, 2014). In this light, its policies towards



multilateralism over international river systems vary, and depend on the overall nature of its relations with other riparian states (Ho, 2014).

## **Methodology**

Data for this article were collected through workshops and interviews under the Brahmaputra Dialogue project. To analyze the information, a qualitative research design was employed. Sixteen national and regional workshops were conducted between April 2013 and December 2016 (see A1 in the supplemental online data, at <https://doi.org/10.1080/07900627.2017.1403892>). The discussions at the workshops were recorded and fully transcribed. Data were coded and analyzed to explain the power interplay from two aspects: data sharing and bilateralism.

To substantiate the analysis, several interviews were conducted with workshop participants. The duration of these interviews was between 30 and 120 minutes. On occasion, multiple interviews were conducted to triangulate the information shared by respondents. People interviewed included serving bureaucrats (cited as SB), expert consultants (EC), key civil society actors (CS), representatives from development organizations (DO), NGOs implementing flood projects (NG), and donor agencies (DA).

To understand the power interplay in data sharing, interview questions were designed to gather information from different respondents involved in the process. For example, people from the Joint Rivers Commission (Bangladesh and India) and the Brahmaputra Board (India) were interviewed separately to explain the process and policy of data sharing. The Joint Rivers Commission was established in 1972 under the statute of India–Bangladesh Joint Rivers Commission, and its function is restricted to flood control. The Brahmaputra Board was set up in 1981 under the Ministry of Irrigation (now the Ministry of Water Resources) of India for the control of floods and bank erosion in the Brahmaputra Valley (MoWR, 2017).

Respondents were chosen from both state and country levels. Interviews were conducted to understand the underlying factors of sharing or not sharing data with riparian countries. Similarly, for bilateralism, questions were formulated to understand the reasons for promoting bilateral relationships, considering both upstream and downstream riparians.

## **Analysis**

### ***Sharing of data and information in the Brahmaputra basin***

Lack of data and information sharing creates mistrust and suspicion, hampering the diplomatic relations between the countries. (EC, 2014)

Dialogue Project participants repeatedly brought up the significance of sharing scientific data between riparian countries. They emphasized the great disconnect between scientific knowledge and managing the water resources of the Brahmaputra basin due to lack of data. Limited information on crucial aspects of the river such as water stocks, water and sediment flow, and other analytical parameters needed to gain a holistic understanding of river basins makes it difficult to have a shared vision for the river. This has also created a political environment of hostility and mutual suspicion, leading to few opportunities for cooperation.

Some participants raised concern for the lack of access to data and of a standard data sharing mechanism in the basin. Water resources data and information exchange is viewed as one element of a larger institutionalization framework, an important design principle

associated with the effectiveness of a river basin commission, and it is also an important aspect of interactions around transboundary waters (Tir & Ackermann, 2009; Zeitoun, Mirumachi, & Warner, 2011). Absence of a data sharing mechanism may lead to mistrust, increasing water resources stress, low level of cooperation, and delay in formal or informal cooperative arrangements (Gerlak, Lautze, & Giordano, 2011).

For the Brahmaputra River system, one of the basic problems that states face during water-related negotiations is the lack of adequate and reliable data on the flow of the shared rivers (Nishat & Faisal, 2000). On the one hand it prevents those at the negotiating table from arriving at a common ground (Surie and Parsai, 2015). On the other hand, it fosters power and information asymmetries between countries, which restricts a plurality of views and participation. As stated by an expert consultant (2015) during a dialogue meeting, 'The conflict arises because of information asymmetry.'

While there are bilateral agreements on the provision of hydrological information on the river (between Bhutan and India, India and China, China and Bangladesh, and India and Bangladesh), sharing of data is not devoid of tension and stress. That data are shared only during the wet season has been a cause of concern for the lower riparians, which insist on continuous data and information on the river for disaster preparedness and management.

Data at the moment is confidential because of a policy decision, and only a signature is needed to put it in the public domain. (SB, 2015)

A government representative mentioned during a regional dialogue that India has all the relevant data related to the Brahmaputra, but it is a policy decision that the data are not publicly available. This is because the Brahmaputra is particularly sensitive and data on it are often considered classified on grounds of 'national security'. This 'securitization' of water has led to the inaccessibility of even basic information about transboundary rivers, including stream and sediment flow, water withdrawal, and usage. Moreover, this culture of water securitization creates an authority binding governments to not come forward for data and information sharing. In Bangladesh this denial of access to data is perceived as a typical case of a more powerful riparian disregarding a smaller and weaker one (Singh, n.d). There is also the feeling that, given the disproportionate size and power of India and China compared to Bhutan and Bangladesh, the two large countries are behaving as basin hegemony (Ho, 2016; Mishra, 2015).

Another obstacle to data sharing is the high cost of collecting and preparing data in standardized formats (Grossman, 2006). This has been China's argument too, and as such the hydrological data sharing between India and China is not free of cost. Article 10 of 2013 MoU on sharing hydrological information between India and China states that India should pay RMB 850,000 to compensate China for this data provision. Yet China provides the data free of cost to Bangladesh, as mentioned in Article 4 of the 2008 MoU on the Provision of Hydrological Information of the Yarlung Zangbo/Brahmaputra River in Flood Season (China & Bangladesh, 2008). This indicates that China's diplomatic strategy depends on the country it interacts with and is also a case of contestation, highlighting the power interplay between the riparians.

Riparians need to be transparent on sharing information related to water infrastructure development. (CS, 2016)

One of the civil society representatives mentioned that there is little information on the water-related infrastructure development in the basin. For example, China's plan to construct

dams along the Brahmaputra (under the 12th Five Year Plan – 2011–2015) and divert the waters for its North-to-South Water Transfer Project increased suspicion of Chinese intentions in India. Similarly, the Indian Rivers Inter-link Project, diversion plans and dam construction initiatives worry Bangladesh. Participants mentioned that such actions lead to suspicion, mistrust and disputes related to the sharing of Brahmaputra waters. States are unforthcoming with such development information with riparians, for both unilateral reasons and to avoid agitation from downstream riparians.

### ***Bilateralism shaping power interplay in the Brahmaputra basin***

The dialogue should relinquish bilateralism and head toward a multilateral format. (EC, 2015)

Respondents agreed that the history of riparian relations in South Asia may be considered essentially bilateral in nature. During the dialogue meetings the lack of bilateral and multi-lateral agreements and treaties between Brahmaputra riparian countries was often discussed. Both India and China prefer to engage riparian states at the bilateral level (Ho, 2014; Wouters, 2014), whereas Bhutan and Bangladesh appear to be open to multilateral cooperation. Bangladesh has been trying to open up new avenues of cooperation through treaties with Nepal and Bhutan involving more than two nations, but these attempts are project-specific and have not made much progress yet (Singh n.d).

It has been also argued that bilateralism has enabled both India and China to keep negotiations within certain bounds, limit contestation, and prevent the formation of third-party opposition (Crow & Singh, 2000). This explains the lack of a multilateral treaty among the Brahmaputra riparian states. India has adopted a bilateral stance in its riparian engagement with Pakistan, Nepal, Bangladesh, Bhutan and China, giving it manoeuvring space in consonance with respective, dynamic, bilateral relations over time.

None of the riparian countries signed the 1997 UN Watercourses Convention, which only indicates the governments' indifference to understanding the vulnerability of the basin system. (CS, 2016)

In 1997, more than a hundred nations came together to adopt the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses. The convention offers legitimate and effective practices for data sharing, negotiation, and dispute resolution that could be followed in bilateral or multilateral water sharing arrangements. As it is based on a limited territorial sovereignty doctrine, dialogue participants emphasized that UN convention can provide a basis for transboundary water negotiations over the Brahmaputra basin by giving states equal rights to use the shared water resources. It can also provide a scope to reconsider the existing water sharing arrangements between the countries, which tend to be fragmented and asymmetrical at present.

It has been argued that the uneven distribution of power among nations in the region played a role in not ratifying the treaty. China voted against it, while India abstained. This shows that powerful nations like China and India are not willing to give up their territorial sovereignty and prefer not to let go of their strategic advantage; participation in international agreements and institutions reduces their ability to make autonomous decisions (Alam et al., 2009).

Development and management of this unique basin is subject to various geo-political constraints. The innumerable channels and tributaries, varied topographical and climatic regimes,

and multiple uses of shared water across countries unequal in size and power dynamics have made a straightforward management strategy seemingly impossible. (SB, 2015)

Achieving broadly acceptable agreements on transboundary water takes time – especially in the Brahmaputra River basin, where negotiations take place in a general atmosphere of secrecy and mistrust, and the content of the dialogue is constrained by a highly securitized and commoditized view of water (Surie & Prasai, 2015).

Dialogue participants also highlighted a power asymmetry, which may act as a barrier to finding a common ground for cooperation by riparian countries of the basin. The kind of cooperation that is seen at the moment (including hydrological data sharing and operation of the Expert Level Mechanism) is mainly designed to take place within the confines of bilateralism through MoUs. There is not much evidence of movement towards multilateralism. This indicates ‘desecuritization’ of water issues and insulating the bilateral relations by India and China (Biba, 2014).

## Discussion and conclusion

This article has examined the power interplay in transboundary water interaction over the Brahmaputra basin. The analysis brought out two key insights. First, data sharing is currently a point of conflict in the Brahmaputra basin. Data and information exchange in the basin is hindered by perceptions that such exchange may weaken the negotiating position of the riparian countries. The power asymmetry between the countries and the broader political context, which currently considers all hydrological data relating to international borders as classified, make the process of sharing data complex. Although flood control hydrological data is currently a field of cooperation, the data sharing mechanism strongly depends on the local political context and the national interests of the riparian countries. Though in a general transboundary context data sharing is considered a beginning and means to building trust between riparian countries, in the specific case of the Brahmaputra the lack of a data sharing procedure at the basin level has fostered mistrust between the riparian countries and hindered regional cooperation.

The second insight is that the bilateral approach of China and India has created a sense of unilateral control over the Brahmaputra basin. While there is some degree of cooperation between the riparian countries, in the form of MoUs and agreements, for the sharing of hydrological data, it is essentially bilateral in nature. The absence of a multilateral institution in the Brahmaputra basin has been a major hurdle to any multilateral cooperation between the riparian countries. Thus, the lack of an institutional mechanism is a challenge, because it prevents the states from having a legitimate and effective practice of data sharing, negotiation and dispute resolution. While there is a need for a basin-level institutional set-up for the Brahmaputra basin to manage transboundary interactions and conflict resolution, institutions alone are insufficient, because these often lack the political mandate and capital to engage effectively in basin politics.

Therefore, diplomatic engagement is necessary, especially when it comes to engaging basin hegemony, who are not in favour of institutionalizing multilateral engagement. So, it is important to bring in water diplomacy with high-ranking practitioners from the foreign and water policy communities. For example, in the case of both the Indus water treaty and the Ganga water treaty, India’s foreign policy wants to ensure that these treaties are in place

irrespective of conflicts around other issues. Such strong foreign policy engagement is needed for the Brahmaputra too.

With current political sensitivities such as the one regarding the Dalai Lama's recent visit to Tawang District in Arunachal Pradesh (India), India's opposition to China's One Belt One Road initiative, and the current China–India border disputes (including the recent Doklam standoff), it is unlikely that India or China will take a lead in negotiation related to a multilateral agreement involving all four riparian countries. Considering these roadblocks, it is also important to challenge the existing power asymmetry in the basin by building the capacity of the weaker states to arrive at a fair negotiation for a multilateral treaty. This article, therefore, concludes that due to regional geo-politics, issues of sovereignty, and unequal power, negotiation for a multilateral basin-wide treaty at this moment is a non-starter for the Brahmaputra Riparian countries. Instead, unofficial dialogues aiming to build relationships, confidence and trust may act as a starter, which can lead to official negotiation processes in future.

Cooperation, as suggested by dialogue stakeholders as well as by experts during closed-door interviews, can come from common areas of collaboration such as disaster management and the subsequent sharing of data for better risk assessment, identifying economic and livelihood opportunities along the basin, and conducting joint research programmes across the basin to generate improved understanding (technical and social) about both upstream and downstream stretches of the river. Such transboundary collaborations through strategic projects related to water-related risks like floods, sedimentation, and erosion – common to some or all riparian states of the basin – could be a starting point for them to achieve a shared vision and commitment that can break down the barriers among them to work jointly on priority issues.

A sustained dialogue (e.g. Brahmaputra Dialogue) process might influence the Brahmaputra's riparian countries to identify common interests related to water and could also encourage India and China to behave as basin leaders rather than basin bullies, thereby leading the way to cooperation.

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- Alam, U., Dione, O., & Jeffrey, P. (2009). The benefit-sharing principle: Implementing sovereignty bargains on water. *Political Geography*, 28(2), 90–100.
- Allan, J. A., & Mirumachi, N. (2010). Why negotiate? Asymmetric endowments, asymmetric power and the invisible nexus of water, trade and power that brings apparent water security. In A. Earle, A. Jägerskog, & J. Öjendal (Eds.) *Transboundary water management: Principles and practice*, (pp. 13–26). London: Earthscan.
- Allison, G. T. (1971). *Essence of decision: Explaining the Cuban missile crisis*. Boston, MA: Little, Brown and Company.
- Axelrod, R., & Keohane, R. O. (1985). Achieving cooperation under anarchy: Strategies and institutions. *World Politics*, 38(01), 226–254.
- Bachrach, P., & Baratz, M. S. (1962). Two faces of power. *American Political Science Review*, 56(04), pp. 947–952.
- Bandyopadhyay, J. (2002). A critical look at the report of the world commission on Dams in the context of the debate on large Dams on the Himalayan Rivers. *International Journal of Water Resources Development*, 18(1), 127–145. doi:10.1080/07900620220121701
- Biba, S. (2014). Desecuritization in China's behavior towards its transboundary rivers: The Mekong River, the Brahmaputra River and the Irtysh and the Ili Rivers. *Journal of Contemporary China*, 23(85), 21–43.
- Biswas, A. K. (2011). Cooperation or conflict in transboundary water management: Case study of South Asia. *Hydrological Sciences Journal*, 56(4), 662–670.
- China and Bangladesh. (2008). Memorandum of understanding upon provision of hydrological information of the Brahmaputra/Yalunzangbu River in flood season by China to Bangladesh. Retrieved December 17, 2016, from <http://shlx.chinalawinfo.com/newlaw2002/SLC/SLC.asp?Db=eag&Gid=100670807>
- China and India. (2006). Joint Declaration by the Republic of India and the People's Republic of China. Retrieved May 2, 2017, from <http://pib.nic.in/newsite/erelease.aspx?relid=22168>
- Crow, B., & Singh, N. (2000). Impediments and innovation in international rivers: The waters of South Asia. *World Development*, 28(11), 1907–1925.
- Dahl, R. A. (1957). The concept of power. *Systems Research and Behavioral Science*, 2(3), 201–215.
- Daoudy, M. (2005a). Turkey and the Region: Testing the links between power asymmetry and hydro-hegemony, Presentation given at First Workshop on Hydro-Hegemony, 21/22 May 2005. London, UK: King's College London.
- Daoudy, M. (2005b). *The water divide between Syria, Turkey and Iraq: Security and power asymmetry*. Paris: CNRS Editions.
- Daoudy, M. (2009). Asymmetric power: Negotiating water in the Euphrates and Tigris. *International Negotiation*, 14(2), 361–391. doi:10.1163/157180609X432860
- De Stefano, L., Edwards, P., De Silva, L., & Wolf, A. T. (2010). Tracking cooperation and conflict in international basins: historic and recent trends. *Water Policy*, 12(6), 871–884.
- Dinar, S. (2009). Power asymmetry and negotiations in international river basins. *International Negotiation*, 14(2), 329–360. doi:10.1163/157180609X432851
- FAO. (2011). FAO Water Report 37-Irrigation in Southern and Eastern Asia in Figures: Bhutan. Retrieved December 1, 2014, from: [http://www.fao.org/nr/water/aquastat/countries\\_regions/](http://www.fao.org/nr/water/aquastat/countries_regions/)
- Frey, F. W. (1993). The political context of conflict and cooperation over international river basins. *Water International*, 18(1), 54–68. doi:10.1080/02508069308686151
- Gerlak, A. K., Lautze, J., & Giordano, M. (2011). Water resources data and information exchange in transboundary water treaties. *International Environmental Agreements: Politics, Law and Economics*, 11, 179–199.
- Gleick, P. H. (1993). *Water and Conflict: Fresh Water Resources and International Security*. Cambridge, MA: President and Fellows of Harvard College and the Massachusetts Institute of Technology.



- Grossman, M. (2006). Cooperation on Africa's international water bodies: Information needs and the role of information-sharing. In W. Scheumann & S. Neubert (Eds.), *Transboundary water management in Africa: Challenges for development cooperation* (pp. 173–236). Bonn, Germany: German Development Institute.
- Ho, S. (2014). River politics: China's policies in the Mekong and the Brahmaputra in comparative perspective. *Journal of Contemporary China*, 23(85), 1–20.
- Ho, S. (2016). 'Big brother, little brothers': Comparing China's and India's transboundary river policies. *Water Policy*, 18(S1), 32–49.
- India & Bangladesh. (1972). Statute of Indo-Bangladesh joint river commission. Retrieved December 2, 2016, from <http://www.internationalwaterlaw.org/documents/regionaldocs/indo-bangladesh.html>
- Liu, Y. (2015). Transboundary water cooperation on the Yarlung/Sangbo/Brahmaputra—a legal analysis of riparian state practice. *Water International*, 40(2), 354–374.
- Lowi, M. R. (1993). *Water and power: The politics of a Scarce Resource in the Jordan River Basin*. Cambridge Middle East library (Vol. 31). Cambridge, England, New York, NY, USA: Cambridge University Press.
- Martin, A., Rutagarama, E., Cascão, A., Gray, M., & Chhotray, V. (2011). Understanding the co-existence of conflict and cooperation: Transboundary ecosystem management in the Virunga Massif. *Journal of Peace Research*, 48(5), 621–635.
- McLaughlin Mitchell, S., & Powell, E. J. (2009). Legal systems and variance in the design of commitments to the International Court of Justice. *Conflict Management and Peace Science*, 26(2), 164–190.
- Menga, F. (2016). Reconceptualizing hegemony: The circle of hydro-hegemony. *Water Policy*, 18, 40–418.
- Mirumachi, N. (2015). *Transboundary water politics in the developing world*. New York, NY: Routledge, Taylor and Francis Group.
- Mishra, A., (2015, August 14) The Saarcist. Retrieved 12 February, 2017, from <http://www.easybib.com/reference/guide/apa/website>
- MoWR. (2017). Brahmaputra board. October 7. Retrieved from <http://www.brahmaputraboard.gov.in/NER/Organisation/organisation.html>
- Nishat, A., & Faisal, I. (2000). An assessment of the institutional mechanisms for water negotiations in the Ganges-Brahmaputra-Megna system. *International Negotiation*, 5(2), 289–310.
- Oye, K. A. (1985). Explaining cooperation under anarchy: Hypotheses and strategies. *World Politics*, 38(01), 1–24.
- Plengsaeng, B., Wehn, U., & van der Zaag, P. (2014). Data-sharing bottlenecks in transboundary integrated water resources management: A case study of the Mekong River Commission's procedures for data sharing in the Thai context. *Water International*, 39(7), 933–951.
- Powell, G. (2006). Analysis of environment-related legislation in Tonga. IWP-Pacific Technical Report (International Waters Project), (32).
- Rahaman, M. M. & Varis, O. (2009). Integrated water management of the Brahmaputra basin: Perspectives and hope for regional development. *Natural Resources Forum*, 33(1), 60–75.
- Ruggie, John G. (1992). Multilateralism: The anatomy of an institution. *International Organization*, 46(3), 561–598.
- Selby, J. (2005). The Geopolitics of water in the middle east: Fantasies and realities. *Third World Quarterly*, 26(2), 329–349.
- Singh, R., (n.d.). Trans-boundary water politics and conflicts in South Asia: Towards 'Water for peace', centre for democracy and social action. Retrieved from [http://in.boell.org/sites/default/files/downloads/water\\_Final.pdf](http://in.boell.org/sites/default/files/downloads/water_Final.pdf)
- Song, J., & Whittington, D. (2004). Why have some countries on international rivers been successful negotiating treaties? A global perspective. *Water Resources Research*, 40(5), 1–18.
- Surie, M., & Parsai, S. (2015). *Strengthening transparency and access to information on transboundary Rivers in South Asia*. New Delhi: Asia Foundation.
- Thu, H. N., & Wehn, U. (2016). Data sharing in international transboundary contexts: The Vietnamese perspective on data sharing in the Lower Mekong Basin. *Journal of Hydrology*, 536, 351–364.
- Tir, J., & Ackermann, J. T. (2009). Politics of Formalized River Cooperation. *Journal of Peace Research*, 46(5), 623–640.

- Turton, A., & Funke, N. (2008). Hydro-hegemony in the context of the Orange River Basin. *Water Policy*, 10(S2), 51–69. doi:10.2166/wp.2008.207
- Van der Wusten, H., Denmark, R. A., Hoffmann, M., & Yonten, H. (2011). The map of multilateral treaty-making 1600–2000: A contribution to the historical geography of diplomacy. *Tijdschrift voor economische en sociale geografie*, 102(5), 499–514.
- Warner, J. (2004). Water, wine, vinegar and blood. On politics, participation, violence and conflict over the hydro-social contract. Proceedings from Water and Politics Conference, 26–27 February 2004, Ch. 3, World Water Council, Marseilles, France.
- Warner, J., Zeitoun, M., & Mirumachi, N. (2014). 10. How 'soft' power shapes transboundary water interaction. *Global Water: Issues and Insights*, 51.
- Weber, M., (1978). Bureaucracy. In *From Max Weber: Essays in sociology*, edited by H. H. Gerth and C. Wright Mills, 196–196. New York, NY: Oxford
- Wolf, A. T. (2007). Shared waters: Conflict and cooperation. *Annual Review of Environment and Resources*, 32, 241–269.
- Wolf, A. T., Yoffe, B., & Giordano, M. (2003). International waters: identifying basins at risk. *Journal of Water Policy*, 5(1), 29–60.
- Wolf, A. T., Natharius, J. A., Danielson, J. J., Ward, B. S., & Pender, J. K. (1999). International River Basins of the world. *International Journal of Water Resources Development*, 15(4), 387–427.
- Wouters, P. (2014). The Yin and Yang of international water law: China's transboundary water practice and the changing contours of state sovereignty. *Review of European, Comparative & International Environmental Law*, 23(1), 67–75.
- Yasuda, Y., Aich, D., Hill, D., Huntjens, P., & Swain, A. (2017). *Transboundary Water Cooperation over the Brahmaputra River: Legal Political Economy Analysis of Current and Future Potential Cooperation*. The Hague Institute for Global Justice.
- Zawahri, N., & Mitchell, S. (2011). Fragmented governance of international rivers: Negotiating bilateral versus multilateral treaties. *International Studies Quarterly*, 55(3), 835–858. doi: 10.2307/23020069
- Zeitoun, M. (2008). *Power and water in the Middle East: The hidden politics of the Palestinian-Israeli water conflict*. London: IB Tauris.
- Zeitoun, M., & Allan, J. A. (2008). Applying hegemony and power theory to transboundary water analysis. *Water Policy*, 10(S2), 3–12.
- Zeitoun, M., & Jägerskog, A. (2009). Confronting power: Strategies to support less powerful states. *Getting Transboundary Water Right: Theory and Practice for Effective Cooperation*, SIWI report, (25).
- Zeitoun, M., & Warner, J. (2006). Hydro-hegemony – a framework for analysis of trans-boundary water conflicts. *Water Policy*, 8(5), 435–460.
- Zeitoun, M., Mirumachi, N., & Warner, J. (2011). Transboundary water interaction II: The influence of 'soft' power. *International Environmental Agreements: Politics, Law and Economics*, 11(2), 159–178. doi:10.1007/s10784-010-9134-6
- Zeitoun, M., Cascão, A. E., Warner, J., Mirumachi, N., Matthews, N., Menga, F., & Farnum, R. (2017). Transboundary water interaction III: contest and compliance. *International Environmental Agreements: Politics, Law and Economics*, 17(2), 271–294.