


## Article

# Re-Interpreting Cooperation in Transboundary Waters: Bringing Experiences from the Brahmaputra Basin

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**Abstract:** Several studies have demonstrated the continuum of cooperation on transboundary rivers, but have largely focused on government to government (Track 1) cooperation and formal diplomacy. Formal arrangements like treaties, agreements, joint mechanisms, joint bodies, joint commissions (e.g., river basin organizations), etc., fall within the scope of transboundary waters cooperation. However, in some transboundary rivers, often due to political constraints, Track 1 cooperation might not be a feasible option. When governmental cooperation is a non-starter, effort and progress made outside the government domain through informal dialogues can play a significant role. It is therefore important to re-examine the definition of cooperation as it applies to international rivers, and potentially to broaden its scope. Such an examination raises important questions: What does international cooperation in this context actually mean? Is it formal (Track 1) cooperation related to sharing of water, data, and information only, or does it have a broader meaning? What, precisely, can be the entry point for such cooperation? Are informal transboundary dialogues and water diplomacy itself an entry point for cooperation on international rivers? This paper aimed to answer these critical questions drawing from the “Brahmaputra Dialogue” project initiated in 2013 under the South Asia Water Initiative (SAWI), which involved the four riparian countries of the Brahmaputra Basin. Several important focal points of cooperation emerged through this sustained dialogue, which went beyond sharing hydrological data or signing a basin-level treaty, broadening the definition of “cooperation”. The paper, bringing evidence from the dialogue, argues that the Brahmaputra Dialogue process has led to a broader understanding of cooperation among basin stakeholders, which could influence water resource management of the basin in the future.

**Keywords:** transboundary waters; cooperation; integrated water resource management; Brahmaputra River Basin; South Asia

## 1. Introduction

The 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDG) framework considers transboundary water cooperation critical to development, prosperity, and peace. Target 6.5 of SDG 6 (Ensure access to water and sanitation for all), in particular, emphasizes the need to implement integrated water resources management (IWRM) and the need to include a transboundary

dimension. Transboundary water cooperation is thus crucial to fully achieving the 2030 Agenda for Sustainable Development.

“Cooperation” is defined here as coordination between states, where they collaborate to achieve common interests with mutual benefits. To promote greater cooperation around the world’s international river basins, significant efforts have been underway in the decades since the Dublin and Rio conferences. (In 1992 the International Conference on Water and the Environment was held in Dublin, Ireland. The output from this conference was a declaration regarding water that was presented to the United Nations Conference on Environment and Development (UNCED) that was held in Rio de Janeiro in June that year where the ideas from the 1987 UN Report (the Brundtland Report) were developed and discussed. The Rio conference, which came to be known as the “Earth Summit”, was attended by 118 heads of government and was a major turning point in bringing the issues of sustainability and sustainable development onto the international political stage. The inclusion of the Dublin Principles in the conference debate helped to highlight the importance of water as a resource for environmental protection and human development.) States now also have general frameworks under international law applicable to the non-navigational uses of transboundary rivers and lakes in the form of the United Nations Watercourses Convention on the Law of the Non-Navigational Uses of International Watercourses (UNWC) and the UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes. The water conventions provide riparian countries with a framework for cooperation, a common language and platform upon which States can negotiate equitable and sustainable solutions [1], identify common interests, and develop actions toward mutual benefits.

There is also a growing body of literature highlighting that conflict and cooperation can co-exist in transboundary waters situations [2–6]. There are several river basins across the world, such as the Nile, Jordan, and Mekong, which demonstrate that water, by its very nature, tends to induce even non-cooperative co-riparians to cooperate. While water has the ability to pose a threat (with scarcity leading to competition for the resource), it can also provide opportunity for increasing cooperation. The continuum of such water cooperation, as demonstrated by different studies, is mostly related to the direct mutual benefits from the water resources, such as coordinated water management plans, hydrological data exchange, joint water infrastructure development, flood management, etc. As such, formal arrangements like treaties, agreements, joint mechanisms, joint bodies, joint commissions (e.g., river basin organizations), etc., fall within the scope of transboundary cooperation. The water conventions also support the development of such agreements, the establishment of joint bodies, and strengthening of institutions through the implementation of basin-level projects. Thus, the focus of “transboundary cooperation” has largely been on government-to-government (Track 1) cooperation and formal diplomacy; such cooperation is driven by the political moods of the riparian countries and is mostly negotiated through an official process of transboundary interactions, making cooperation over transboundary rivers a complex and inherently political process [7,8]. The different tracks of diplomacy can be defined as:

- Track 1 (traditional official diplomacy): Dialogues or negotiation between officials, which mostly include politicians, policy makers, and high-ranking military personnel in a nation-state centered perspective.
- Track 1.5: “Diplomatic initiatives that are facilitated by unofficial bodies, but directly involve officials from the conflict in question” [9].
- Track 2: As defined by [10], “unofficial, informal interaction between members of adversary groups or nations, who can interact more freely than high-ranking officials, to develop strategies, to influence public opinion, and organize human and material resources in ways that might help resolve their conflict”.
- Track 3: People-to-people or grassroots-level diplomacy undertaken by individuals, civil society, and private groups to encourage interaction and understanding of communities’ issues, and to generate awareness for empowerment within these communities [11].

Water diplomacy facilitates communication between sovereign states with the aim of promoting constructive cooperation and preventing conflicts over shared water resources [12]. While traditionally, diplomacy is defined as high-level interaction and dialogue between nation-states, in the present context, the definition has been broadened to include various other levels as well [13]. Hence, in the transboundary context, Track 1.5 and Track 2 diplomacy has played a significant role in several river basins in building trust and confidence of multiple stakeholders. Such efforts and progress being made outside of the government domain through informal diplomacy can play a significant role when governmental cooperation is a non-starter [2]. However, cooperation achieved through such informal diplomacy has usually remained outside the scope of “transboundary cooperation”, because this cooperation is not directly related to benefits from the water resources.

This cooperation mostly takes the form of civil society collaborations on transboundary concerns, joint research undertaken by academics for knowledge creation, and joint stories developed by media personnel for the river basin, etc. In order to encourage such endeavors dedicated to building trust between multiple stakeholders sharing the same rivers, and to create socio-political environments that enable potential “formal” cooperation, it is therefore important to re-examine the definition of cooperation around transboundary rivers and potentially broaden its scope. Such a re-examination raises a few pertinent questions, such as: What does transboundary cooperation actually mean? Is it formal (Track 1) cooperation related to sharing of water, data, and information only, or does it have a broader meaning? What precisely can be the entry point of such cooperation? Are informal transboundary dialogues and diplomacy itself an entry point of cooperation on international rivers?

The paper aimed to answer these critical questions, drawing from the “Brahmaputra Dialogue” (Transboundary Policy Dialogue for Improved Water Governance of Brahmaputra River) project initiated in 2013 under the South Asian Water Initiative (SAWI), which involves the four riparian countries of the Yarlung–Zangbo–Brahmaputra–Jamuna River Basin (herein referred to as Brahmaputra Basin). The Brahmaputra Dialogue is an informal platform, and was initiated to assist communication at different tracks and between different actors (representatives of states, civil society, academia, etc.) across the basin countries, in establishing connections and building trust. Significant avenues of cooperation emerged due to a sustained dialogue that went beyond sharing hydrological data or signing a basin-level treaty, broadening the definition of “cooperation”. The paper, bringing evidence from the dialogue, discusses how the Brahmaputra Dialogue process has led to a broader understanding of “cooperation” among basin stakeholders, which could influence water resource management of the basin in the future.

This article is divided into four additional sections. The second section (next) brings in a conceptual discussion of transboundary cooperation. The third section explains the methodology used for data collection and analysis. It also briefly sets the context of the Brahmaputra River Basin. Section 4 presents the findings of this article, explaining how different elements of cooperation are emerging via the Brahmaputra Dialogue. The last section presents a discussion and concludes the article.

## 2. Conceptual Discussion on Transboundary Cooperation

Transboundary cooperation has numerous challenges, as the potential and incentive for each sovereign state to cooperate varies [11]. Cooperation requires an understanding to be formed of the diverse interests of stakeholders with respect to water resources, ensuring the sustainable development of a river or lake basin as a whole [14]. Integrated water resources management (IWRM) and transboundary water management are therefore two important components of SDG 6 (Target 6.5), and are intrinsically connected to the other principles of the SDGs and their targets. Progress towards SDG Target 6.5 is monitored through two indicators: 6.5.1 tracks the degree of implementation of IWRM at all levels, and Indicator 6.5.2, specific to transboundary water cooperation, is defined as the “proportion of transboundary basin area with an operational arrangement for water cooperation”. These indicators were agreed by the United Nations Statistical Commission in March 2016 and were subsequently adopted in July 2017 by the United Nations General Assembly as part of the global

indicator framework for the Sustainable Development Goals and Targets of the 2030 Agenda for Sustainable Development.

Transboundary Rivers, by their basic nature of crossing one or more political boundaries, are in the realm of international relations engagement between two or more nation states. International relations (IR) theory can help us understand the way the international systems work, as well as how nations engage with each other and view the world [15]. Various schools of thought in international relations—realists, liberal institutionalists, and constructivists—have theories on conflict and cooperation. The realists concentrate on hard military power and why cooperation is very difficult and complicated to achieve among states [16]. They state that all nations are working to increase their own power, and that those countries that manage to hoard power most efficiently will thrive, as they can easily eclipse the achievements of less powerful nations. The liberals, also called “liberal internationalism”, believe that the current global system is capable of engendering a peaceful world order. They believe in the power of institutions, and rather than relying on direct force, such as military action, liberalism places an emphasis on international cooperation as a means of furthering each nation’s respective interests [17,18]. Constructivists rest on the notion that rather than the outright pursuit of material interests, it is a nation’s belief systems—historical, cultural, and social—that explain its foreign policy efforts and behavior [19,20]. Constructivists also argue that states are not the most important actors in international relations, but that international institutions and other non-state actors are valuable in influencing behavior through lobbying and acts of persuasion [19]. [21], however, describes the framing of conflict and cooperation within the mainstream IR theory (realist and new liberalism) as a binary pair, which has led to the assumption that conflict and cooperation are the two basic or ideal types of international interaction. The overwhelming use of mainstream approaches, as Selby argues, has led to a narrow understanding of conflict and cooperation, and “cooperation” is invariably defined in opposition to “conflict”. Due to such binary framing within mainstream IR theory, there is a strong value judgment, even within water-specific literature, that “cooperation is good and conflict is bad” [21]. As such, cooperation over water is considered to be the policy goal, irrespective of how it is achieved and who gains from such cooperation.

Within water literature, cooperation over transboundary water has evolved over the years. In the 1990’s, water was looked at more from a conflict lens, which gave rise to a “Water Wars Thesis”. The Water War Thesis argued that an inevitable global water crisis is advancing, which will trigger international wars between states [22,23] or two or more countries solely over water. The thesis drew support from water resource development literature as well as from the international rivers literature, which also focused on the possibility of disputes over water spilling over into outright conflict between states. However, the water war thesis has become the subject of extensive critique in recent years. For example, [24–26] have argued that disputes over water very rarely develop into acute militarized conflicts, as this would jeopardize the use of the resource itself. The critics even argued that water conflicts have actually encouraged cooperation between states. [27] claimed that, historically, cooperative efforts have always overpowered violent disputes over transboundary waters. There is a consensus among water professionals that the cooperative management of shared river basins should provide opportunities to increase the scope and scale of benefits [28,29]. In fact, [6,30] went a step further and even rejected the mainstream IR focus on conflict and cooperation in favor of a broader analysis of relations of power and hegemony within transboundary basins.

The hydro-hegemony analysts of international water politics (see [6,30]) have provided a broader analysis of relations of power and hegemony within transboundary basins. They contend that to understand the water issues in any river basin it is important to understand the politics involving the nation states in that particular river basin [6]. [4] took this research a step forward and emphasized that, in the vast majority of hydro-political contexts, conflict and cooperation co-exist. There is also recognition that power relations are asymmetrical, particularly between upstream and downstream countries, and that “not all cooperation is pretty” [4]. Hence, the conceptual frameworks that argue that conflict and cooperation can exist simultaneously in any river basin, without reverting to a “water wars”

scenario [31], provide a counter-narrative to the assumptions that have held conflict and cooperation as essentially opposite ends of the spectrum of interactions. These researchers also put forth that cooperation should not be looked at as the end product of any international negotiation or international legal principle, as gains from cooperation may be unevenly distributed [21].

While these insights are important and have helped to move thinking away from the binary understanding of conflict and cooperation, in the view of the authors of this paper, the definition of cooperation still needs further refinement. The transboundary interactions that this water literature has focused on or analyzed are confined mostly to the state actors. Concepts like hegemony, power, power asymmetries, and domination etc., which have been prefixed to cooperation, mostly describe the engagement of state actors (between upstream and downstream countries) in international negotiations or interactions (i.e., Track 1 diplomacy leading to river basin organizations or institutional arrangements). At international levels, legal and institutional frameworks also center around such normative emphasis on state-driven cooperation. For example, the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) provides a key legal and intergovernmental framework for promoting transboundary water cooperation [32]. The framework fosters the IWRM approach, and emphasizes that parties bordering the same transboundary waters should cooperate by entering into specific agreements and establishing joint bodies. An interstate agreement, or a joint body, joint mechanism, or commission that commonly governs transboundary rivers, such as a river basin organization, is considered transboundary cooperation. These interstate agreements often incorporate water convention principles such as “equitable and reasonable utilization” and “sustainable development” of shared watercourses with “no significant harm”.

While treaties or agreements are important to bringing stability and enhance security in a transboundary river context, establishing and ensuring such long-term cooperation at the transboundary scale requires strong political commitments from the riparian countries. Generating such political will is not only challenging, but is also a drawn-out process. As politics take center stage, transboundary cooperation becomes complex and extremely challenging. There is always a risk of change in political leadership, and efforts made to generate willingness at the political level (Track 1) may not lead to fruition. Furthermore, as discussed above, in most cases such state-driven cooperation is skewed and benefits only the powerful riparians. Cooperation through asymmetrical treaties (like for the Nile, Jordan, and Ganges) has become a source of conflict rather than cooperation [33]. Therefore, [21] poses an interesting question: “Do there exist, or should there exist, limits to the idea of international ‘cooperation’?”

In this paper, we focused on this aspect of cooperation and have argued that there is a need to extend the focus of transboundary cooperation beyond state actors. Cooperation can happen at multiple levels and between multiple stakeholders. There is a need to move from a purely analytical perspective, primarily centered on the role of the state [2,34–38], and to include the influence that non-state actors have on managing the river. Focusing only on state-driven cooperation denies or undermines cooperation that is driven by non-state actors at multiple levels, and it narrows the scope of the definition of cooperation to only what is defined in legal frameworks.

There are already several initiatives underway in river basins where either cooperation has been a non-starter or a treaty has led to conflict among the countries signing the agreement. One example is the Indus Basin Knowledge Forum, which helps to connect multiple stakeholders of the Indus Basin, shared by Afghanistan, China, India, and Pakistan. Some 300 million people live within the basin and rely on its resource base, and many more benefit from the harnessing of the basin’s resources. India and Pakistan, the countries with the most area within the basin, divided up rights to the various tributaries under the Indus Water Treaty of 1960 (IWT). The IWT has survived various wars and other hostilities between the two countries, and, as such, it is largely considered a success. Today, however, the treaty is increasingly facing challenges it was not designed to address [39]. Growing demand for water and energy in both India and Pakistan, coupled with uncertain climate futures, has put the treaty under increasing stress, leading to a complex decision-making environment. Despite significant expertise and donor



support over several decades, water management across the Indus Basin remains poor. Poor water resources management could be viewed as a missed opportunity to drive resilient economic growth and poverty reduction, while vulnerability to floods and droughts remains prevalent. Against this backdrop, the Indus Basin Knowledge Network (IBKN) or Indus Basin Dialogue was initiated in June 2013—an informal mechanism comprising participants from each of the four basin countries. The network has been able to bring together a wide range of stakeholders (including policy makers, development practitioners, academics, civil society organizations, and media), to increase the likelihood of information exchanges, which, in turn, could inform change in the basin. The dialogue has been able to build trust among stakeholders across the riparian countries through an Indus-Basin-wide dialogue process, providing capacity building, generating knowledge and information sharing, assessing climate change impacts, and promoting data exchange and collaborative research. This progress is significant, as it is a Track 2 dialogue involving participants from all four countries (not just India and Pakistan). The process is helping to build an enabling environment for cross-border collaboration on research as well as to ensure longer-term sustainability for the dialogue.

Similarly, IHE Delft has initiated new research in the Nile Basin on the role that journalists and scientists can play in transboundary conflicts or cooperation. The Nile—particularly the Blue Nile shared by Egypt, Sudan, and Ethiopia—is one of the international rivers often described as being on the verge of a “water war”, as a consequence of competing claims and concurrent projects of water exploitation by the riparian countries. The “Open Water Diplomacy: Media, Science and Transboundary Cooperation in the Nile Basin” project aims to offer a space where water journalists and water scientists from different Nile Basin countries can get acquainted and engage in a process of common learning and co-production of knowledge. The project also aims to reach out to water diplomats—national governments, international institutions, NGOs involved in transboundary water management—to contribute to building shared narratives and a culture of cooperation in the Nile Basin.

In the Lancang–Mekong River—which originates from China as Lancang River and flows through Myanmar, Lao, Thailand, Cambodia, and Vietnam as Mekong River—China, as the first upstream country, is at a strategic geopolitical position and of paramount importance in terms of transboundary river cooperation in this region. While China’s first multi-lateral engagement began with becoming an observer of the Mekong River Commission (MRC) in 1996—a regional mechanism founded by Laos, Thailand, Cambodia, and Vietnam—its most influential and recent engagement is probably the initiation of the Lancang–Mekong Cooperation (LMC) mechanism, including all six countries, in 2015. However, it is often overlooked that Chinese engagement in this region has been shaped outside the governmental domain for a very long time, both before and after the LMC was launched. For instance, in 2008, the Department of International Relationship at Yunnan University held an international academic workshop on the “Greater Mekong Subregion Economic Corridor Construction: Cooperation and Development”, which was attended by more than 70 academics from Cambodia, Laos, Myanmar, Thailand, Vietnam, India, Japan, South Korea, and China. In 2019, the Lancang–Mekong Youth Exchange and Cooperation Center was established jointly by six universities from all six countries at Fudan University in Shanghai, with a memorandum of understanding signed to promote communication among youths in this region. Such collaboration and communication among the academic communities is playing an important role in creating a cooperative atmosphere and momentum, especially among the citizens, for encouraging any official cooperation among governmental entities.

Initiatives such as those discussed above can make a substantial contribution, particularly when Track 1 cooperation is challenging due to political constraints. A significant effort is needed to strengthen transboundary water cooperation and to realize its potential to support SDG6 and the many other water-related SDGs. Effort and progress made outside the government domain, through informal dialogues, can play an important role when governmental cooperation is a non-starter. These endeavors are dedicated to building trust between nations sharing the same rivers and creating enabling socio-political environments, as potential ‘formal’ cooperation needs to be encouraged. Hence,

this paper argues that it is important to re-examine the definition of cooperation on international rivers and to potentially broaden its scope.

### 3. Methodology

#### 3.1. Physical and Political Context of the Brahmaputra Basin

The Brahmaputra Basin (please see Figure 1) originates in the Tibet Autonomous Region (TAR) of China, has a basin drainage area of 580,000 km<sup>2</sup>, and empties into the Bay of Bengal [40]. It is shared between four countries—China (50.5% of the total basin area), India (33.6%), Bangladesh (8.1%), and Bhutan (7.8%). The climate of the basin is monsoon (south-west) driven, with a distinct monsoon season from May to September accounting for 60–70% of the annual rainfall, but the upper flow is supported by groundwater and glacial/snow melt. The annual flow of the Brahmaputra River from China to India is estimated to be 165.4 billion cubic meters (BCM), with an additional 78 BCM entering India from Bhutan. As the river descends from Tibet, increased precipitation supports the growth of forests such as sal, a valuable timber tree found in Assam. At lower elevations, tall reed jungles grow in the swamps and depressed, water-filled areas (jheels) of the floodplains. Communities in the Assam Valley primarily grow tea in the upstream region, and cultivate fruit trees including plantains, papayas, mangos, and jackfruit. In this region, one can find 220 languages originating from three distinct language families—Indo-Aryan, Sino-Tibetan, and Austric. “The Brahmaputra basin lies in distinct geological and climatic zones, extending from the dry region of Tibet in the rain shadow of the Himalaya to the eastern basin receiving extremely high rainfall” [40,41].

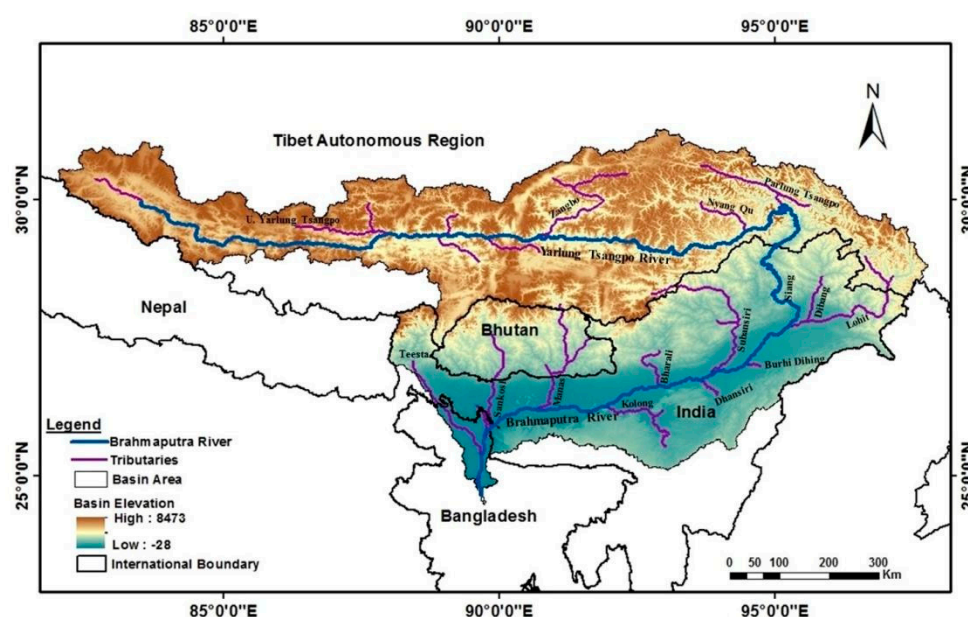


Figure 1. Map of Brahmaputra Basin (Source: IITG).

The basin has a varied terrain, high seasonal variability of river flow, and is also susceptible to sudden channel migration, making it a highly unpredictable and complex water system [40]. More than 100 million people live in the basin and the economic structure is highly river-dependent, with livelihoods relying on agriculture, livestock, forestry, and fisheries, among others. While the river is the primary source for the basin communities, a majority of the communities are marginalized and live in poverty. Although the river basin has immense potential to reduce poverty, with opportunities for irrigation development, livelihood enhancement, and operations such as inland water navigation and hydropower development, they have not been well harnessed [11].

Water scarcity is severe in South Asia and among other regions globally, and it is expected to get worse in the coming time. The hydrological impact of climate change on Brahmaputra Basin is

expected to be greater than that of other basins, as it will be contributed to by glacial melt and extreme monsoon rainfall [42]. Monsoon is characterized by seasonal variations in rainfall in the region and the streamflow is likely to be affected due to climate change, with an increase in rainfall during wet summer period [43], but less rainfall during the dry winter period [44]. Over the downstream of the basin, seasonal fluctuations of surface water availability and water demand are out of phase (inflow of a large volume of surface water is limited in a relatively short monsoon season). During the dry season, there is a serious water shortage, with water demand exceeding water availability [45]. The population, along with their food demand and economic development of the basin, is anticipated to rise at a faster rate compared to other regions [44].

The basin is rich in biodiversity [46–48], but, the riparian countries face challenges related to floods and droughts, development of infrastructure, and lack of open communication, both within and between the countries. Consequentially, within the Brahmaputra Basin, there are the stereotypical conflicts of interest between upstream and downstream riparians, related to water resources development and water diversion plans of the upstream areas [46]. As each riparian country has a national priority with regard to the Brahmaputra, the understanding of benefit from the Brahmaputra River, therefore, varies between the four sovereign states of the basin, along with the incentives to cooperate. While the river provides economic and energy opportunities for China, India's main concerns include control of floods and erosion and harnessing the river's potential (through the development of hydroelectricity and navigation) to foster integration of North-East India (which is relatively isolated) with the rest of the country. For Bangladesh, it is crucial to manage the physical impacts of the river (like riverbank erosion, annual flooding, sedimentation, and diminished water flow in the dry season) [49,50]. Being the most downstream country, Bangladesh sees the development of water infrastructure in India and China as a threat. Conflicts often arise between India and Bangladesh regarding the strategies being adopted for controlling floods and harnessing of the potential of the Brahmaputra [7]. Each country does realize the potential the river provides for economic development, but the benefits are seen through localized and sectoral lenses, which trigger tension and disputes within, as well as between, the riparian countries. While the three riparian countries have not been able to harness the potential of the river together, India and Bhutan have been able to achieve some cooperation through the development of hydropower projects [11].

Other key concerns and challenges that are typical to the Brahmaputra Basin countries are historical rivalries (China–India war of 1962 and their border disputes), high political mistrust and suspicion, increasing nationalism, closed-door negotiations exclusively on water issues, and absence of negotiation frameworks [47]. 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 [48]. There are few bilateral agreements (Memoranda of Understanding) between the riparian countries addressing water-related issues like data sharing and flood forecasting. The overall scope of cooperation through such avenues is quite narrow. While the lower riparian countries insist on getting continuous data and information, it is shared only during the wet season [46]. To date, no multi-lateral or basin-wide agreement has been signed regarding the Brahmaputra Basin.

There are ongoing discussions among the political leaders for regional multi-lateral cooperation on water management of the Brahmaputra Basin, but very little progress has actually been made in achieving cooperation at the Track 1 level (i.e., government-to-government). For example, there were plans of instituting a Brahmaputra Valley Authority within India, similar to the Tennessee Valley Authority, but it never materialized [46]. Further, there is a lack of scientific knowledge and information about the river, as the Brahmaputra River Basin is relatively under-researched compared to other river basins in South Asia. This lack of information has not hampered the construction of water infrastructure projects on the river, especially by India and China. However, very little information about these projects is made available in the public domain, which has created mistrust and suspicion among the riparian countries [11,46].



A vital factor in the case of Brahmaputra Basin is the lack of a reliable and comprehensive network of basin-wide information on climate change, flow data, natural hazards, and economic factors (agricultural production, prices, and trade through navigation) [40]. To reduce the pressure on water demand due to the region's growing population and high development activities, long-term sustainable planning (population control, land use policy) is required. Some other non-structural measures that are significant for reducing exposure and social vulnerability could include development of an early warning system and implementation of water policy that benefit the marginalized. To mitigate the risk of water scarcity and to secure the livelihood of the communities, adaptation strategies need to be jointly discussed by the policy makers, researchers and grassroots level stakeholders across the countries, and river basin management authority of the region would require consolidation of relevant institutional mechanisms at various governance scales [51].

Water being both a center and state subject in India along with the central level institutions, it is the state-level institutions of Assam and Arunachal Pradesh that are involved with the river. Within the country, it is the states, not the central government, that have primary jurisdiction over the management of water resources. In the case of China, water is a national property and is therefore administered by the national-level ministry, i.e., MWR (Ministry of Water Resources of the People's Republic of China), which has the power to formulate sector policies, regulations, and laws. However, policy implementation and enforcement fall on the shoulders of provincial water bureaus, who are supposed to obey both of their superiors, i.e., MWR and provincial government. In Bangladesh and Bhutan, the river is managed primarily by the national-level government. Institutions present at the local level are involved only during implementation and consultation during planning of activities. Meanwhile, the transnational aspect pertaining to this basin, is missing from all the countries with the absence of any regional-level authority.

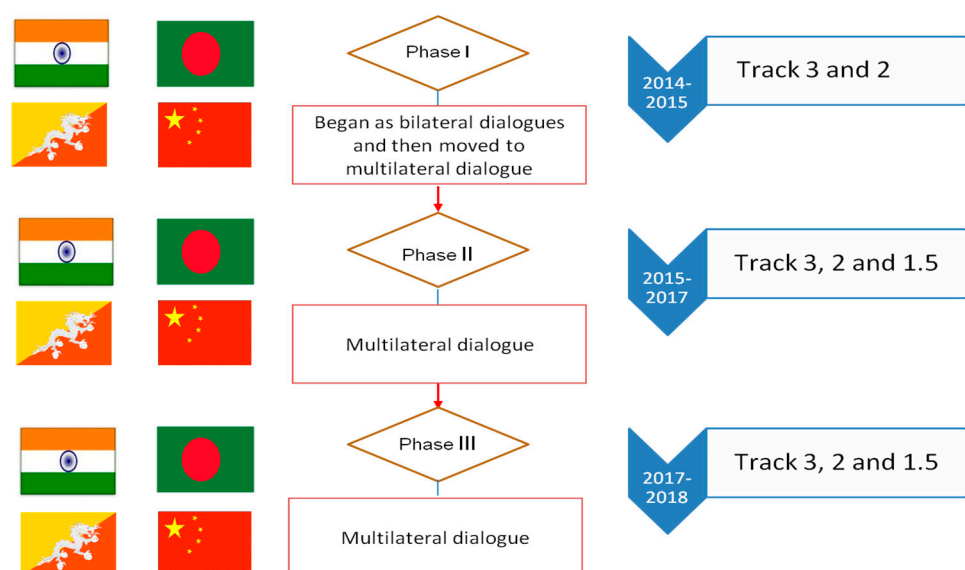
In order to develop trust and confidence between the riparian countries of the Brahmaputra and to work on the aforementioned issues and potential development agendas, there has to be long-term interaction and communication between different stakeholders, which should also include non-traditional stakeholders, such as the private sector, media, funding institutions, and marginalized groups, including women. Such multi-track diplomacy for the Brahmaputra Basin will create and support spaces where meaningful conversation can take place among diverse stakeholder groups. Such interaction can eventually inform and help shape more formal negotiations and decision making [52].

With this backdrop, in 2013, a multi-lateral and multi-track dialogue was initiated by SaciWATERS (a non-governmental organization based in India) (South Asia Consortium for Interdisciplinary Water Resources Studies) for the Brahmaputra Basin, with the aim of enhancing the interaction between multiple stakeholders. The dialogue initiated by SaciWATERS is, to date, the only multi-track and multi-lateral initiative that involves all the four basin countries and deals with the Brahmaputra River Basin. The first phase of the dialogue was supported by The Asia Foundation, and from 2014 onward, the dialogue became part of World Bank's SAWI project. In this paper, discussion is concentrated on the progress of the dialogue under the SAWI initiative. The dialogue has recently become institutionalized, with government funded research/academic institutes becoming the nodal partners (India: Indian Institute of Technology, Guwahati (IITG) and the regional nodal institute, Bangladesh: Institute of Water Modelling (IWM)) in each riparian nation for facilitating the dialogue.

### 3.2. Data Collection

For the purpose of this research, we studied the Brahmaputra Dialogue meetings in 2014–2018. The dialogue took a constructivist approach, as it is believed that both state and non-state actors are important stakeholders in transboundary water management, and that non-state actors can make a valuable contribution to paving the path of cooperation between state actors. We collected all the reports of the Brahmaputra Dialogue (BD) organized between 2014 and 2018 (see Appendix A for more details). In three phases, 23 workshops and meetings were held (see Figure 2 below). The meeting was

conducted in India (New Delhi, Guwahati, and Itanagar), Bangladesh (Dhaka), and Singapore, where Bangladeshi, Bhutanese, Chinese, and Indian participants from Track 3 to Track 1.5 were present.



**Figure 2.** Brahmaputra Dialogue under the South Asian Water Initiative (SAWI).

Track 3 and 2 involved members from CSOs, NGOs like Aaranayak, Centre for North East Studies and Policy Research (C-NES) from India; Bhutan Water Partnership and the Royal Society for Protection of Nature (RSPN) from Bhutan; and Jagrata Juba Shangha (JJS) from Bangladesh. It also involved academic and research institutions like the Institute of Chinese Studies (ICS), Dibrugarh University and Indian Institute of Technology Guwahati from India; BRAC University, Bangladesh University of Engineering and Technology, and the Institute of Water Modelling from Bangladesh; and Shanghai Institute for International Studies (SIIS) and Yunnan University from China. Track 1.5 included government officials from various ministries and departments of India, Bhutan, and Bangladesh. For instance, the Ministry of Jal Shakti (previously Ministry of Water Resources), Brahmaputra Board, Water Resources Department of Assam, and Arunachal Pradesh, Assam Disaster Management Authority from India; Ministry of Water Resources, Bangladesh Water Development Board, Water Resources Planning Organization from Bangladesh; National Environment Commission Ministry of Agriculture and Forest and Ministry of Home and Cultural Affairs from Bhutan. Track 1.5 actors have always been reluctant about their participation in these dialogues, and have particularly stated that the opinions shared on the platform are personal and do not reflect the opinions of the state. There has not been any particular formal statement from a government body, which itself shows a lack of commitment from governance institutions. Track 2 has always emphasized data sharing that can contribute to research activities, and the grassroots and civil groups have emphasized the need for transparency in the decision-making processes of the countries. The Track 3 stakeholders have always emphasized on the need for inclusive governance, with accountability for the issues raised by the stakeholders who rely on the river directly.

We numbered these meeting reports with unique codes and used them in our analysis section. For instance, the first meeting of Phase I of BD is coded as BD(I), 2015 (1). For at least 12 meetings, we also collected the audio recording and notes made during the meetings. The notes and audio recordings helped to triangulate the data of the BD meeting reports.

### 3.3. Data Analysis

An iterative process of document analysis was used to analyze the BD meeting reports. To make sense of how cooperation between stakeholders emerged in different tracks, we focused on the question:

“What is the data (text of the meeting/workshop documents) telling us about the cooperation?” We read each meeting document in detail, marking keywords, phrases, and sections, and identified how stakeholders wanted to further collaborate or showed signs of cooperation, for instance, how Indian media stakeholders understood the issues of Brahmaputra Basin and how they wanted to further collaborate with media stakeholders in Bhutan and Bangladesh. We analyzed the text in the BD reports where media stakeholders discussed the ways of collaborating with other countries’ stakeholders. Similarly, the outcomes of each meeting were also analyzed to understand the cooperation between different stakeholders.

### 3.4. Limitations

In this article, we analyzed only the meeting documents and notes, and there are certain limitations attached to this methodology. Two main limitations are attached to document analysis. First, the documents were produced for a particular purpose and not aligned to a particular research question. The documents did not provide sufficient detail to answer a particular question (in this case to redefine cooperation). However, we analyzed the documents through the lens of cooperation at different tracks, elaborating how the actors have understood cooperation and how each riparian country progressed in terms of cooperation at different tracks between 2014 and 2018. Second, policy documents report on an event in a specific time period; the data did not have the flexibility to present details before and after the event. The documents used in this article only present the views of stakeholders in those particular meetings, and did not highlight how stakeholders behaved after the meetings.

## 4. Analysis

### 4.1. Re-Interpreting Transboundary Water Cooperation Through Brahmaputra Dialogue

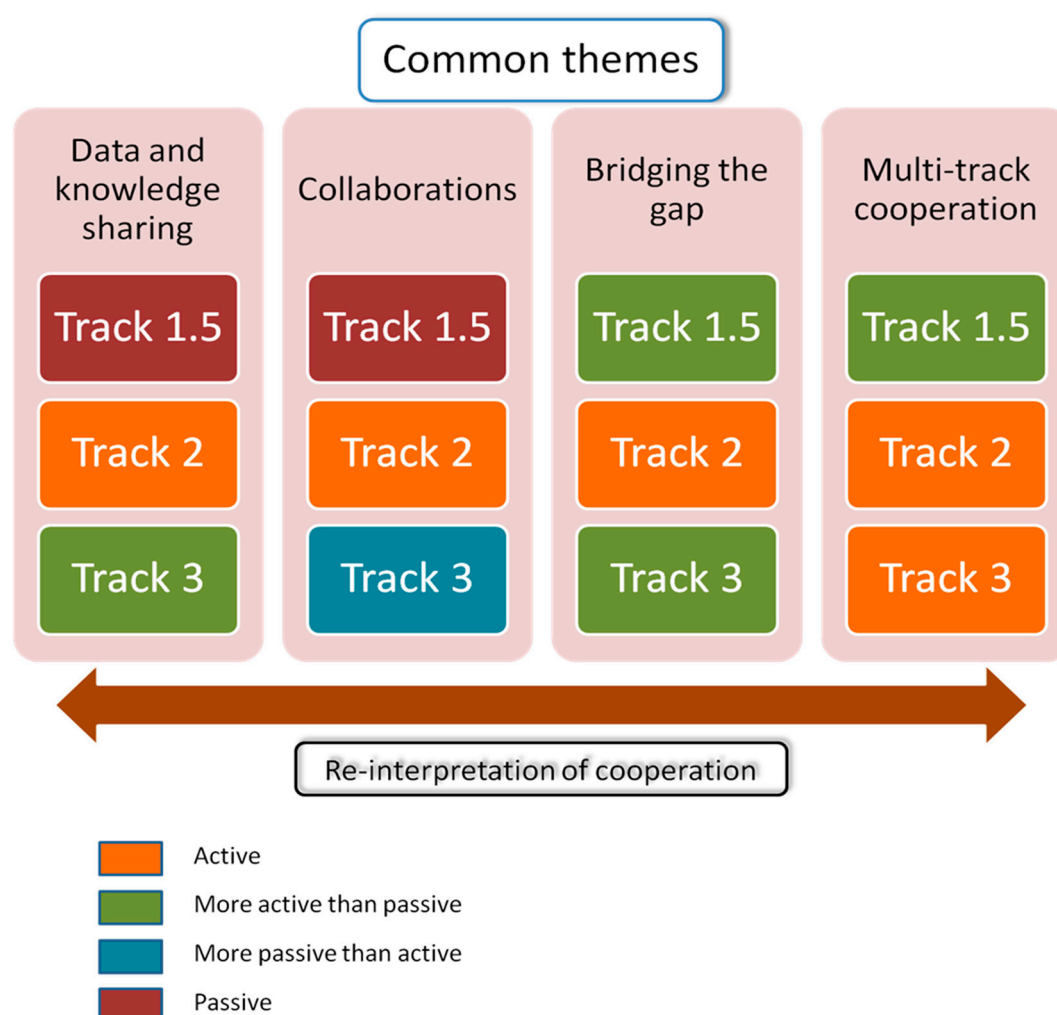
The Brahmaputra Dialogue was initiated as a bilateral initiative with people-to-people diplomacy in 2013, but from 2014, the dialogue shaped into a multi-track and multi-stakeholder deliberation engaging the four basin nations and identifying avenues of cooperation. While dialogue at the Track 1 level, with a top down approach, has always been considered an acceptable form of formal cooperation, this initiative attempted to acknowledge the inclusivity that dialogues at the Track 3 and 2 levels can bring into the decision-making process, as the perspective on the issues plaguing the basin can flow from the bottom to top only when there is accountability to those whose lives and livelihoods are impacted directly by the river. A narrow definition of water cooperation, limited to the Track 1 governmental domain, not only undermines the fruition of the cooperation in other forms, but also actively prevents the maximized impacts being generated. For example, the Indus Treaty has been a diplomatic initiative purely at the political and policy level, but it still remains disputable and unsatisfactory to the basin-level stakeholders on the ground [53,54]. This platform has served to provide a non-formal cooperative arrangement to not only the policy makers and bureaucrats (former and serving) but also to those engaged with civil society and research. The ability to bring on board the serving bureaucrats has been vital, as under certain circumstances formal communication is not possible, but unofficial bodies can facilitate the deliberation among the parties. The initiative has fostered relationships that have lasted beyond the dialogue meetings, and have initiated joint efforts beyond the platform to work together on relevant issues among the stakeholders.

In the first phase, the dialogue moved to a Track 2 mode. The structure of the workshops saw country-level workshops followed by regional-level dialogues. The country-level workshops were conducted only in India and Bangladesh, with plans to expand them to China and Bhutan in the next phase. In the second phase, the dialogue expanded its reach to Bhutan and China by organizing country consultation meetings in both countries, along with dialogue workshops in India and Bangladesh. The third phase has been concentrated on particular themes that were the outcomes of the first two phases—institutional mapping, disaster management, inland water navigation, and water–energy nexus. It has provided space for the government stakeholders to formally and informally deliberate on

issues concerning the basin, and received significant participation from China to advocate south–south cooperation on developing water–energy nexus in the region.

The dialogue meetings and workshops conducted have been cross-cut across the tracks in the aforementioned phases, but the outcomes can be outlined at different track levels. Dialogue workshops conducted between 2014 and 2018 are listed in the table in Appendix A. The workshops, meetings, and reports have been provided with a unique code, which were used for reference in the analysis section.

Figure 3 represents the recurring themes that were identified from document analysis and that have been emphasized by different stakeholders. These themes are also cross-cutting and interconnecting. Each theme also identifies which group of stakeholders is more invested in working towards cooperation in the basin through color codes. In the above diagram, “active” denotes energetic pursuit of an activity by being on the forefront, while “passive” involves watching, looking at, or listening to things rather than being actively involved in an activity. This schematic representation is intended to address how dialogue/diplomacy at the informal level can also contribute to cooperation through collaborations at that level and by keeping the diplomats at the formal level diplomacy informed. The details of this representation are addressed in the following.



**Figure 3.** Schematic representation of the analysis.

#### 4.1.1.1. Data and Knowledge Sharing

Since its inception, the dialogue has involved active participation from the grassroots level (Track 3), as any sort of policy dialogue has to acknowledge the association of the communities that

are primarily dependent on the river. “Any intervention implemented in Arunachal should take into account the land and water rights of the tribal communities” [55]. In fact, in 2016, an initiative was exclusively taken under the dialogue to bring together the CSOs of the three countries—the Centre for North East Studies and Policy Research (C-NES) from India, the Royal Society for the Protection of Nature (RSPN) from Bhutan, and Jagrata Juba Shangha (JJS) from Bangladesh. The aim was to bring about cooperation by the sharing of knowledge and experiences between these groups. Within this initiative, a gendered narrative (from marginalized groups) on coping and adapting to disasters across India, Bhutan, and Bangladesh at the community level was also developed, with the intention of sharing the learning with academics/researchers (Track 2) and policy makers (Track 1). “Free flow of data is required, which can contribute to reduce misunderstandings to a great extent” [55].

The best practices followed in Bangladesh, such as community-level disaster management systems, have been shared [56], so the other basin countries can see if these can be incorporated in their nations as well. Bangladesh’s capacity to cope with disasters, with efficient communication from top to bottom, was well appreciated by not only the CSOs, but also the government officials that were present from India and Bhutan. The workshop in Shanghai, organized in September 2019, brought together both academics and ex-bureaucrats to discuss how to realize multiple benefits, including optimized energy security and enhanced climate change resilience, through international water cooperation [57]. There are several joint collaborations, mentioned in the following sections, that have also facilitated the sharing of information across. While Track 1.5 has been involved in the process of sharing information, it is usually Tracks 2 and 3 that have fostered better research outputs in the basin. These tracks are also responsible for communicating the information requirements to diplomats from Track 1, who facilitate such transnational data exchange.

#### 4.1.2. Collaborations

A Facebook group titled “The Brahmaputra Dialogue” was initiated in 2017, which brought together the members of CSOs and academics of the three countries (India, Bhutan, and Bangladesh), along with media representatives. This form of cooperation can promote the sharing of information, generating common understanding on various issues related to the river and also building consensus regarding contested issues. Such social media groups can also help in facilitating advocacy at inter-country level [58]. The dialogue has also paved the way for science and media communication initiatives for the basin, engaging scientists and media personnel for improved generation of information and to avoid misinformation, which has been an issue in the region.

The dialogue participants have often emphasized the importance of conducting joint research and how it can help to promote cooperation in the basin. “Joint research should be conducted at the basin level by bringing all the riparian countries together, regarding issues related to the river basin” [59]. Yunnan University has extensive experience working on Mekong River, and they agreed to share their tools, which can also be applied to the Brahmaputra Basin. As a result, a basin-level project was initiated between Yunnan University from China, IIT Guwahati, and the Institute of Water Modelling (IWM) from Bangladesh. The project, titled “Water Resources Vulnerability and Security Assessment of the Yarlung Tsangpo–Brahmaputra Transboundary River Basin” is funded by the National Natural Science Foundation of China and the International Centre for Integrated Mountain Development (ICIMOD). Further, in 2017, a MoU (Memorandum of Understanding) was signed between Yunnan University from China and Indian Institute of Technology Guwahati (IIT Guwahati) to carry out data sharing, and exchange of faculty and students to ultimately foster joint research in the basin.

In 2019, the initiative was taken to develop a book called “Perspectives on the Yarlung–Tsangpo–Brahmaputra–Jamuna River”. The book is one of the first of its kind, as it is being written in a collaborative manner by academics from all four riparian countries. The objective of this book is to introduce the multiple dimensions of this river, including hydrology, cultural, biodiversity, development, and so forth. The efforts for collaboration have happened only at the Track



3 and 2 level, with Track 1.5 actors being involved either as experts or recipients of the project outputs, like policy brief, reports, and research papers that can help influence decision making.

#### 4.1.3. Bridging the Gap

Continuous deliberation with the participants through the dialogue has helped to build trust and bring cooperation among academics from India, China, and Bangladesh. The first step towards this was taken in [60], when the first country-level workshop was organized in Yunnan University in China, which also included participants from India and Bangladesh. While discussions and efforts on transboundary water diplomacy and cooperation have been focused on Track 1 cooperation among governments, academic communities also have a crucial role to play. Communication and collaboration between academics can generate many benefits, such as generating and sharing knowledge on water diplomacy and cooperation, developing the capacity of the next generation of water diplomats, identifying opportunities for conflict prevention and cooperation over transboundary water resources, and developing and improving relevant tools. Moreover, in some countries where transboundary water cooperation might be politically sensitive, academic discourses are important to creating social momentum and bridging the communication and understanding among their respective citizens. Under the Brahmaputra Dialogue, an increasing number of academic players have been brought into the conversation. Take China, for example—the dialogue was initiated with only researchers from the Yunnan University Asian International Rivers Center as participants. After several years of development, its network has grown substantially within China to include more academic institutions as well as governmental think tanks. Similarly, in Bangladesh, apart from IWM, academics from BRAC University are now involved in the process. While mistrust has been the roadblock to citizens from different countries from getting to know each other, suspicion among citizens is counterproductive to advancing the cooperation agenda. “The way with trust, confidence, dialogue, and consultation, a major trans-boundary river like the Mekong has come up with a commission, similarly it is possible for Brahmaputra to be the subject of some kind of consensus among its riparian countries—it may take 10–15 years but it is definitely possible through such dialogues” [59]. This Track 2 level cooperation can help to reveal the unknown, which is the first step for dismantling mistrust and promises the hope of reaching Track 1 cooperation in the governmental domain.

Bureaucrats from Assam and Arunachal Pradesh in India have even endorsed the dialogue and recognized the importance of involving multiple stakeholders [59]. “...involving multiple stakeholders at multiple levels from all the basin countries, which will ultimately lead to wellbeing of the common people” [59]. As a result of these continued deliberations, the participants themselves demanded the continuation of the dialogue in 2015 [61]. This, itself, can be seen as a point of cooperation, with the four riparian countries wanting to discuss the issues and concerns through the informal platform. In April 2017, serving and former bureaucrats (along with members of CSOs) from India and Bhutan visited Bangladesh to better understand the disaster management system in place in Bangladesh [56]. In order to facilitate this exchange of information, discussions were conducted with a few of the union- and district-level Disaster Management Committees of Bangladesh. This form of cooperation helped the exchange of information related to disaster management between the three countries. “Various suggestions have come—holistic and basin-level approaches, integrated water resource management, regional cooperation, etc.—but all these will not succeed without dialogues and consultations between riparian countries” [59]. Track 1.5 level diplomacy has also helped to bridge the gap between government officials and civil society [62]. Track 3 and 2 play more active roles than Track 1.5.

#### 4.1.4. Multi-Track Cooperation

By being multi-stakeholder in nature, the dialogue over the years has provided a platform for deliberations of stakeholders such as serving and retired bureaucrats, NGOs, academics and researchers, and CSOs of all the four riparian countries. Therefore, the dialogue has not only helped in building

cooperation among the government officials (serving and retired bureaucrats) of the riparian countries but also between officials and other stakeholders. In a group discussion during [58] at the Track 3 level in India, the participants themselves highlighted the importance of cooperation between them. “CSOs also need to motivate themselves into working as a team, whether with other CSOs or with the research community, as one single CSO might not have the capacity to deal with certain problems alone” [58]. Further, CSOs need to engage with the media to highlight important stories and issues. “... civil society and NGOs working on the ground should be in regular touch with media through e-mail, Whatsapp, and other social media networks so that they can come into parlance with larger issues” [58]. As compared to other river basins of South Asia, Brahmaputra is relatively under-researched [11]. Due to the lack of available scientific information, academics (Track 2) have been a central part of the Brahmaputra Dialogue. Starting with India and Bangladesh, as the dialogue progressed, academics from China also became a part of the process, generating an atmosphere of cooperation among this group multi-laterally [59].

“Cumulative Environmental Impact Assessment Studies at the transnational level should be taken up as a means of cooperation across riparian countries.” [59]. When the dialogue became multi-track, the initiative was also presented to major political leaders, such as the Chief Minister of Arunachal Pradesh and the Secretary of Water Resources Department (WRD) Assam, who appreciated the efforts of the dialogue [63]. The members of the Central Water Commission of India and water resource departments in both Bangladesh and India had agreed to be on the advisory board for the next phase of the dialogue by the end of the first phase, making the dialogue multi-track [63]. During the Bangladesh country workshop [56], members of RSPN and C-NES (along with others) conducted field research along with a multi-track meeting, where the discussions concentrated on the local-level management of disasters in the country. The meeting was organized by JJS under the BD initiative, with participation from government departments of India and Bangladesh (Track 1.5).

Academics and researchers (along with other stakeholders) from all the four countries have also come together through the dialogue on various occasions, such as the regional-level workshop in Singapore in October 2016 [64] and the Brahmaputra River Symposium in New Delhi [65] in September 2017, which has helped in enhancing cooperation among them. “Ecological needs must be taken into account when we talk about development and therefore a multi-dimensional approach is needed” has been a suggestion during [59]. Sometimes, academics or academic outcomes may exert influence over a country’s political leaders’ decisions. For example, the Chinese have shared their experience from Lancang–Mekong on long-term cooperation during the initial dialogues, and how the same strategies could be adopted towards the formation of the Brahmaputra River Commission [55].

In September 2019, IIT Guwahati and the Shanghai Institute for International Studies, a governmental-affiliated think tank, co-hosted the first multi-lateral workshop in China on “Climate-Water-Energy Nexus and South-South Cooperation” with participants from China, India, and Bangladesh [57]. Governmental officials also participated as observers. The workshop discussions highlighted the paramount importance of academic collaboration in creating consistent and positive discourses. Therefore, it is evident that Track 2 academic cooperation has already gained traction, as well as Track 1.5, in all the riparian countries. Therefore, the Brahmaputra Dialogue has helped the development of cooperation among academics and researchers of all the four riparian countries, often shaping it for the coming phases through suggestions that would sustain the initiative and seek to influence policies. For example, [65] and the following consultation meeting with Chinese delegates [66] brought forth recommendations for capacity building of the existing institutions to manage the river system effectively, integrated investment in the Brahmaputra Basin to mitigate risks and make more productive use of water resources, and enhancing cooperation between the riparian countries and states by promoting inland water navigation, finding nodal partners from each riparian nation, institutional mapping, benefit sharing, media involvement, and disaster risk reduction. These suggestions have been integral to the third phase of the dialogue. Track 1.5 seems more eager to

participate in the current phase, reflecting political willingness to cooperate, making them more active than passive now.

From the beginning, conducting joint research on issues of common interest has been emphasized across the tracks to ease the sharing of knowledge across the countries, and has been achieved in the more recent phases of the dialogue. Since each riparian nation has a different perspective on river water management, the dialogue has been able to identify common avenues that could generate cooperation, like flood and erosion management, inland water navigation, and the water–energy nexus. Patience is the key to such dialogue projects, as has been emphasized by the stakeholders time and again, to generate willingness to cooperate on a regional level. The Mekong River Commission, which belongs to a more familiar geographical context as both basins are in the South of Asia with familiar development issues, took 37 years to materialize [67]. The dialogue acknowledges the contribution of diplomacy and cooperation efforts at the Track 1.5, 2, and 3 levels as effective and necessary, because the outcomes keep the Track 1 informed. This provides encouragement for the Track 1 diplomats to also engage in basin-level dialogue formally.

## 5. Conclusions

While state cooperation in transboundary waters is seen as a logical consequence of interdependencies, such cooperation is driven by several factors, such as national security, historical rivalries, hydrological conditions of the basin, and also, at times, intervention of third parties [32]. It is a drawn-out process and, at times, states may not be motivated enough to cooperate. Hence, there is a necessity to expand the focus of cooperation beyond state actors. The Brahmaputra Dialogue provides a neutral platform for open communication among participants. The dialogue does not necessarily focus on a consensus outcome, but is a multi-lateral platform for informal engagement and consultation to identify avenues for cooperation in the transboundary context. Through multi-stakeholder engagement, the dialogue initiative aims to increase cooperation at multiple levels and decrease conflict within the basin. While transboundary cooperation is mostly looked at as a state-led process resulting from political interaction between the riparian countries, this initiative emphasizes the need to widen the scope of cooperation to incorporate initiatives that are happening outside the formal process. Such transboundary interactions between non-state actors could influence resolutions of the transboundary water issues of the Brahmaputra Basin.

Flood management, erosion control, hydropower, navigation, and ecological integrity etc., are issues of high importance to all countries sharing the basin, but there is a need to better understand the system in order to improve its management for economic development. Although researchers, water practitioners, and managers, among others, have conducted substantial analyses to understand the dynamics and potential of this mighty river, there remain significant knowledge gaps in the system and in sustainable approaches able to make the most productive use of rich water resources while reigning in destructive forces. Due to the securitization of hydrological data, there is secrecy around water knowledge in the basin, and a lack of transparency surrounds the knowledge that is available. All of these issues have also resulted in knowledge gaps, which pose a real challenge to IWRM in the region. By bringing the academic community of all the four countries together, this initiative is providing them a platform to interact and work in cooperation to generate basin-wide knowledge. Such basin-wide knowledge can help to strengthen the evidence base and enhance the shared understanding of the system. Such understanding would foster more strategic and cooperative planning across administrative and sectoral boundaries, as well as in multiple disciplines. This, in addition to strengthening the interface between science and policy, would lead to more informed decision making for improved policy formulation (such as the SDGs) and river basin management.

Several focal points where the countries could cooperate have emerged only because the dialogue could be sustained to provide an opportunity for the stakeholders to identify the common issues. Therefore, the dialogue also goes beyond hydrological data sharing or signing of a basin-level treaty, thus broadening the definition of “cooperation” in the Brahmaputra Basin. The identified

focal points of cooperation include the academic exchange of scholars, joint research proposals, organizing joint workshops and conferences, joint publications, civil society meets, media interactions, and science–media dialogues. Such collaboration is already paving the way in the Brahmaputra Basin and can be seen as an entry point of cooperation among the Brahmaputra Basin countries.

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## Appendix A

**Table A1.** Workshops, meetings and reports from Phase I to Phase III (2014–2018).

| Sl. No.        | Workshop/Meetings /Reports                                       | Location   | Month/Year   | Stakeholders Involved  | Unique Code     |
|----------------|--|------------|--------------|--|-----------------|
| <b>Phase I</b> |  |            |              |  |                 |
| 1              | Country-level meeting  | India      | January 2015 | Government and non-government stakeholders from India  | BD(I), 2015 (1) |
| 2              | Bilateral meetings with government officials in Assam            | India      | March 2015   | From following departments—Flood and River Erosion Management Authority (FREMA), Brahmaputra board, Department of Water Resources, and Department of Environment and Forest. | BD(I), 2015 (2) |
| 3              | Bilateral meeting with government officials in Arunachal Pradesh | India      | April 2015   | From following departments—Department of Water Resources, Department of Forest and Environment, and the Chief Minister’s office  | BD(I), 2015 (3) |
| 4              | Multi-lateral dialogue meeting                                   | Bangladesh | May 2015     | The dialogue moved from bilateral to multi-lateral level with the inclusion of stakeholders (track 2 level) from Bhutan and China  | BD(I), 2015 (4) |
| 5              | Dissemination meeting  | India      | August 2015  | Government and non-government stakeholders from the four countries   | BD(I), 2015 (5) |
| 6              | Consolidated report  | –          | –            | –  | BD(I), 2015 (6) |

Table A1. Cont.

| Sl. No.  | Workshop/Meetings/Reports  | Location   | Month/Year     | Stakeholders Involved   | Unique Code       |
|----------|--|------------|----------------|---|-------------------|
| Phase II |  |            |                |   |                   |
| 7        | Advisory committee meeting   | India      | February 2016  | A committee with mostly academics was formed to forward the dialogue in the respective countries.   | BD(II), 2016 (1)  |
| 8        | Role of dialogue in transboundary water management (Policy brief)  | –          | February 2016  | –   | BD(II), 2016 (2)  |
| 9        | Country-level meeting  | Bangladesh | June 2016      | Government and non-government stakeholders including Senior Secretary, Ministry of Water Resources, Bangladesh  | BD(II), 2016 (3)  |
| 10       | Bilateral meeting  | Bangladesh | June 2016      | Non-government and government stakeholders from MoWR, Joint River Commission (JRC), WARPO, Bangladesh Water Board   | BD(II), 2016 (4)  |
| 11       | Multi-lateral country level consultation meeting                   | China      | July 2016      | Meeting organized at Yunnan University between academics to identify joint research themes  | BD(II), 2016 (5)  |
| 12       | Country-level meeting  | India      | August 2016    | Non-government and government stakeholders including Secretary MoWR, India, to discuss ways for cooperation among the states within India   | BD(II), 2016 (6)  |
| 13       | Consultation meeting   | Bhutan     | September 2016 | Non-government and government stakeholders of various departments like National Environment Commission, Ministry of Agriculture and Forest, Ministry of Home and Cultural Affairs | BD(II), 2016 (7)  |
| 14       | Closed door meeting during International River Symposium           | India      | September 2016 | Government and non-government stakeholders from Bangladesh, Bhutan, and India (under Chatham house rule)  | BD(II), 2016 (8)  |
| 15       | Regional-level dialogue meeting                                    | Singapore  | October 2016   | Government and non-government representatives of four countries including the Senior Secretary, MoWR, Bangladesh  | BD(II), 2016 (9)  |
| 16       | Country-level workshop on Brahmaputra Knowledge Exchange Programme | India      | November 2016  | Attended by CSOs, academic community and state officials to bridge the knowledge gap on science, policies, and common perceptions about the Brahmaputra River                     | BD(II), 2016 (10) |



Table A1. Cont.

| Sl. No.          | Workshop/Meetings/Reports   | Location   | Month/Year     | Stakeholders Involved   | Unique Code        |
|------------------|---|------------|----------------|---|--------------------|
| 17               | Consolidated report from January–December 2016                                | –          | –              | –   | BD(II), 2016 (11)  |
| 18               | Country-level workshop  | Bhutan     | March 2017     | National deliberation between state officials and CSOs on transboundary river governance of Brahmaputra River   | BD(II), 2016 (12)  |
| 19               | Country-level workshop  | Bangladesh | April 2017     | Government and non-government stakeholders for disaster management for the Brahmaputra Basin  | BD(II), 2017 (13)  |
| 20               | Country-level workshop  | India      | June 2017      | Skill and training workshop for Tracks 3 and 2  | BD(II), 2017 (14)  |
| 21               | Regional symposium “Brahmaputra River Symposium: knowledge beyond boundaries’ | India      | September 2017 | 150 delegates including government and non-government stakeholders from within and outside the region   | BD (II), 2017 (15) |
| 22               | Brainstorming meeting between India, China, and Bangladesh                    | India      | December 2017  | The discussions during the academic meeting contributed to the understanding of the outcomes of the existing dialogue process, the gaps and challenges associated with it, and the way forward for the third phase. | BD(II), 2017 (16)  |
| <b>Phase III</b> |   |            |                |   |                    |
| 23               | Inception meeting for Phase III   | India      | May 2018       | Government stakeholders from India and Bangladesh   | BD(III), 2018 (1)  |
| 24               | Bangladesh country-level meeting  | Bangladesh | August 2018    | Government and non-government stakeholders  | BD(III), 2018 (2)  |
| 25               | Climate–water–energy nexus and south–south cooperation                        | China      | September 2018 | Government and non-government stakeholders  | BD(III), 2018 (3)  |
| 26               | CSO meet for the Brahmaputra River Basin                                      | India      | November 2018  | Non-government stakeholders   | BD(III), 2018 (4)  |

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