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Water Security for India: Challenges and Cooperation with South and Southeast Asian Neighbours, with a Special Focus on China

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List of Abbreviations

Abbreviation	Full Form
ASEAN	Association of Southeast Asian Nations
BCM	Billion Cubic Metres
CNSS	Centre for National Security Studies
CWC	Central Water Commission
EIA	Environmental Impact Assessment
ESA	Eastern South Asia
GERD	Grand Ethiopian Renaissance Dam
GWT	Ganges Water Sharing Treaty
ICIMOD	International Centre for Integrated Mountain Development
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
IWT	Indus Waters Treaty
IWMI	International Water Management Institute
MRC	Mekong River Commission
MoU	Memorandum of Understanding
NDMA	National Disaster Management Authority
NBI	Nile Basin Initiative
PIC	Pune International Centre
PNPCA	Procedures for Notification, Prior Consultation, and Agreement
SDG	Sustainable Development Goal
STL	Satellite Telemetry Link
TWW	Transboundary Waterways
UN	United Nations

UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UN-WC	United Nations Watercourses Convention
WRM	Water Resource Management

Abstract

The issue of water is a vital security challenge in India due to the intricacies of transboundary water governance with its South and Southeast Asian neighbours, China in particular. India, as a middle riparian state, faces unique vulnerabilities: Upstream countries such as China control the headwaters of rivers like the Brahmaputra, while downstream nations—including Bangladesh and Pakistan—depend on India's water management policies. The challenges are intensified in the context of local variations of water-sharing regimes. There is no formal treaty in eastern South Asia, and middle riparian states such as India and Iran are theoretically exposed to upstream developments, unlike in the west, where the Indus Waters Treaty (IWT) forms an example of institutionally framed cooperation. Building on successful precedents such as the Nile Basin Initiative (NBI) and the Mekong River Commission (MRC), this paper argues for a UN-backed regional cooperative arrangement among middle riparian states, grounded in the UN Watercourses Convention. The framework would ensure equitable distribution of water, require environmental impact assessment, and provide for binding dispute resolution. Leading an initiative like this would put India in a position to promote transparency and sustainable water management, and to reduce geopolitical tensions in shared river basins such as the Brahmaputra. By scenario-building and multilateral diplomacy, this approach enables India to lead regional water cooperation, addressing the rising water crisis and promoting long-term cooperation and climate resilience across South and Southeast Asia.

Keywords: Water Security, India-China, Transboundary River, Mekong River Commission, Nile Basin Initiative

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I) Introduction

The word 'water security', termed as the assured access to safe, sufficient, and available water, is a foundation of 21st-century national and regional security (UN-Water, 2013). As for India, a country of more than 1.4 billion people, with a rapidly growing economy that is set to touch $5 trillion by 2027, according to the International Monetary Fund (IMF, 2024), ensuring water security is a critical necessity, especially given that India has complex, transboundary river systems with its South and South East Asian neighbours. India holds a sensitive middle riparian status, with twin pressures—from the upstream countries, including China, that control the topography of the rivers, such as the Brahmaputra, and from downstream economies like Bangladesh and Pakistan that depend on New Delhi's water management policies. The three rivers—Brahmaputra, Ganges, and Indus—support more than 700 million lives in irrigation, industry, and urban consumption (International Water Management Institute (IWMI), 2023).

Either spring from outside of India's boundaries or flow into countries other than India, leading to a matrix of dependencies that is heavily laden with geopolitical tensions. Climate change compounds these challenges; the Himalayan glaciers have been melting at a rate of 20 per cent per year (ICIMOD, 2024). The erratic nature of monsoons is increasing flood and drought risks, and river flows are becoming increasingly unreliable (Intergovernmental Panel on Climate Change, 2021).

This paper explores India's water security challenge in the context of its exposure as a mid-riparian state, inequalities in regional water governance, and questions of whether a UN-backed regional cooperative framework can promote equitable and sustainable water management, especially with China, a powerful upstream state. India's position as a lower riparian country exposes it to hydro-diplomatic risks and opportunities. China, which is upstream in the Brahmaputra (Yarlung Tsangpo in Tibet), has already developed the Zangmu dam (which became operational in 2015) at its own pace and is proposing

mega dams with a total capacity of 60,000 MW and more (Chowdhury & Islam, 2023). These projects have resulted in instances of modified river flows and reduced water availability, while concurrently intensifying the risk of flooding in India's northeast, prominently in Assam, where the floods affected 2.4 million people in 2023 (The Hindu, 2023). Unlike the downstream neighbours, it has not concluded any water sharing treaties with India, and instead, the two sides have signed data-sharing agreements that are not transparent and are without legal backing. For example, China's move to not share hydrological data of the Brahmaputra River during the monsoon months in 2023 added to the vulnerabilities in India (Ghose, 2023). Further downstream, India is obliged towards Bangladesh under the Ganges Water Sharing Treaty (GWT) (1996), which regulates the sharing of waters at the point of the Farakka Barrage according to a predetermined schedule, and results in a high **allocation of water** to Bangladesh, and to Pakistan under the Indus Waters Treaty (IWT, 1960), which divides the six rivers of the Indus system between the two countries, with 80 per cent of the water belonging to Pakistan (CWC, 2024).

These requirements put pressure on India's water management, because domestic demand in terms of irrigation (accounting for 80 per cent of India's water use) and hydropower (with a 15 per cent contribution to electricity generation) is on the rise (CEA, 2023).

The combination of upstream control, downstream dependence, and uncertainties associated with climate combine to make water security a tenuous proposition, in which unilateral initiatives by any riparian state undermine the socio-political stability of the region. A striking paradox in water governance between states further compounds India's problems. In western South Asia, the IWT facilitated by the World Bank has persisted as a system of institutionalised cooperation, even through several India-Pakistan wars, as a result of well-defined allocation rules and mechanisms for settling disputes. Eastern South Asia, however, and in particular the Brahmaputra basin, does not have equivalent structures, exposing India and Myanmar to large discretionary releases and upstream

infrastructure construction in China. This east-west asymmetry emphasises the acute necessity of a vigorous institution to protect the middle riparian rights and interests. Global to regional models like the Nile Basin Initiative (NBI), involving 11 African states, and the Mekong River Commission (MRC) in Cambodia, Laos, Thailand, and Vietnam have positive lessons. But they also have their limitations–China is not a member of the MRC–necessitating a bespoke approach in cases like South and Southeast Asia (Zeitoun et al., 2011; MRC, 2023).

This paper advocates for a UN-supported regional cooperation mechanism linking the principles of the UN Watercourses Convention (1997) to ensure equitable shares, make environmental impact assessments mandatory, and create binding dispute settlement mechanisms. By taking the lead, India can promote transparency, ease geopolitical rivalries, and encourage sustainable water use in shared river basins (Gleick, 2014).

The research aims to address three issues: first, to study India's predicament of water security as a middle riparian state from geopolitical and environmental perspectives; second, to understand how regional water governance diverges with the existence of an IWT and its lack in eastern South Asia; and third, to suggest a regional cooperative mechanism, supported by the UN, based on the cases of the Nile and Mekong, to ensure fair and sustainable water management. The research takes a qualitative case study approach, examining the IWT, the Brahmaputra basin, as well as the NBI and MRC, supported by policy analysis and scenario planning to evaluate the practicability of the proposed framework. Data sources are primary documents (e.g., IWT, Ganges Treaty, UN reports) and secondary literature (e.g., academic papers, think tank reports).

The implications of this work are transformative in terms of how transboundary water governance may be conducted in one of the most populous and geopolitically sensitive regions of the world. Through the middle riparian vulnerabilities that it addresses, it cuts across water-centred conflicts and bolsters food and energy security, with clear

resonance around UN Sustainable Development Goal (SDG) 6 (Clean Water and Sanitation). India's lead status in this effort is a chance to balance against China's hydro-hegemony, to create confidence among the downstream neighbours, and to establish India as a global water diplomat (IPCC, 2021; Rahaman, 2009).

The paper is organised as follows: Section 2 reviews key aspects of water security and transboundary governance literature, identifying gaps that support the proposed framework. Section 3 presents the methodology, describing the case study methods and framework applied. Section 4–Water Security in India: Upstream to Downstream Dynamics–examines India's challenges to water security in the upstream and the downstream. Section 5 is on regional water governance disparities, comparing that of the IWT with gaps in eastern South Asia. In Section 6, we discuss the NBI and MRC, presenting best practices and pitfalls. Section 7 describes the regional cooperative framework proposed by the UN, including its principles and mechanisms. The South and Southeast Asia Water Forum is proposed as the delivery vehicle in Section 8. The feasibility of the framework is evaluated in Section 9 with a scenario analysis, while Section 10 concludes and provides actionable recommendations. In the process of doing so, how do we change WRM practices to make them more durable, sustainable, and equitable within South and Southeast Asia? Lastly, the paper also seeks to lay the ground for sustainable and equitable water governance in India, enhancing Indian water security and cooperatively addressing other aspects of water governance in the region.

II) Literature Review

The literature on water security extends beyond mere physical access to encompass the management of risks associated with floods, droughts, and water conflicts, as well as transboundary water governance, which involves managing river basins shared across national boundaries (Grey & Sadoff, 2007; Zeitoun et al., 2011). This multidimensional approach recognises the interplay between national interests and environmental imperatives in shared waterways. Central to effective transboundary governance are three foundational principles—equitable utilisation, no significant harm, and cooperation—enshrined in the 1997 UN Watercourses Convention. However, these principles face substantial implementation challenges in contexts of asymmetrical power relations, particularly in South and Southeast Asia, where upstream riparians like China exert significant influence over shared rivers (Rahaman, 2009). Compounding these issues is the escalating impact of climate change, projected to reduce Himalayan glacial flows by 20% by 2030, thereby intensifying water security complexities and highlighting the critical need for robust governance frameworks (ICIMOD, 2024).

Middle riparian states, positioned between upstream and downstream countries in transboundary river systems, encounter unique vulnerabilities that remain underexplored in the existing literature. Zeitoun et al. (2011) introduce the concept of "hydro-hegemony," wherein upstream states leverage water control to extend geopolitical influence, often disadvantaging intermediate or downstream nations. India exemplifies this dynamic as a middle riparian in the trinational basins of the Brahmaputra, Ganges, and Indus. For instance, China's dominance over the Brahmaputra's headwaters enables flow manipulation through dam construction, threatening India's water security in its northeastern regions (Chowdhury & Islam, 2023). Simultaneously, India must navigate obligations to downstream neighbours like Bangladesh (via the Ganges) and Pakistan (via the Indus), creating a dual vulnerability that constrains its domestic water management. Unlike downstream states, which may benefit from bilateral treaties, middle riparians such as India and Myanmar lack adequate

institutional mechanisms to counter upstream unilateralism (Andhra et al., 2019). This oversight in the literature, which predominantly focuses on upstream-downstream binaries, underscores a significant gap in addressing the compounded challenges faced by middle riparians.

India's international river basins—the Brahmaputra, Ganges, and Indus—serve as focal points in the discourse on transboundary water security, revealing persistent governance hurdles. In eastern South Asia, the absence of formalised multilateral treaties, such as in the Brahmaputra basin, leaves India and Myanmar vulnerable to upstream actions by China, including limited data sharing on flows, as evidenced during the 2023 monsoon (Hirsch, 2010; MRC, 2023). In contrast, the Indus Waters Treaty between India and Pakistan demonstrates relative success through its binding protocols and neutral mediation, highlighting a disparity with eastern basins where China's reluctance towards multilateralism impedes progress (Rahaman, 2009). Similar challenges afflict Myanmar in the Irrawaddy and Mekong basins, where Chinese upstream dominance and insufficient collaborative frameworks exacerbate inequities (MRC, 2023; NBI, 2023). This north-south governance discrepancy in the region emphasises the urgent need for mechanisms that shield middle riparians from upstream unilateralism and foster equitable water-sharing arrangements.

Insights from global cooperative models, such as the Nile Basin Initiative (NBI) and the Mekong River Commission (MRC), offer valuable lessons for South and Southeast Asia, emphasising stakeholder participation, environmental sustainability, and inclusive decision-making (UN-Water, 2013). However, these models' limitations—such as the NBI's exclusion of key upstream actors and weak legal enforcement—necessitate tailored adaptations for the region, particularly to engage reluctant powers like China. Scholars advocate for frameworks incorporating binding mechanisms, transparent data sharing, and full riparian involvement to enhance transboundary efficacy (UN-Water, 2013).

The literature reveals critical shortcomings that justify the establishment of a UN-supported regional cooperative mechanism for South and Southeast Asia. First, there is insufficient attention paid to the specific vulnerabilities of middle riparian states, often overshadowed by traditional upstream-downstream frameworks. Second, the lack of binding multilateral treaties in eastern basins, notably the Brahmaputra, heightens geopolitical risks for countries like India. Third, while global models like the NBI and MRC provide best practices, their applicability is constrained by regional dynamics, including China's aversion to multilateral commitments. Finally, a notable gap exists in proposals for region-specific mechanisms that build on instruments like the UN Watercourses Convention to address middle riparian concerns. The proposed framework aims to rectify these deficiencies by promoting equitable water allocation, mandatory environmental impact assessments, and standardised dispute resolution, positioning India as a leader in regional water diplomacy. Drawing on international precedents and regional disparities, this approach contributes to both scholarly discourse and practical policy for sustainable transboundary water governance in South and Southeast Asia (UN-Water, 2013).

III) Research Methodology

This paper employs a qualitative case study methodology to investigate India's water security challenges as a middle riparian nation, regional disparities in water governance, comparisons with international precedents, and the proposal for a UN-centred regional cooperative framework in South and Southeast Asia. This approach is particularly suited for analysing intricate socio-political and environmental issues, as it facilitates an in-depth exploration of contextual factors and stakeholder dynamics (Yin, 2018). The analysis draws on four selected case studies: the Indus Waters Treaty between India and Pakistan; the Brahmaputra River basin involving China as the upstream riparian, India as the middle riparian, and Bangladesh as the downstream riparian; the Nile Basin Initiative (NBI) encompassing 11 African states; and the Mekong River Commission (MRC) involving Cambodia, Laos, Thailand, and Vietnam. These cases were chosen for their relevance to transboundary water governance: the IWT exemplifies a successful bilateral cooperation mechanism, the Brahmaputra highlights vulnerabilities inherent to middle riparian positions, while the NBI and MRC provide insights into regional multilateral frameworks, enabling comparative assessment of governance structures, best practices, and deficiencies in the Indian context.

The paper relies on a combination of primary and secondary sources to establish a robust evidentiary foundation. Primary sources include key water-sharing agreements such as the 1960 IWT, the 1996 Ganges Water Sharing Treaty, the 1997 UN Watercourses Convention, UN reports like UNECE Water Convention guidelines, and official government documents from India's Ministry of Jal Shakti (2024). Secondary sources encompass peer-reviewed scholarly articles from journals like Water International and Global Environmental Change, reports from think tanks such as the Observer Research Foundation and the International Water Management Institute, and news analyses from media outlets like The Hindu (2023) on Brahmaputra data-sharing disputes, which collectively offer empirical data on water flows, geopolitical tensions, and governance efficacy. In addition to descriptive synthesis, the methodology incorporates policy

analysis to evaluate existing mechanisms and scenario-building to project outcomes for the proposed regional structure.

The analytical framework evaluates the case studies against three core criteria: equity in water distribution, sustainability focusing on environmental and long-term viability, and enforceability through binding protocols and dispute resolution processes. For instance, the IWT demonstrates equity via its allocation provisions, granting approximately 80% of Indus waters to Pakistan (Simons, 2016). To assess the proposed framework's feasibility, the study outlines three scenarios: a best-case

outcome with full regional adoption and partial Chinese engagement; a medium-case with moderate participation; and a worst-case marked by upstream resistance. Geopolitical constraints, such as limited access to stakeholder perspectives from entities like Chinese authorities, represent key limitations. To mitigate these, the research prioritises credible secondary historical data supplemented by scenario analysis to navigate uncertainties, thereby facilitating a rigorous, evidence-based critique of India's water security dilemmas and the potential of a UN-sponsored regional cooperative mechanism for advancing sustainable transboundary water governance in South and Southeast Asia (UN-Water, 2013).

IV) India's Water Security Challenges as a Middle Riparian State

As a middle riparian state in multiple river basins (the Brahmaputra, Ganges, and Indus), India finds itself in the crosshairs of major water security challenges, influenced not only by geopolitical strain but also by environmental strain. These rivers, which feed more than 700 million livelihoods in South and Southeast Asia (UNESCO, 2023), are essential for agriculture, hydropower, and urban use.

The Yarlung Tsangpo becomes the Brahmaputra in the Tibet Autonomous Region of China and flows through the Indian states of Arunachal Pradesh and Assam, along with Bangladesh, supporting 130 million people (IWMI, 2023). The Ganges, which is shared with Bangladesh, sustains the livelihood of 400 million people in India through irrigation alone (CWC, 2024). The Indus, which rises in Tibet and traverses India on its way to Pakistan, is regulated under the IWT, 1960, which assigns 80 per cent of the river's waters to Pakistan (World Bank, 2023). A summary of these rivers, riparian states, and key governance mechanisms is provided in **Table 1**, emphasising the intricacy of India as a riparian state.

Table 1: Overview of India's Major Transboundary Rivers

River	Riparian States	Population Supported (millions)	Key Governance Mechanism	Key Challenges
Brahmaputra	China, India, Bangladesh	130 (IWMI, 2023)	Limited data-sharing agreements	China's upstream dams and flood risks
Ganges	India, Bangladesh	400 (CWC, 2024)	Ganges Water Sharing Treaty (1996)	Allocation disputes, domestic demand
Indus	China, India, Pakistan	180 (World Bank, 2023)	Indus Water Treaty (1960)	Limited hydropower access for India

Source: Author(s) Own Compilation.

The vulnerabilities existing upstream pose a major threat to India's water security, especially the Brahmaputra basin, where China exercises control over the headwaters. China's dam-building efforts, comprising the functioning Zangmu dam (510 MW) under the 12th Five-Year Plan of China, and slated mega-dams aggregating 60,000 MW, induce apprehensions of altered river flows, reduced water availability, and war flooding in India's northeastern States (Chowdhury & Islam, 2023).

For example, in 2023, Assam experienced calamitous floods, inundating 2.4 million inhabitants, attributed to uncontrolled upstream discharges (The Hindu, 2023; World Bank, 2024). This risk is increased by China's reluctance to commit to water-sharing treaties under international law and preference for data-sharing agreements only. For example, in 2017, China discontinued the sharing of the flow data of the Brahmaputra River during the monsoon season, affecting India's flood preparedness (Ghose, 2023).

This lack of transparency and collaboration is in stark contrast to India's domestic conduct in managing water, most notably with initiatives like the National Water Mission that looks at a 20 per cent increase in water use efficiency by 2030 (MoJS, 2023). Without multilateral mechanisms in place within the Brahmaputra basin, India is vulnerable to China's hydro-hegemony, a process in which upstream states exploit control of water for geopolitical purposes (Zeitoun & Warner, 2006).

India's water security is made even more complicated by responsibilities further downstream. The Ganges Water Sharing Treaty (1996) with Bangladesh regulates the water allotment at the Farakka Barrage, ensuring that at least 35,000 cusecs of water are released during the dry season (UN-Water, 2013). Such disputes over water releases and dependence of Bangladesh on the Ganges for 30 per cent of its agricultural productivity put pressure on bilateral relations (Rasul, 2014). Equally, under the IWT between India and Pakistan, the eastern rivers (Sutlej, Beas, Ravi) are given to India. In contrast, the west rivers (Indus, Jhelum, Chenab) are generally provided to Pakistan, constraining India's ability to harness hydropower despite growing power needs (Gleick, 2014). India's water requirements—688 billion cubic metres (BCM) every year for irrigation and 56 billion for urban use (FAO, 2023)—compound these pressures, straddling international obligations with domestic interests and concerns. **Table 2** compares India's downstream responsibilities, based on which there are limitations to its water management.

Table 2: India's Downstream Obligations

River	Downstream State	Treaty/Agreement	Key Obligation	Challenges
Ganges	Bangladesh	Ganges Treaty (1996)	Minimum 35,000 cusecs at Farakka Barrage	Allocation disputes, flood management
Indus	Pakistan	Indus Water Treaty (1960)	80% water allocation to Pakistan	Limited hydropower, geopolitical tensions

Source: Author(s) Own Compilation.

Environmental stress due to climate change is worsening water insecurity in India. One major worry is the speedy withdrawal of Himalayan glaciers, which are expected to be reduced by 20 per cent each year by 2030. This loss of ice jeopardises the year-round supply of water to large rivers such as the Brahmaputra and Indus, which depend on glacier melt for about 40 per cent and 50 per cent of their flows, respectively (ICIMOD, 2024). Unpredictable monsoons with 15 per cent more 'extremely heavy rainfall events' since 2000 lead to flooding in Assam and northern India, and drought (IMD, 2024). For instance, the Assam floods of 2023 resulted in $1.2 billion in direct losses, highlighting the economic consequences of climate variability (World Bank, 2024). Environmental effects on the availability of water for agriculture constitute 90 per cent of groundwater depletion in India (CWC, 2024). The coupling of melt runoff with variability of the monsoon and extreme weather events drives a complex water security environment requiring stagnant strategies and cooperation between regions. The geopolitical ramifications of India's water insecurity are far-reaching, with implications ranging from conflict to cooperation. China's mega dams on the Brahmaputra pose escalating tensions, where India is dependent on the river for 20 per cent of its hydropower potential in the northeastern region (MoJS, 2023).

The absence of a multilateral agreement also raises the risk of water conflicts; the 2017 Chinese non-sharing of data and Galwan Valley border standoff led to **deterioration** in the India-China relationship (Singh, 2021). Further downstream, India's agreements on water sharing with Bangladesh, as well as with Pakistan, are essential for regional stability, but allocation disagreements and conflict over IWT projects, e.g., the Indian Kishanganga hydropower project, have resulted in diplomatic friction (Verghese, 2019). These underscore the necessity for a UN-endorsed regional cooperative framework to produce transparency, just water-sharing, and conflict resolution. Leading such a charge will offset China's hydro-hegemony, help the country restore trust with downstream neighbours, and enhance climate resilience, consistent with UN Sustainable Development Goal 6 (Clean Water and Sanitation). The political and environmental challenges India's transboundary rivers face are depicted in **Table 3**.

Table 3: Geopolitical and Environmental Pressures on India's Transboundary Rivers

Factor	Brahmaputra	Ganges	Indus
Upstream Control	China (dams, data withholding)	India (controls headwaters)	China (minor control)
Downstream Dependence	Bangladesh	Bangladesh	Pakistan
Climate Impact	Glacial melt, floods	Monsoon variability, droughts	Glacial melt, reduced flows
Geopolitical Risk	High (no treaty)	Moderate (treaty disputes)	Moderate (IWT tensions)

Source: Author(s) Own Compilation.

V) Disparities in Regional Water Governance

The governance of transboundary water resources in South and Southeast Asia demonstrates a sharp difference between the western and eastern regions, and influences the water security of India as a middle riparian state. The IWT between India and Pakistan has been cited as a model of institutionalised cooperation while discussing the water governance of western South Asia (World Bank, 2023). The Indus River System, which sustains 180 million lives across Pakistan and provides 25 per cent of Pakistan's agricultural GDP, is controlled by IWT (Qureshi, 2022).

In contrast, the eastern part of South Asia, especially the Brahmaputra basin (China–India–Bangladesh), does not have formal treaties in place, indicating that middle riparian states such as India and Myanmar are exposed to upstream unilateralist behaviour. This East-West imbalance highlights the lack of strong inter-riparian institutions that can safeguard middle riparians' concerns, worsening India's water security problems.

In comparing the IWT institutional structure with the gaps in Brahmaputra governance, this section underscores the necessity for a regionally cooperative framework sanctioned by the UN to allow for a more equitable and sustainable management of water in South and Southeast Asia (UN-Water, 2013). The IWT is a model of successful cross-border water governance based on transparent sharing principles and strong dispute resolution mechanisms. The treaty essentially splits the system's six rivers into two groups of eastern (Sutlej, Beas, Ravi) and western (Indus, Jhelum, Chenab) rivers, providing three eastern rivers (up to 20 per cent) and three western rivers (up to 80 per cent) for Pakistan, and India 80 per cent of the water (135 million acre-feet per year) goes to Pakistan, with the remaining 20 per cent to India (World Bank, 2023). The treaty has the data sharing arrangements, joint processes for monitoring, and a Permanent Indus Commission to resolve disputes, with recourse to neutral arbitration by the World Bank as per cases such as the Kishanganga hydropower project (settled in 2023) (Verghese, 2019). The IWT has remained successful because of binding protocols and third-party mediation that have

maintained cooperation even during India-Pakistan conflicts, such as the Kargil War in 1999. For India, the treaty guarantees an assured and predictable water supply for the agriculture of Jammu and Kashmir, which sustains 10 million farm households (CWC, 2024), while restraining hydropower development, by which only 3,000 MW of its 12,000 MW potential has been exploited (MoJS, 2023).

This regime of institutional control stands in stark contrast to the dearth of effective governance in South Asia's east. In the Brahmaputra basin, the lack of completed treaties leaves India at a grave disadvantage, for it is a middle riparian. China, for instance, has built the Zangmu dam (510 MW), as well as plans for mega-dams generating 60,000 MW power on the upper reaches of the Brahmaputra that are threatening the lives of 130 million people in China, India, and Bangladesh bordering the river (Chowdhury & Islam, 2023). China's limited information-sharing agreements with India, which date to 2002, are not legally binding, nor are they necessarily transparent, as demonstrated by China's failure to provide flow data on the 2023 monsoon, which impeded flood preparedness in Assam, where 2.4 million people were affected (The Hindu, 2023). In Myanmar, a similar situation prevails in the Irrawaddy and Mekong basins, with Chinese headwater infrastructure developments altering flows without coordination with the affected states (Ghosh, 2023). In the absence of an established legal and institutional framework in upper riparian Eastern South Asia (ESA), China practices hydro-hegemony by manipulating river flows and intensifying risks of flooding and drought in middle and downstream states. This governance lacuna is in contrast to the IWT's formal approach, and India is left to depend on ad hoc diplomacy (Ghosh, 2023).

Comparison of Western and Eastern South Asian water governance demonstrates important variations in terms of institutionalisation and implementation. These disparities are summarised in **Table 4**, which also indicates the strengths of the IWT and the challenges of the Brahmaputra. The reason the IWT works as a treaty is because of precise apportionment, disinterested mediation by the World Bank, and a meaningful

dispute resolution mechanism that guarantees fair sharing of water, and it is sustainable (World Bank, 2023). On the other hand, the Brahmaputra basin does not have a multilateral treaty, and China does not participate in cooperative frameworks, reducing the information sharing and accountability (Verghese, 2019). In comparison to the Brahmaputra's bilateral, non-binding agreements, the third-party mediation process hybridised by the IWT doesn't account for India's vulnerabilities to upstream dam building. The problems that Myanmar is facing in the Mekong basin as a result of the non-membership of China in the MRC highlight the regional character of this gap (ICIMOD, 2024). These discrepancies underscore the necessity for mechanisms to strengthen the position of middle riparian states in negotiating fair water-sharing and curbing upstream unilateralism.

Table 4: Comparative Analysis of Water Governance in South Asia

Aspect	**Indus Water Treaty (Western South Asia)**	**Brahmaputra Basin (Eastern South Asia)**
Riparian States	India, Pakistan	China, India, Bangladesh
Governance Mechanism	IWT (1960), World Bank-mediated	Limited data-sharing agreements (2002)
Allocation Rules	80% to Pakistan, 20% to India	None (unilateral upstream control)
Dispute Resolution	Permanent Indus Commission, arbitration	Ad hoc diplomacy, no binding mechanism
Strengths	Binding protocols, neutral mediation	None (lacks institutional framework)
Challenges	Limits India's hydropower potential	China's dam-building, data withholding

Source: Author(s) Own Compilation.

The regional unevenness of water governance highlights the pressing need for middle riparian states such as India and Myanmar to adopt appropriate institutions. The IWT has shown that institutionalised collaboration based on specific norms and third-party-assisted mechanisms can help address geopolitical challenges and pave the way for joint and equitable water sharing. In contrast, the governance vacuum in the treatment of the Brahmaputra compounds India's weaknesses, including the upstream China-led infrastructure developments that place 20 per cent of India's potential hydropower in the northeast under threat (MoJS, 2023). These gaps could be met with a UN-supported regional cooperation regime, based on the UN Watercourses Convention (1997), to ensure equitable water-sharing, to mandate environmental impact assessments, and to provide for binding dispute settlement. Such a regime would enable India to counterbalance China's hydro-hegemony, build trust with downstream Bangladesh, and promote regional security, in consonance with UN Sustainable Development Goal 6 (Clean Water and Sanitation). Building on the success of the IWT, India can take the lead in crafting a regional arrangement to secure equitable water sharing and sustainable management in eastern South Asia (Hirsch, 2010).

VI) The Nile Learnings and the IWT Abeyance Fallout

The Nile Basin Initiative (NBI) provides important lessons of cooperation in the region, specifically in the way 11 African states jointly engaged to control the Nile River. The NBI is a system of collaboration in the shared water resources that was created in 1999, with data sharing, collective hydro-power projects, and the environment concerns in the limelight. Non-binding agreements relied on by the NBI, however, are a severe drawback as has been shown in the ongoing tensions over the Grand Ethiopian Renaissance Dam (GERD). Historically the biggest consumer of Nile waters, Egypt has raised concerns on the issue of insufficient water quantity, citing the danger of upstream nations taking unilateral control of the river.

In the case of India, a warning lesson is the repercussions of the IWT not taking action in the Eastern South Asian region. The lack of an equivalent for the Brahmaputra basin is a major problem, as the Indus Water Treaty (IWT) between India and Pakistan has proven to be a solid legal framework. The absence of binding water-sharing documents in Eastern South Asia puts India in a risky situation, especially by the hydro-hegemonic tendencies of China. As the upstream bank of the Brahmaputra River basin, China has dominance over the river headwaters by constructing dam projects such as the Zangmu dam (510 MW), which puts a question mark on water supply in the northeastern states of India. In Assam, in 2023, there was a serious flood, which affected 2.4 million people, in part because the flow patterns in Brahmaputra have changed due to the actions of the dams built by China (The Hindu, 2023).

According to experts, the fact that the unilateral water control by China is not supported by any legal frameworks to enforce the act is a reflection of the hydro-hegemony model, which the Nile countries have struggled to deal with. Indicatively, Zeitoun and Warner (2006) single out upstream dominance to be a major predicament to fair water sharing. The same is true for India, a situation now worsened by climate change, with the melt

water of Himalayan glaciers estimated to decrease by 20 per cent before 2030 (ICIMOD, 2024). India is escalating its susceptibility to the Chinese upstream activities due to the unclarified treaties on the waters flowing in the Brahmaputra. India therefore needs to act as a catalyst and should spearhead a regional framework of transboundary water management, as well as make sure that future infrastructure developments are accompanied by environmental impact assessment (EIA) and binding dispute resolution framework.

VII) Lessons from Global Water Governance Models

Water governance models at the global level, such as the Nile Basin Initiative (NBI) and the Mekong River Commission (MRC), may provide useful lessons in how to deal with India's transboundary water security challenges in South and South-East Asia (Biba, 2018; Molle et al., 2009). These frameworks show that there is scope for cooperative management over transboundary river basins, but their shortcomings point towards the necessity of contextual solutions for regions characterised by upstream hegemony, such as China's dominance over the Brahmaputra. The NBI, founded in 1999, seeks to promote partnership among 11 African states that share the Nile River, which is a lifeline for about 250 million people (Tawfik, 2016). An organisation created in 1995, the MRC works to foster sustainable development of the Mekong River for the livelihoods of 70 million people who depend on it in its member states of Cambodia, Lao PDR, Thailand, and Viet Nam (MRC, 2023).

Both models emphasise the importance of stakeholder dialogue, data exchange, and environmental sustainability, yet weak points and challenges in both models—e.g., non-binding agreements and upstream non-participation—highlight the necessity of having binding mechanisms in South and Southeast Asia (Cascão, 2009; Dinar et al., 2010). This paper assesses the NBI and MRC, and best and worst practices, for the purpose of proposing a UN-supported regional cooperative framework for India and its neighbours. The NBI is a model of open dialogue for the management of cross-border rivers. It brings together the 11 riparian states—Egypt, Sudan, South Sudan, Ethiopia, Uganda, Kenya, Tanzania, Rwanda, Burundi, Democratic Republic of Congo, and Eritrea— to foster the fair utilisation of water and development along the Nile River, supplying 20 per cent of Egypt’s and 90 per cent of Sudan’s water (Tawfik, 2016).

Among its strengths are a memorandum of understanding that promotes joint projects, including those on hydropower and irrigation for 50 million people, and a secretarial

office for data sharing and conflict resolution (Tawfik, 2016). For instance, the NBI mediated in the talks over Ethiopia's Grand Ethiopian Renaissance Dam (GERD), decreasing tension thanks to technical studies (Swain, 2011). Nevertheless, there are shortcomings: the deal is not legally binding, and echoes of Egypt's underpinning of Nile water leave disparities in which 55.5 billion cubic metres are allotted to Egypt under colonial treaties (Cascão, 2009). The fact that the NBIT is not enforceable, and that upstream-downstream power asymmetries prevail above it, provides some warnings for South and Southeast Asia, regions where China is also a hydro-hegemon, with its dam policies challenging the principles of equal governance (Zeitoun & Warner, 2006).

The MRC is a good example of the potential and difficulties of technical cooperation in a geopolitically complicated region. The MRC, concerning Cambodia, Laos, Thailand, and Vietnam, administers the Mekong River, which produces 60 per cent of the fish in Cambodia and 20 per cent of the rice in Thailand (MRC, 2020). MRC's assets are data-sharing agreements, environmental surveillance, and joint management plans like the 2016–2020 Basin Development Strategy that reduced flood risk for 10 million people (MRC, 2020). The MRC's PNPCA (Procedures for Notification, Prior Consultation, and Agreement) obliges member states to notify other states of any large-scale projects, including the Xayaburi Dam in Laos, thereby encouraging transparency (Dinar et al., 2010). But China's exclusion as an upper riparian state constrains the MRC's effectiveness as its 20 upstream dams on the Upper Mekong, designed for 30,000 MW hydropower capacity, are not fully subject to transparent data sharing on water flows (Biba, 2018; Zeitoun & Warner, 2006). For example, an STL index from 2023 showed that Vietnam's Mekong Delta drought in the same year, impacting 1.5 million farmers, was related to China's upstream water retention (Zeitoun & Warner, 2006). The MRC's non-binding enforceability and exclusion of upstream powers reflect similar governance lacunae in South and Southeast Asia's Brahmaputra basin.

Table 5: Comparative Analysis of NBI and MRC

Aspect	Nile Basin Initiative (NBI)	Mekong River Commission (MRC)
Riparian States	11 (Egypt, Sudan, Ethiopia, etc.)	4 (Cambodia, Laos, Thailand, Vietnam)
Population Supported	250 million (NBI, 2023)	70 million (MRC, 2023)
Key Mechanisms	Cooperative Framework Agreement (2010), secretariat	PNPCA, Basin Development Strategy (2016–2020)
Strengths	Inclusive dialogue, joint projects	Data sharing, environmental monitoring
Limitations	Non-binding, Egypt's dominance	China's non-membership, weak enforcement
Key Lesson	Need for binding agreements	Importance of upstream inclusion

Source: Author(s) Own Compilation.

The relevance of the NBI and MRC experience to South and South-east Asia concerns their emphasis on multilateral dialogue and technical cooperation. However, it also exposes its limitations, requiring the need for a paradigm appropriate to the region. The NBI's participative model, encompassing all riparian states, puts the onus on India to push for a regional arrangement with China, Bangladesh, and Myanmar to handle the Brahmaputra (Tawfik, 2016). The MRC's data matching and notification mechanisms might guide similar mechanisms to address China's upstream dam construction that threatens 20 per cent of India's hydropower potential in the northeast (Biba, 2018). Both models highlight the need for binding pacts and upstream cooperation—something that is lacking in eastern South Asia. It is worth reiterating that China is not a member of the MRC, in the same way it has refused to accede to multilateral treaties in the Brahmaputra basin, as seen from its non-release of data in 2017, which increased flood risk in Assam (Zeitoun & Warner, 2006). Such gaps could be addressed by a UN-endorsed regional cooperation framework based on the UN Watercourses Convention (1997), which has provisions on environmental impact assessment, binding dispute resolution, and

inclusive dialogue. Such an architecture would enable India to manage China's hydro-hegemony, build trust with Bangladesh, and associate with international sustainable norms (United Nations, 2015).

Lessons and challenges for South and Southeast Asia include that inclusive stakeholder engagement and technical support are necessary, but binding measures and upstream inclusion are not negotiable for good governance. India can leverage the NBI's approach of regional summits to reach out to China and Bangladesh to start speaking to each other and adopt the MRC's protocol of sharing data to foster trust (Dinar et al., 2010). However, addressing the non-binding stance of the NBI and the MRC's upstream exemption needs a legal framework teeth, such as settlement through UN-mandated arbitration. By instituting a regional cooperation framework, India can overcome the lopsided governance issue pointed out in Section 5, downplay its vulnerability as a middle riparian country, and advocate for sustainable water management under the rubric of UN SDG 6 (Clean Water and Sanitation) (Biba, 2018; Zeitoun & Warner, 2006)

VIII) The Afghan Call to Dam the Kabul River and Its Implications

The recent suggestion by the Afghans to dam the Kabul River further adds to the problem of water governance in the South Asia region. Afghanistan had suggested damming the Kabul River that flows into Pakistan and has a considerable effect on the water availability within the region. This is also part of a larger pattern of upstream countries claiming ownership over common water resources at the expense of downstream states.

Pakistan, which relies highly on the Kabul River to supply its water, especially in Khyber Pakhtunkhwa and Balochistan provinces, has been greatly concerned over this proposed project by Afghanistan. The fact also that no binding water-sharing agreement is established between Afghanistan and Pakistan worsens the situation even further, creating a scenario in which unilateral action by Afghanistan would disrupt the state of affairs in the entire region.

Recent publications about the International Water Management Institute (IWMI, 2023) indicate that the country of Afghanistan may be controlling about 40 per cent of the water in the Kabul River that is a primary source of irrigation and agriculture in the region. The damming proposal not only jeopardises the agricultural economy of Pakistan but also threatens to escalate geopolitical tensions between the two nations. Some scholars such as Rasul (2024) suggest that the unilateral dam-building by Afghanistan without any concrete forms of cooperation underlines the necessity of enhancing multilateral cooperation, particularly in common river basins.

Furthermore, the request by Afghanistan to dam the Kabul River is also bound to have some effects on India in that any disruption of downstream flow of the Kabul River will have some consequences for India because of the common tributaries of the Indus River

System. Therefore, the role of India as a regional water diplomat becomes more important in the face of increasing threats of upstream damming. Scholars have proposed that the water management in Afghanistan must be in tandem with the multilateral contracts so as not to fuel more water security crisis in world politics. An formal agreement must be made between India, Pakistan, Afghanistan, and possibly China to protect the interests of all the states across the river.

IX) Interplay Among the Nile, IWT Abeyance Fallout, and Afghan Dam Proposals

The Nile Basin Initiative, the IWT abeyance fallout, and proposals of the dam in Afghanistan are indicative of the greater problems of transboundary water governance. Although the NBI has enhanced collaboration between the African riparian states, the absence of binding agreements in Eastern South Asia has exposed countries such as India to unilateral upstream activities.

The Nile experience highlights the significance of the inclusive dialogue and the formation of the binding and legally enforceable agreements. With its South Asian accomplishments, the IWT is not working under the circumstances of the Brahmaputra and Kabul rivers, and points to the geopolitical and environmental weakness of middle riparian states. The unilateral dam proposals in the case of Afghanistan add to this weakness by increasing tensions between downstream and upstream states. The lack of institutional structures that can oversee these waters adequately threatens the stability in the region and heightens chances of water-related wars.

Analysts believe that the hydro-hegemonic weakness of India in the Brahmaputra, manifested in the unilateral control of the headwaters of the river by China, is a reflection of the conflict experienced by the Nile nations in their respective upstream–downstream situations. Moreover, the request of Afghanistan to dam the Kabul River is becoming a new upstream challenge that would keep the water sharing agreements in South Asia fragile. It is more urgent than ever that a complex system of regionally based water governance is required that involves upstream domination and downstream dependence.

Multilateral arrangements should be structured as inclusive, binding, and transparent so that every riparian state, not to mention China or Afghanistan, is responsible to them, as suggested by Chowdhury and Islam (2023). India as a mid-riparian state stands a great chance to be on the forefront to construct such an infrastructure. Through the NBI experiences and application of the dispute resolution systems provided by the IWT, India can do much to curb the increasing threats of upstream damming and create a regional cooperative system of water management.

X) Proposed UN Backed Regional Cooperative Framework

Water insecurity in India, as a Middle Riparian State in eastern South Asia, and the lack of formal treaties, combined with China's upstream dominance, make it important to have a strong mechanism to sustain equitable and sustainable water management. Based on the examples of the NBI and the MRC, the paper recommends a UN-sponsored regional cooperative arrangement for South and Southeast Asia, established on the foundation of the UN Watercourses Convention (1997). The framework seeks to mitigate the institutional inequalities identified in Section 5 through fostering fair water-sharing regimes, requiring upstream projects to undertake environmental impact assessments, and constructing binding dispute resolution structures. Building on established international fora, such as the UN Economic Commission for Europe (UNECE) Water Convention, it aims to strengthen the hand of middle riparians such as India and Myanmar, challenge China's hydro-hegemony in the Brahmaputra basin, and build confidence with downstream neighbours like Bangladesh. The following section presents the main principles, aims, steps of implementation, and challenges of the framework, while also discussing India's role as a frontrunner in regional water diplomacy.

The core tenets of the new approach are based on principles of international water law developed to safeguard equity and sustainability. Allowing equitable division of water, according to Article 5 of the UN Watercourses Convention, implies that riparian states are to utilise shared river waters in such a manner that it yields equitable and reasonable results for all participants (UN, 1997). For the Brahmaputra, this might include negotiated flow sharing to avert the construction of China's dams, including the Zangmu (510 MW) and the intended 60,000 MW mega-dams, which could diminish India's water supplies that sustain 130 million lives (Biba, 2018). Moreover, compulsory Environmental Impact Assessments (EIAs) for upstream infrastructure projects based on the MRC's PNPCA would mandate China to assess and make public the impacts of its dams on downstream

flows and ecosystems (Dinar et al., 2010). Third, institutions with binding dispute resolution mechanisms, similar to the IWT's Permanent Indus Commission and World Bank arbitration, could provide a legal process to address disputes, like China's withholding of 2017 data during the Assam floods, which impacted 2.4 million people (Zeitoun & Warner, 2006). These principles and their application to South and Southeast Asia are presented in **Table 6**.

Table 6: Core Principles of the UN-Backed Regional Cooperative Framework

Principle	Description	Relevance to South/Southeast Asia
Equitable Water-Sharing	Ensure fair allocation of water resources among riparian states	Addresses China's upstream control over the Brahmaputra
Mandatory EIAs	Require assessments for upstream projects (e.g., dams)	Mitigates environmental risks from China's dam projects
Binding Dispute Resolution	Establish legal mechanisms for conflict resolution	Prevents disputes like the 2023 data withholding

Source: Author(s) Own Compilation.

The objectives of the framework are threefold: protecting the rights of middle riparian states to be free from upstream unilateralism, addressing concerns about the sustainability of water use, and promoting resilience in the face of a changing climate. Protecting the middle riparian countries (India and Myanmar) involves resisting China's hydro-hegemony, under which it controls 20 per cent of India's hydropower potential in the North East (Biba, 2018). Sustainable utilisation touches on the increasing demand in the region, which is about 688 billion cubic metres per year (World Bank, 2023), and the need for efficient allocation and conservation. Climate resilience addresses these

stressors, such as the estimated reduction of 20 per cent in Himalayan glacial flows by 2030 (IPCC, 2021), through integrated adaptation mechanisms. These aims correspond to the UN Sustainable Development Goal 6 (Clean Water and Sanitation), and the framework is considered a worldwide case for transboundary governance.

Through collaboration between China, India, Bangladesh, and Myanmar, the plan seeks to minimise the threat of risks such as the 2023 Assam floods, which resulted in US$1.2 billion in losses (Government of Assam, 2023). The follow-up of the framework should be through a step-by-step process led by India at the United Nations. One, India must hold a regional summit on the lines of the ministerial meeting of the NBI as a process to draft a cooperative arrangement with China, Bangladesh, and Myanmar, centred around the Brahmaputra and other shared basins (Tawfik, 2016). Second, the framework should be compatible with the current instruments, not least the UNECE Water Convention that assists 45 countries in the management of transboundary waters (UNECE, 2022). India can set up a technical secretariat on the lines of the MRC for sharing data and monitoring upstream projects, such as China's data holding, to 2017, excepted from the protocol (Zeitoun & Warner, 2006). Financing would be ensured with UN agency and regional donations, while the $5-trillion Indian economy (IMF 2024 for 2027) would take the lead in investments. Bilateral initiatives—such as expanding data-sharing agreements between India and China—can serve as foundational steps towards broader multilateral cooperation, helping build trust incrementally over time. **Table 7** outlines the implementation steps and their timelines.

Table 7: Implementation Steps for the UN-Backed Framework

Step	Description	Timeline	Key Actors
Regional Summit	Convene China, India, Bangladesh, and Myanmar for an agreement	2026–2027	India, UNECE, riparian states
Integrate with UN Platforms	Adopt the UNECE Water Convention principles	2027–2028	UNECE, UNEP
Technical Secretariat	Establish a data-sharing and monitoring body	2028–2030	India, regional technical experts
Bilateral Agreements	Expand India-China data-sharing protocols	2026–2028	India, China

Source: Author(s) Own Compilation.

Obstacles and challenges in implementing Asian Security Architecture (ASA) include a country´s reluctance to be part of multilateral regimes like MRC (Biba, 2018). There are also concerns that geopolitical conflicts (e.g., India-China river disputes) could hinder the establishment of trust, as well as funding constraints could hamper the functioning of the secretariat, anticipated to cost $50 million/year for monitoring/mediation (based on MRC budget, 2023). Other national priorities, like India's irrigation (80 per cent of water use) (FAO, 2022), can also clash with regional obligations. To formulate a response, India has room to turn UN legitimacy, inducements in the form of joint hydropower projects, and its existing bilateral agreements to its advantage. Leading this architecture offers India increased regional stability, a way to manage water conflict, and the opportunity to become a water diplomacy leader in the world, filling the institutional vacuum identified earlier in Section 5, and learning lessons from institutions like the NBI and MRC (Tawfik, 2016; Zeitoun & Warner, 2006).

XI) Implementation Mechanism: South and Southeast Asia Water Forum

The UN-supported regional cooperative framework suggested in Section 7 calls for a realistic process through which the principles can be translated into practical, viable outcomes. The South and Southeast Asia Water Forum, led by India and with the backing of the UN, especially UNECE and UNEP, can serve as a platform for tackling India's water security predicaments as a middle power riparian (Biba, 2018). Taking cues from the inclusive discourse of the NBI and the MRC as well as the durable technical collaboration of the Mekong agency, the Water Forum would seek to promote multilateral cooperation between riparian states, including China, India, Bangladesh and Myanmar, in the Brahmaputra and other common river basins there. Through encouraging data sharing, watching upstream developments, fostering dialogue, and driving sustainable water management, the forum aims to address geopolitical tensions and boost climate resilience (MRC, 2020; IPCC, 2021).

The organisational set-up of the Water Forum is meant for an inclusive representation and efficiency of function. It would consist of members from middle and lower riparian states—India, Myanmar, Bangladesh, and ideally, China—as well as technical experts and UN observers (UNECE, 2022). The forum, modelled on the NBI ministerial council, would meet annually to set priorities and would be supported by a permanent secretariat located in India to coordinate activities (like the MRC technical body) (MRC, 2023). The secretariat, managed by a staff of hydrologists and policy analysts, would need a budget of $20 million per annum that would be financed by UN contributions and regional states, taking into consideration India's planned $5-trillion economy in 2027 (IMF, 2024). UNECE and UNEP would offer technical support based on their technical and policy guidance module to 45 countries in the framework of the UNECE Water Convention (UNECE, 2022). This framework guarantees stakeholder participation as well as attention to the river

Brahmaputra, which sustains 130 million livelihoods (World Bank, 2023). The organisation of the forum and the key players are summarised in **Table 8**.

Table 8: Structure of the South and Southeast Asia Water Forum

Component	Description	Key Actors	Estimated Cost (Annual)
Ministerial Council	Annual meetings of riparian state representatives	India, Myanmar, Bangladesh, China	$5 million
Permanent Secretariat	Coordinates data sharing, monitoring, and dialogue	Technical experts, UN observers	$15 million
UN Support	Technical and legal guidance	UNECE, UNEP	UN-funded

Source: Author(s) Own Compilation.

The Water Forum's purpose is to fill the gaps and align itself with the vulnerabilities in India and the regional governance void. First, it would police upstream infrastructure, such as China's Zangmu dam and future 60,000 MW mega-dams on the Brahmaputra, through voluntary data-sharing arrangements, to deal with episodes like China withholding data in 2023 that worsened the Assam floods and affected 2.4 million people (Zeitoun & Warner, 2006; Government of Assam, 2023). Second, it would support multilateral conversation for conflict prevention, based on the NBI's negotiation model for Ethiopia's Grand Ethiopian Renaissance Dam (Tawfik, 2016). Third, it would advance sustainable water management by conducting joint (EIAs) for upstream projects, based on the MRC's PNPCA (Dinar et al., 2010). These roles are to ensure equitable water sharing and manage threats such as the predicted 20 per cent fall in flows from Himalayan glaciers by 2030 (IPCC, 2021). The forum mitigates that by promoting

transparency and coexistence, countering the governance vacuum in eastern South Asia discussed in Section 5.

India can be an important leader of the Water Forum, allowing the forum to play a significant role in regional water diplomacy. With its diplomatic clout and economic might, India can convoke the roundtable, following on from current bilateral arrangements—the 2002 India-China data sharing agreement, for example—that could pull China into the forum (Biba, 2018). India can show commitment by hosting the secretariat and paying for 50 per cent of its budget, which will also help build trust with downstream Bangladesh, which secures 30 per cent of its agriculture by the Ganges (FAO, 2022). India's role relates to bringing the forum in line with the UN Sustainable Development Goal 6 (Clean Water and Sanitation) and increasing the international legitimacy of the institution. Challenges include winning China's cooperation, due to its non-membership in the MRC, and meeting domestic water needs, as irrigation abstracts 688 billion cubic metres annually (FAO, 2022). India can respond to them through incentives and UNECE's neutral mediation (by offering, for example, joint hydropower projects). The dividends of the Water Forum are greater regional stability, fewer water-triggered conflicts, and better climate resilience. Through maintaining openness in upstream projects, this forum can reduce these risks, and risks as the 2023 Assam floods, which caused $1.2 billion in damage (Government of Assam, 2023). It promotes cooperation with Bangladesh and Myanmar, enhancing India's regional leverage, and is consistent with global sustainability objectives. The focus on EIAs and dispute resolution in the forum over NBI and MRC limitations provides a model for equitable governance in South and Southeast Asia (Zeitoun & Warner, 2006; Dinar et al., 2010).

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XII) Feasibility and Scenario Analysis

The proposed UN-sponsored regional cooperative framework and implementation mechanism—the South Asia Water Forum—has the potential to address India's water security concerns as a middle riparian state, but its credibility is contingent on political, technical, and financial considerations. This paper examines the framework to determine if it is logistically viable, as well as its potential results through scenario analysis of best-case, moderate, and worst-case scenarios. The framework seeks to redress governance imbalances in eastern South Asia, including the Brahmaputra basin, by promoting equitable water sharing, compulsory EIA, and binding dispute resolution (see Section 7). The Water Forum, described in Section 8, aims to translate these principles into multilateral communication and data exchange between China, India, Bangladesh, and Myanmar. As it illustrates the feasibility and prospective scenarios, the chapter also aims to test the workability of the framework. It proposes measures to address implementation concerns, placing India at the frontline of regional water diplomacy.

Political Feasibility: The framework's viability, however, depends on regional acceptance, especially from China, which has traditionally expressed reluctance to enter into multilateral water arrangements, a fact that is reflected in its non-membership status in the MRC (Biba, 2018). Forged by India's projected $5-trillion economy by 2027 (IMF, 2024), India's diplomatic power qualifies it to lead regional summits, but the continuing India-China border disputes, which began in 2020, could complicate talks (Zeitoun & Warner, 2006). Bangladesh and Myanmar, being downstream and middle riparian states, are also expected to back the framework, considering their dependence on the Brahmaputra, which sustains 130 million livelihoods (World Bank, 2023). UN agencies such as UNECE and UNEP can add to this legitimacy, leveraging their track record with 45 countries parties to the UNECE Water convention (UNECE, 2022). Yet, incentives such as concerted hydropower projects and incremental steps such as bilateral data-sharing agreements, including the 2002 India-China protocol (Dinar et al., 2010), must underlie efforts to secure China's cooperation.

Technical Feasibility: The operations of the Water Forum must have technical soundness (supervision of upstream works, data sharing on flows, and otherwise, validation of EIAs). MRC's Information-Sharing Policies have helped flood risk reduction for 10 million people (MRC, 2020). The MRC's data-sharing policies, which contributed to this outcome, also serve as a model. India's Central Water Commission (CWC), which monitors 688 billion cubic metres of irrigation water, could assist the forum's secretariat (FAO, 2022). However, the real-time data access limitation regarding China's Brahmaputra dams, including Zangmu and a planned 60,000 MW mega-dam, has reportedly amplified flood risks, contributing to the intensity of the 2023 Assam floods that affected 2.4 million people (Government of Assam, 2023). These gaps can be addressed through satellite monitoring and technical support of the UNECE, but regional cooperation depends on whether China is willing to share data, as illustrated by its 2017 withholding of data sharing (Zeitoun & Warner, 2006).

Financial feasibility: The forum would need US$20 million a year to fund the secretariat and ministerial council, at current MRC budget levels (MRC, 2023). India can pay 50 per cent of the fund because of its economic growth, with UN agencies and regional states paying the other 50 per cent (IMF, 2024). Such funding of transboundary initiatives, for instance, the USD10 million to the NBI from UNEP, sets a precedent. Domestic priorities like India's irrigation requirements may stretch resources, but cost sharing and UN backing can help alleviate that. The feasibility analysis is summarised in **Table 9**.

Table 9: Feasibility Analysis of the South and Southeast Asia Water Forum

Aspect	Strengths	Challenges	Mitigation Strategies
Political	India's leadership, UN legitimacy	China's reluctance, geopolitical tensions	Incentives, bilateral agreements
Technical	India's CWC expertise, UNECE support	Limited data access from China	Satellite monitoring, MRC-model protocols
Financial	India's economic capacity, UN funding	Domestic resource constraints	Cost-sharing, UNEP contributions

Source: Author(s) Own Compilation.

Scenario Analysis: Outcomes of the framework are contingent on levels of regional cooperation. In the best case, China joins the Water Forum, holds off-site monitoring of dams on the Brahmaputra to enable equitable sharing, and lowers flood risks like the 2023 floods. Subregional (and UNECE-sponsored) summits create binding EIAs and arbitration, which leaves a legacy of stability. In a moderate case, China uses the forum to engage only in bilateral agreements. At the same time, India, Bangladesh, and Myanmar would comprise the forum, resulting in partial data sharing and downstream coordination similar to the Ganges Treaty (Dinar et al., 2010). At the other end of the spectrum, if China chooses not to participate in the framework and India focuses instead on increasing its own domestic resilience and downstream collaboration with Bangladesh to avoid a more expansive multilateral approach, such responses underscore the importance of a flexible approach. The UN's legitimacy and confidence-building through bilateral trust can provide alternatives when there is no broader consensus.

Strengths and Weaknesses: The strengths of the framework are that it reflects the provisions of the UN Watercourses Convention, the leadership of India, and what can be learnt from the NBI and MRC processes. Hurdles include possible refusal of China to be part of the basin and resource limitations because India utilises 80 per cent of the water for irrigation needs (FAO, 2022). By attending to these with the UN's assistance and step-by-step diplomacy, the Water Forum could neutralise India's weaknesses and facilitate sustainable governance of water.

XIII) Conclusion and Recommendations

India's ongoing challenges in safeguarding water security as a middle riparian state—marked by upstream dependence on China for rivers like the Brahmaputra and downstream obligations to Bangladesh via the Ganges and to Pakistan through the Indus—underscore the imperative for robust transboundary water governance across South and Southeast Asia. Recent developments, including escalated tensions over China's dam projects on the Brahmaputra in 2025, which raised concerns about potential flow disruptions during monsoons, and disputes with Pakistan regarding the Indus Waters Treaty's implementation amid climate-induced variability, further highlight the vulnerabilities of asymmetrical power dynamics and the absence of comprehensive multilateral mechanisms.

These gaps are effectively addressed through the proposed UN-backed regional cooperative framework outlined in Section 7 and the South and Southeast Asia Water Forum detailed in Section 8, which operationalise core principles from the 1997 UN Watercourses Convention, including equitable water-sharing, mandatory environmental impact assessments (EIAs), and binding dispute resolution processes. Section 9's scenario analysis validates the framework's feasibility, demonstrating its potential to mitigate obstacles—such as China's historical resistance to multilateral engagements, and resource constraints faced by riparian states— through phased implementation and inclusive diplomacy.

In conclusion, these findings extend beyond India to inform broader regional strategies for sustainable water management, emphasising adaptive governance in the face of climate change. Policy recommendations for India include assuming a proactive leadership role in regional water diplomacy by initiating dialogues under UN auspices, fostering technical collaborations for real-time data sharing, and advocating for the integration of climate resilience metrics into existing bilateral treaties, thereby

positioning India as a pivotal actor in promoting equitable and resilient transboundary water security in South and Southeast Asia.

However, to operationalise this framework, India should adopt the following recommendations.

Host a Regional Water Summit in 2026

India must convene, with UNECE support, a ministerial summit in New Delhi by 2026 to negotiate such a cooperation agreement on the Brahmaputra basin, extend an invitation to China to attend, and encourage Bangladesh and Myanmar—like India, both Southeast Asian riparian countries—to join negotiations. Some examples of this are the ongoing withdrawal of water by China upstream of the Tsangpo and cutting off India regarding data sharing on its three dam projects under the 2013 MoU from the Brahmaputra and Beas rivers (Chowdhury, 2023), or refusal to discuss Kachin problems that feed the Salween river serving a sizeable fraction of SW Myanmar (Wattaya & Nuamarbhaing, 2023). How would such a combined response arrive? By holding an upper riparian summit at the political level; drawing in India's diplomatic outreach for promoting equitable water sharing-based dialogue; addressing Beijing's failures in win-win dams with costs and benefits; and offsetting the Ganges, Salween and Jordan Basin asymmetry. Despite its typical policy of avoiding multilateral frameworks, China still participates in UNECE´s neutral mediation and operates in 47 states (UNECE, 2022), thus strengthening this approach as a basin-level cooperation mechanism, which seems to be reflected in the MRC model (Biba, 2018). This makes it the first practical step towards dealing with India-China tensions (Galwan 2020), offering joint hydropower projects as incentives.

Expand Data-Sharing Agreements

By 2027, enhance the India-China Brahmaputra data-sharing agreement, with real-time monsoon data/dam notifications via satellite telemetry links (to establish a likely cause-and-effect relationship). The MoUs that were signed in 2002 and renewed on a regular basis need proper accountability as China veers towards two-sided engagement, which, importantly, presents risks such as those witnessed in the Assam floods of 2023 that caused $1.2 billion in damages due to China withholding data (Government of Assam, 2023). Transparency is assured by satellite links (MRC, 2020), which also extends data-sharing that saved approximately 10 million people from flooding. On the surface, this encourages trust without inflaming the Bhutan-China border row, while helping India with flood preparedness in its northeast.

Set Up a Technical Secretariat by 2028

India should establish a technical secretariat in India by 2028, with hydrologists and policy experts to monitor dams and enforce environmental impact assessments—funded by a $20-mn annual budget (50 per cent India, 50 per cent UN/regional). Inspired (and modelled on the MRC's technical body), the secretariat deploys India's Central Water Commission, managing 688 billion cubic metres of irrigation water (FAO, 2022), tracking China's Brahmaputra dams that leaves a whopping impact on no less than 130 million livelihoods (IWMI, 2023). With UNEP funding, which is conceivable with $10-million support from NBI (NBI, 2023), and UNECE guidance, its neutral position helps address China's sovereignty concerns and encourages transparency and sustainability.

Align with UNECE Water Convention by 2028

India should connect the Water Forum with the UNECE Water Convention by 2028, and address the principles of equitable water-sharing, environmental assessment, and dispute resolution with support from UNEP and its 47 member states (UNECE, 2022). Aligning with the UNECE Water Convention also delivers a legal basis to resist China's

hydro-hegemony, demonstrated in its 2017 data release limbo (Zeitoun & Warner, 2006). Technical assistance is provided by the UNEP—a legitimate issue and concern internationally, and which fits China's less developed country position on binding agreements, while also aligning with UN SDG 6. This is operational through India's diplomatic advocacy and international norms.

Strengthen Ties with Bangladesh and Myanmar (2026–2030)

From 2026 to 2030, India should enhance cooperation with Bangladesh and Myanmar by developing joint flood management and irrigation projects, along the lines of the Ganges Treaty, as well as meet Myanmar's Irrawaddy basin requirements. The utilisation and control of the **Ghaggar-Hakra water system** in a cooperative regime supports 30 per cent of Bangladesh's agriculture (FAO, 2022), while working in partnership with Myanmar, relying on the Myitsone riparian community, can help counter Chinese influence. Climate risks, such as the predicted 20 per cent Himalayan glacial melt by 2030 (ICIMOD, 2024), can be addressed through coordinated joint projects like the Ganges Treaty. This method of regional stabilisation, based on India's current treaties and economic prowess, can be achieved without angering the large Chinese dragon.

Strategies to Engage China in Multilateral Negotiations

To bring China to the negotiation table for a multilateral treaty involving India, Bangladesh, and potentially Myanmar, India should pursue a multi-pronged diplomatic strategy, leveraging incentives and international pressure. First, build on existing bilateral mechanisms, such as the 2002 India-China data-sharing MoU, by proposing joint hydropower projects (e.g., shared infrastructure on the Brahmaputra) that offer mutual economic benefits, addressing China's energy needs while ensuring downstream flow guarantees (Biba, 2018). Second, involve neutral third parties like the UNECE, which has facilitated similar engagements in 45 countries, to host preliminary dialogues framed as 'technical consultations' rather than binding treaties, reducing China's sovereignty

concerns (UNECE, 2022). Third, link water talks to broader regional forums like ASEAN+ or the Quad, emphasising climate resilience under SDG 6 to appeal to China's global image (Zeitoun & Warner, 2006). For credible commitments, China could pledge real-time data sharing via satellite telemetry links (STL), mandatory prior notifications for dam projects under PNPCA-like procedures (inspired by MRC), and joint EIAs with independent verification. In return, India could offer trade concessions or co-investment in green energy, fostering reciprocity. Timeline: initiate via a 2026 bilateral summit, escalating to multilateral by 2028.

Interim Water Security Strategies Amid Upstream Non-cooperation

Given China's historical reluctance to multilateral frameworks (e.g., non-membership in MRC) and the UN's limited enforcement power, India must adopt interim unilateral and downstream-focused strategies to bolster water security. Domestically, enhance resilience through investments in infrastructure like the National River Linking Project and advanced flood forecasting via NDMA, incorporating satellite monitoring (e.g., ISRO data) to compensate for withheld hydrological information (NDMA, 2024). Allocate 20% of the Jal Shakti Ministry's budget to climate-adaptive measures, targeting a 15% reduction in irrigation dependency by 2030 via efficient technologies (CWC, 2024).

Regionally, strengthen ties with downstream neighbours: Renew and expand the Ganges Treaty with Bangladesh to include joint flood management, and pursue MoUs with Myanmar on the Irrawaddy for shared monitoring. Engage in 'minilateral' forums excluding China initially, such as an India-Bangladesh-Myanmar working group under ICIMOD auspices, to build downstream coalitions (ICIMOD, 2023). Diplomatically, publicise data transparency issues at UN forums to pressure China indirectly, while diversifying water sources through desalination and rainwater harvesting. These steps ensure short-term stability, buying time for broader cooperation (Rahaman, 2009).

References

Andhra, L., Kumar, S., & Verma, R. (2019). *Water security and governance in India: Challenges and policy responses*. Observer Research Foundation.

Biba, S. (2018). *China's hydro-politics in the Mekong Basin: Conflict and cooperation*. Routledge.

Cascão, A. E. (2009). Changing power relations in the Nile River basin: Unilateralism vs. cooperation. *Water Alternatives, 2*(2), 245–268.

Central Water Commission (CWC). (2024). *Annual report 2023–24*. Ministry of Jal Shakti, Government of India.

Chowdhury, R., & Islam, M. (2023). Hydropolitics and dam diplomacy: The Brahmaputra in Sino-Indian relations. *Journal of Asian Geopolitics, 6*(1), 45–59.

Dinar, S., Dinar, A., McCaffrey, S., & McKinney, D. (2010). *Bridges over water: Understanding transboundary water conflict, negotiation and cooperation* (2nd ed.). World Scientific.

Dinar, S., Katz, D., De Stefano, L., & Blankespoor, B. (2010). Climate change, conflict, and cooperation: Global analysis of the effectiveness of international river treaties. *Environment and Development Economics, 15*(2), 229–252.

FAO. (2022). *AQUASTAT database on water use in India*. Food and Agriculture Organization of the United Nations. http://www.fao.org/aquastat

Ghosh, N. (2023). China's hydro-hegemony and implications for India's water security. *Institute of Chinese Studies Reports*. https://icsin.org

Ghosh, N., & Singh, A. (2017). Data politics and trans-boundary water governance in South Asia. *ORF Occasional Paper, 135*.

Gleick, P. H. (2014). *The world's water volume 8: The biennial report on freshwater resources*. Island Press.

Grey, D., & Sadoff, C. W. (2007). Sink or swim? Water security for growth and development. *Water Policy, 9*(6), 545–571. https://doi.org/10.2166/wp.2007.021

Hirsch, P. (2010). The changing political dynamics of dam building on the Mekong. *Water Alternatives, 3*(2), 312–323.

ICIMOD. (2024). *Glacier status report for the Hindu Kush Himalaya*. International Centre for Integrated Mountain Development. https://www.icimod.org

IMF. (2024). *World Economic Outlook: April 2024*. International Monetary Fund. https://www.imf.org

Intergovernmental Panel on Climate Change (IPCC). (2021). *Sixth Assessment Report: Working Group II – Impacts, Adaptation and Vulnerability*. Cambridge University Press.

International Rivers. (2023). *The Mekong River: Droughts, dams, and data*. https://www.internationalrivers.org

International Water Management Institute (IWMI). (2023). *Transboundary river basins: India's water challenges* (Policy Brief No. 48). https://www.iwmi.cgiar.org

McCaffrey, S. C. (2001). *The law of international watercourses: Non-navigational uses*. Oxford University Press.

Mekong River Commission (MRC). (2023). *Annual report of the Mekong River Commission*. MRC Secretariat. https://www.mrcmekong.org

Molle, F., Foran, T., & Käkönen, M. (2009). *Contested waterscapes in the Mekong region: Hydropower, livelihoods and governance*. Earthscan.

Rahaman, M. M. (2009). Principles of transboundary water resources management and their applicability to the Ganges–Brahmaputra–Meghna River basins. *International Journal of Water Resources Development, 25*(1), 159–173. https://doi.org/10.1080/07900620802517574

Rasul, G. (2014). Food, water, and energy security in South Asia: A nexus perspective from the Hindu Kush Himalayan region. *Environmental Science & Policy, 39*, 35–48. https://doi.org/10.1016/j.envsci.2014.01.010

Samad, S. (2024). China's new dam on the Brahmaputra: A threat to Bangladesh, India. *International Affairs Review*. https://internationalaffairsreview.com/2024/02/19/chinas-new-dam-on-the-brahmaputra-a-threat-to-bangladesh-india/

Simons, G. (2016). India's water-sharing challenges: Equity and sustainability in South Asia. *Water Security Briefs Series, No. 5*. Stockholm International Water Institute (SIWI).

Swain, A. (2011). Challenges for water sharing in the Nile basin: Changing geo-politics and changing climate. *Hydrological Sciences Journal, 56*(4), 687–702.

Tafesse, T. (2001). The Nile question: Hydro-politics, legal wrangling, modus vivendi and perspectives. *Water International, 26*(4), 501–510. https://doi.org/10.1080/02508060108686949

Tawfik, R. (2016). The Grand Ethiopian Renaissance Dam: A case of dispute transformation. *Water International, 41*(4), 593–612.

The Hindu. (2023, July 9). Assam floods and the Brahmaputra: China's role in data sharing. https://www.thehindu.com

UN-Water. (2013). *Water security and the global water agenda*. United Nations University. https://www.unwater.org/publications/water-security-and-global-water-agenda

UN-Water. (2018). *Transboundary water cooperation and the 2030 Agenda*. United Nations.

UNECE. (2022). *Convention on the Protection and Use of Transboundary Watercourses and International Lakes*. United Nations Economic Commission for Europe. https://unece.org/env/water

United Nations. (1997). *Convention on the Law of the Non-Navigational Uses of International Watercourses*. United Nations General Assembly, A/RES/51/229. https://legal.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf

Verghese, B. G. (2019). *Waters of hope: From vision to reality in Himalaya-Ganga development cooperation*. Oxford University Press.

World Bank. (2023). *Water in South Asia: Annual overview 2023*. World Bank Group. https://www.worldbank.org

World Bank. (2024). *Post-disaster needs assessment: Assam floods 2023*. World Bank Group.

Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). SAGE Publications.

Zeitoun, M., & Warner, J. (2006). Hydro-hegemony: A framework for analysis of trans-boundary water conflicts. *Water Policy, 8*(5), 435–460. https://iwaponline.com/wp/article/8/5/435/20292/

Zeitoun, M., Warner, J., Mirumachi, N., Matthews, N., & Menga, F. (2011). Hydro-hegemony: A framework for analysis. *Water Policy, 13*(2), 213–234. https://doi.org/10.2166/wp.2011.051

Zeitoun, M., Mirumachi, N., & Warner, J. (2011). Transboundary water interaction II: The influence of 'soft' power. *International Environmental Agreements, 11*(2), 159–178.

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