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**China's Water Insecurity and Its Implications for Geopolitical
Leverage in Asia**

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Abstract: This paper examines how China's domestic water insecurity constrains its ability to leverage water resources for geopolitical gain in Asia. Drawing on green theory, this study argues that despite its upstream position on crucial transboundary rivers such as the Ili, Mekong, and Brahmaputra, China's leverage is undermined by the pressing need to address its own water challenges, including scarcity, pollution, and uneven distribution. This paper addresses a gap in existing research by focusing on the limitations to China's hydro-hegemony, rather than solely on its potential. Employing case study analysis, this paper examines how domestic constraints affect China's transboundary water interactions. The findings reveal that China's domestic water insecurity significantly limits its capacity to exert effective hydro-diplomacy, despite its geographic advantages and economic clout. This has significant implications for regional stability and China's pursuit of regional leadership in Asia.

China's rise as a regional power in Asia is inextricably linked to its management of transboundary water resources. With over 40 major transboundary river systems originating within its borders, including the Ili, Mekong, and Brahmaputra, China holds a geographically advantageous position.¹ This reality grants Beijing potential leverage over downstream neighbors, particularly as water scarcity² and pollution^{3,4} intensify across the region. For instance, China has constructed a cascade of 11 mega-dams on the upper Mekong River, giving it significant control, i.e. up to 47 billion cubic meters,⁵ over the river's flow. This control could potentially be used to influence riparian countries reliant on the Mekong for agriculture, fisheries, and livelihoods. However, China's own domestic water security challenges increasingly constrain its ability to wield this leverage.⁶

While China has historically emphasized its sovereign rights over water resources,⁷ its growing demand for water and energy, coupled with the environmental consequences of its large-scale water management projects, presents a resource dilemma.^{8,9} This is particularly salient in the context of transboundary rivers, where unilateral actions risk undermining regional stability and jeopardizing China's aspirations for regional leadership.

¹ Lei Xie and Jia Shaofeng, *China's International Transboundary Rivers: Politics, Security and Diplomacy of Shared Water Resources* (Routledge, 2018).

² FAO and AWP, *Managing water scarcity in Asia and the Pacific - A Summary: Trends, experiences, and recommendations for a resilient future* (Rome and Canberra, 2023).

³ Pankaj Kumar et al., "Microplastics in Freshwater Environment in Asia: A Systematic Scientific Review," *Water* 14, no. 11 (2022), <https://doi.org/10.3390/w14111737>.

⁴ Alexandra Evans, Munir A. Hanjra, Yunlu Jiang, and Manzoor Qadir, "Water Quality: Assessment of the Current Situation in Asia," *International Journal of Water Resources Development* 28, no. 2 (2012), <https://doi.org/10.1080/07900627.2012.669520>.

⁵ Brian Eyler and Courtney Weatherby, *New Evidence: How China Turned Off the Tap on the Mekong River* (The Stimson Center, 2020).

⁶ Jun Du et al., "Groundwater Depletion and Degradation in the North China Plain: Challenges and Mitigation Options," *Water* 16, no. 2 (2024), <https://doi.org/10.3390/w16020354>.

⁷ See note 1.

⁸ Yu Ding, Ling Jia, Chenglong Wang, and Peng Wang, "Urban Sprawl and Its Effects on Water Competition Between Building Industry and Residents: Evidence from 31 Provinces in China," *Water-Energy Nexus* 7, (2024), <https://doi.org/10.1016/j.wen.2024.01.002>.

⁹ Porkkodi Ganeshpandian, "Dams, Hegemony and Beyond: China's Hydro-Stability in the Evolving World Order," *Discover Global Society* 2, no. 9 (2024), <https://doi.org/10.1007/s44282-024-00036-w>.

While numerous studies have examined China's hydro-hegemony potential^{10,11,12} and others have explored the impacts of China's water policies on transboundary river basins,^{13,14,15} the interplay between China's domestic water insecurity and its capacity to exert hydro-hegemony has not been sufficiently explored.¹⁶ This paper addresses this gap by analyzing how China's domestic water challenges, including scarcity, pollution, and uneven distribution, constrain its ability to leverage water resources for geopolitical gain, despite its geographic advantages and ambitious dam infrastructure. Drawing on green theory, this analysis highlights the limitations of China's technocentric approach to water management and the urgent need for a more cooperative and sustainable approach to transboundary water governance. By exploring this dynamic, this paper aims to contribute to a deeper understanding of the relationship between resource security, environmental challenges, and geopolitical dynamics in Asia.

Part I. China's Domestic Water Insecurity

China's pursuit of regional hydro-hegemony, i.e. dominance in the control and utilization of transboundary water resources, is linked to its ability to manage its internal resource challenges and achieve hydro-stability.¹⁷ Hydro-stability,¹⁸ in this context, refers to

¹⁰ Brahma Chellaney, *Water: Asia's New Battleground* (Georgetown University Press, 2011).

¹¹ Uttam Kumar Sinha, "Examining China's Hydro-Behaviour: Peaceful or Assertive?," *Strategic Analysis* 36, no. 1 (2012), <https://doi.org/0.1080/09700161.2012.628487>.

¹² See note 9.

¹³ Sebastian Biba, "Desecuritization in China's Behavior towards Its Transboundary Rivers: the Mekong River, the Brahmaputra River, and the Irtysh and Ili Rivers," *Journal of Contemporary China* 23, no. 85 (2014), <https://doi.org/10.1080/10670564.2013.809975>.

¹⁴ Yanmei He, "Current and future transboundary water cooperation over the YarlungZangbo/Brahmaputra River basin: from an interdisciplinary perspective," *Water Policy* 23, no. 5 (2021), <https://doi.org/10.2166/wp.2021.008>.

¹⁵ Selina Ho, "China's transboundary river policies towards Kazakhstan: issue-linkages and incentives for cooperation," *Water International* (2017), <https://dx.doi.org/10.1080/02508060.2017.1272233>.

¹⁶ Scott Moore, "China's domestic hydro-politics: an assessment and implications for international transboundary dynamics," *International Journal of Water Resources Development* 34, no. 5 (2017), <https://doi.org/10.1080/07900627.2017.1313157>.

¹⁷ See note 9.

¹⁸ Hydro-stability refers to a state's overall stability—economic, social, and political—significantly influenced by its access to and management of water resources, encompassing both domestic water management and external relations with neighboring countries regarding shared water resources, and emphasizing long-term sustainability. Hydro-stability can be achieved through cooperation or by establishing dominance in the control of water resources i.e. hydro-hegemony.

China's ability to achieve long-term stability and security by effectively managing its domestic water resources and navigating transboundary water relations with riparian countries. While establishing hydro-hegemony could allow China to exert significant political and economic influence over downstream neighbors, potentially shaping regional development and security dynamics, its domestic water insecurity presents a particularly salient constraint. The country's complex water management challenges stem from a confluence of factors, including rapid economic development, legacies of unsustainable environmental practices, and unfavourable natural conditions. These challenges manifest primarily as water scarcity, pollution, and uneven distribution, posing a threat not only to China's hydro-stability but also to its environmental security and, ultimately, its geopolitical ambitions.

Water Scarcity

Northern China, a region encompassing major population centers (e.g., Beijing) and industrial hubs (e.g., Tianjin), is grappling with a chronic water scarcity crisis. Characterized by low precipitation, high annual variability, and high evapotranspiration rates, the North China Plain is prone to drought and struggles to meet the burgeoning demands of agriculture, industry, and domestic consumption.¹⁹ The Yellow River Basin, the largest in the region and the cradle of Chinese civilization, provides a telling illustration of the severity of the water crisis. In recent decades, over-extraction for irrigation, industrial use, and urban expansion has led to a dramatic decline in river flows, with sections of the riverbed running dry for extended periods.²⁰ This decline is further exacerbated by climate change, deforestation in the

¹⁹ See note 6.

²⁰ Liu Changming and Zhang Shifeng, "Drying Up of the Yellow River: Its Impacts and Counter-Measures," *Mitigation and Adaptation Strategies for Global Change* 7, (2002), <https://doi.org/10.1023/A:1024408310869>.

upper reaches of the river basin, and the construction of numerous dams and reservoirs to support agricultural and industrial activities.^{21,22}

However, the drying up of the Yellow River is emblematic of a broader crisis of groundwater depletion across northern China. Over-reliance on aquifers has resulted in falling water tables, land subsidence, and saltwater intrusion, jeopardizing agricultural productivity and urban water supplies.²³ Competition for scarce water resources among provinces, between urban and rural areas, and across different economic sectors has intensified, raising the spectre of water conflicts and social unrest.^{24,25} In response, the Chinese government has implemented a range of measures to mitigate the crisis, including flood and drought prevention, water conservation, optimized allocation, and strengthened ecological protection of large rivers and lakes,²⁶ in addition to its ambitious inter-basin water transfer project, i.e., the South-North Water Transfer Project, the long-term sustainability of which remains uncertain.²⁷ However, without a comprehensive and sustainable approach to water management, the escalating water crisis in northern China could have far-reaching implications for the country's economic growth and social stability, undermining Beijing's capability to project power and influence in the region.

²¹ Li Chao, "China's 'Grain-to-Green' Plan Fundamental to Managing Water and Soil Erosion," *WWF China* (blog), March 21, 2003, https://wwf.panda.org/wwf_news/?6642/Chinas-Grain-to-Green-plan-fundamental-to-managing-water-and-soil-erosion.

²² See note 20.

²³ Xiaolin Yang et al., "Recharge and Groundwater Use in the North China Plain for Six Irrigated Crops for an Eleven Year Period," *PLoS One* 10, no. 1 (2015), <https://doi.org/10.1371/journal.pone.0115269>.

²⁴ See note 8.

²⁵ Gabriel Collins and Gopal Reddy, "How China's Water Challenges Could Lead to a Global Food and Supply Chain Crisis," *Rice University's Baker Institute for Public Policy* (blog), November 14, 2022, <https://www.bakerinstitute.org/research/how-chinas-water-challenges-could-lead-global-food-and-supply-chain-crisis>.

²⁶ Genevieve Donnellon-May, "China's Five-Year National Water Security Plan," *The Diplomat*, December 17, 2022, <https://thediplomat.com/2022/12/chinas-five-year-national-water-security-plan/>.

²⁷ Maxwell C. Wilson et al., "A Review of the Economic, Social, and Environmental Impacts of China's South-North Water Transfer Project: A Sustainability Perspective," *Sustainability* 9, no. 8 (2017), <https://doi.org/10.3390/su9081489>.

Water Pollution

China's rapid economic growth has come at a steep environmental cost, with water pollution emerging as a significant threat to both public health and ecosystem integrity. The discharge of untreated industrial wastewater, agricultural runoff laden with fertilizers and pesticides, and untreated sewerage have contaminated vast stretches of the country's rivers and lakes.²⁸ This pollution renders water unfit for human consumption and agricultural use and poses serious risks to aquatic life and biodiversity.

The Yangtze River, Asia's longest river and a critical water source for over 400 million people, exemplifies the severity of this crisis. Industrial pollutants from factories, agricultural chemicals from croplands, and domestic sewerage from urban centers have severely degraded the river's water quality.²⁹ The consequences of water pollution are manifold. For example, exposure to contaminated water sources can lead to a range of health problems, including vascular diseases, cancers, and developmental disorders.³⁰ Furthermore, water pollution disrupts ecosystems and undermines food security by jeopardizing fisheries and agricultural productivity.

While the Chinese government has acknowledged the gravity of the water pollution problem and has implemented measures to address it,³¹ including stricter environmental regulations, investment in wastewater treatment plants, and crackdowns on polluting industries, the legacy of pollution and the ongoing enforcement challenges remain significant hurdles. China finds tackling water pollution a toilsome task due to the sheer scale of the problem and the ongoing pressure of economic development.

²⁸ Global Water Partnership, "China's Water Resources Management Challenge: 'The Three Red Lines'," (Global Water Partnership, 2015).

²⁹ Tilman Floehr et al., "Solution by Dilution?--A Review on the Pollution Status of the Yangtze River," *Environmental Science and Pollution Research* 20, no. 10 (2013), <https://doi.org/10.1007/s11356-013-1666-1>.

³⁰ Wen-Qing Lu et al., "Water Pollution and Health Impact in China: A Mini Review," *Open Environmental Sciences* 2, (2008), <https://doi.org/10.2174/1876325100802010001>.

³¹ See note 28.

Uneven Water Distribution

The geographic imbalance in water resource distribution further complicates China's water security challenges. While the southern regions enjoy relative abundance due to high precipitation and extensive river networks,³² the north faces chronic water scarcity. This disparity has driven the implementation of the South-North Water Transfer Project (SNWTP), China's technocentric solution to the growing economic and social risks posed by water insecurity in northern China. This massive engineering endeavor is aimed at diverting water from the Three Gorges Dam in the Yangtze River Basin in the south to Tianjin (Central and Eastern Routes), Beijing (Central Route), and the Yellow River Basin (Western Route) in the arid north.³³

The SNWTP is one of the largest and most complex infrastructure projects to date. It seeks to alleviate water shortages in major northern cities such as Beijing and Tianjin, supporting industrial and agricultural activities vital to China's economic growth. While the project has provided some relief to water-stressed regions, it has also generated significant controversy. Critics point to its considerable environmental impact, including the disruption of ecosystems, displacement of communities, and potential for water quality degradation in both the source and receiving regions.^{34,35} Moreover, the project's massive scale and reliance on inter-basin transfers raise concerns about its potential to exacerbate water shortages in the south, particularly as climate change alters precipitation patterns and intensifies water demand.³⁶

The SNWTP, while indicative of China's technocentric perspective, highlights the limitations of relying solely on engineering solutions to address complex water management

³² Bin Liu and Robert Speed, "Water Resources Management in the People's Republic of China," *Water Resources Development* 25, no. 2 (2009), <https://doi.org/10.1080/07900620902868596>.

³³ Carla Freeman, "Quenching the Dragon's Thirst: The South-North Water Transfer Project—Old Plumbing for New China?," Woodrow Wilson International Center for Scholars, China Environment Forum, 2010.

³⁴ See note 27.

³⁵ See note 33.

³⁶ See note 27.

challenges. While it may provide temporary relief to water-stressed areas, it fails to address the underlying drivers of water scarcity, such as inefficient water use, poor environmental regulation, and the growing impacts of climate change.³⁷ Furthermore, the project's potential to disrupt regional water balances and exacerbate inter-provisional tensions highlights the inherent security risks associated with large-scale water infrastructure projects.³⁸ In essence, the SNWTP underscores the risks of the trade-offs and unintended consequences that may arise from attempts to manage water resources in a context of scarcity and uneven distribution.

Part II. Constraints on China's Geopolitical Leverage

While China's vast water resources and ambitious infrastructure projects might suggest a powerful position in Asian hydropolitics, the reality is far more complex. Despite its upstream position on many major rivers and its efforts to control water flows through massive dams and diversions, China's water insecurity significantly limits its capacity to exert hydro-hegemony in the region.

Domestic Priorities Over Hydro-Diplomacy

China's water insecurity is a critical constraint on its ability to project hydro-hegemony in Asia. The country's pressing water challenges necessitate a prioritization of domestic solutions, diverting crucial financial and political capital away from regional power plays. This is illustrated in China's domestic and foreign water policy on transboundary rivers, in which China prioritizes its growing water demands over the needs of downstream countries. China, however, asserts its right to appropriate water resources under Principle 21 of the 1972 Stockholm Declaration, which affirms that '*States, have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources.*'³⁹ China's technocentric approach to

³⁷ See note 28.

³⁸ See note 33.

³⁹ See note 1.

transboundary rivers frames water as a natural heritage resource for economic prosperity in terms of food (via irrigation) and energy (via hydropower dams) security.

The Ili River, originating in China's Xinjiang province and flowing into Kazakhstan, highlights the constraints imposed by domestic priorities. China enjoys an upstream position, but its increasing demand for irrigation, oil exploration, and domestic use within Xinjiang constricts its ability to manipulate water flow for strategic leverage. While Kazakhstan also faces water insecurity, its heavy reliance on the Ili River creates frequent tensions with China over water availability.⁴⁰ However, a history of diplomatic cooperation on economic and trade issues, even before China's Belt and Road Initiative, has established a foundation for negotiating these disagreements and preventing escalation to conflict.⁴¹

Despite numerous bilateral agreements established since the 1990s, it was the 2001 *Agreement on the Protection of Water Quality of Transboundary Rivers* that first signaled China's commitment to water sharing, introducing principles of equity and fairness.⁴² However, critics argue that this agreement's limitations, particularly the inability of signatories to interfere in domestic river management plans, perpetuate China's unilateral approach to transboundary water governance.⁴³ This provision effectively grants Beijing significant autonomy in its management of transboundary rivers within its borders and is consistent with China's traditional emphasis on prioritizing domestic water needs, as demonstrated by its extensive history of dam and canal construction dating back to 3000 BCE.⁴⁴ Critics argue that this approach, reminiscent of a 'neo-tributary system,' allows

⁴⁰ Xie Lei and Jia Shaofeng, "Kazakhstan Focuses on Water Efficiency to Ease Water Tensions with China," *Dialogue Earth* (blog), February 7, 2018, <https://dialogue.earth/en/water/kazakhstan-focusses-on-water-efficiency-to-ease-water-sharing-with-china/>.

⁴¹ Ramtanu Maitra, "One Belt One Road Brings New Life to Central Asia: Kazakhstan in Focus," *The Schiller Institute* (blog), February 2017, <https://archive.schillerinstitute.com/economy/2016/1212-obor-kazakhstan/ok.html>.

⁴² Agreement between the Government of the Republic of Kazakhstan and the Government of the People's Republic of China on Cooperation in the Use and Protection of Transboundary Rivers, September 12, 2001.

⁴³ See note 1.

⁴⁴ See note 11.

Beijing to exert influence over its neighbors while maintaining a façade of mutual respect and cooperation.⁴⁵ This is also evident in China's Belt and Road Initiative, where water infrastructure projects are often used to foster economic dependence and strengthen China's geopolitical position. This discrepancy between domestic policy and international rhetoric could engender suspicion and mistrust among China's neighbors, complicating its pursuit of regional leadership and potentially hindering the establishment of a cooperative framework for transboundary water management.

While China recognizes the potential for unilateral actions to strain relations with downstream neighbors and undermine its "peaceful rise" narrative,⁴⁶ its historical emphasis on sovereignty and domestic resource security continues to shape its approach. Consequently, Kazakhstan's reliance on non-water issues, such as trade and energy exports, to safeguard its interests further underscores the potential for these issues to become entangled in regional security dynamics.⁴⁷ Ultimately, China's commitment to genuine multilateralism and equitable resource sharing will be critical in determining the trajectory of regional stability and preventing water disputes from escalating into conflict.⁴⁸

Limited Water Availability as a Bargaining Chip

China's need to meet growing water demands for agriculture, industry, and urban consumption limits the surplus water available for negotiation and leverage. This scarcity reduces China's ability to offer water as an incentive or withhold it as a punishment, thereby diminishing its hydropolitical power.

China's construction of a cascade of 11 mega-dams on the upper reaches of the Mekong River Basin serves as a prime example. While these dams grant China significant

⁴⁵ Jichuan Sheng, Michael Webber, and Xiao Han, "Authoritarian Neoliberalization of Water Governance: The Case of China's South–North Water Transfer Project," *Territory, Politics, Governance* 9, no. 5 (2020), <https://doi.org/10.1080/21622671.2020.1755891>.

⁴⁶ Kai He and Feng Liu, "China's Peaceful Rise: From Narrative to Practice," in *The Oxford Handbook of Peaceful Change in International Relations*, ed. T. V. Paul, Deborah Welch Larson, Harold A. Trinkunas, Anders Wivel, and Ralf Emmers, (Oxford University Press, 2020).

⁴⁷ See note 1.

⁴⁸ Jiemian Yang, *China's Diplomacy: Theory and Practice* (World Century Publishing, 2014).

control over downstream flows, their inability to regulate the river during dry seasons restricts its leverage.⁴⁹ Downstream countries, including Vietnam, Laos, Cambodia, Myanmar, and Thailand, rely heavily on the Mekong for agriculture, fisheries, and transportation.⁵⁰ China's dam operations, particularly during times of drought, can thus significantly impact these downstream flows, leading to concerns about water shortages and ecological disruption.⁵¹ Reduced ecological integrity, already evidenced by altered sediment flows and disrupted fish migrations, further undermines China's image as a responsible actor thereby jeopardizing its long-term geopolitical ambitions in the region.

However, China's own reliance on the Mekong for hydropower generation and irrigation in Yunnan Province limits its ability to use the river as a bargaining chip. In fact, China's extensive damming infrastructure is causing devastating droughts downstream, as evidenced by a 2019 instance where China withheld record amounts of water despite above-average rainfall while downstream countries suffered severe drought.⁵² The balance, therefore, between domestic demand and the needs of lower basin countries becomes particularly precarious under changing climatic conditions. China's limited capacity to release water from its reservoirs to alleviate downstream shortages restricts its leverage and can exacerbate regional tensions.

Furthermore, the Mekong River Commission, the only treaty-based regional intergovernmental body, has repeatedly called for greater Chinese cooperation in water resource management.⁵³ While Beijing has engaged in some data sharing and unpredictable

⁴⁹ See note 5.

⁵⁰ International Crisis Group, *Dammed in the Mekong: Averting an Environmental Catastrophe* (Report 343/Asia) (International Crisis Group, 2024).

⁵¹ Akarath Soukhaphon, Ian G. Baird, and Zeb S. Hogan, "The Impacts of Hydropower Dams in the Mekong River Basin: A Review," *Water* 13, no. 3 (2021), <https://doi.org/10.3390/w13030265>.

⁵² See note 5.

⁵³ Sebastian Strangio, "Amid US Criticisms, China Offers Mekong Nations Access to Crucial River Data," *The Diplomat*, October 23, 2020, <https://thediplomat.com/2020/10/amid-us-criticisms-china-offers-mekong-nations-access-to-crucial-river-data/>.

water releases, its actions have been criticized as insufficient and lacking transparency.⁵⁴

Growing awareness of the interconnectedness of the Mekong River Basin and the need for collaborative solutions to ensure equitable and sustainable water use further constrains China's leverage.⁵⁵

Environmental Concerns and Regional Tensions

China's pursuit of water and energy security on the Brahmaputra River epitomizes the complexities it faces in leveraging water for geopolitical gain. While Brahmaputra's immense hydropower potential and strategic significance are undeniable, environmental concerns and regional tensions act as potent constraints on China's ambitions.

The Brahmaputra River, originating on the Tibetan Plateau and traversing through India and Bangladesh, holds immense strategic importance for all three riparian states. For China, the Brahmaputra represents a solution to meet the growing energy demands of its southwestern provinces.⁵⁶ However, in addition to its hydropower potential, India and Bangladesh view the river as a lifeline for their agricultural economies and populations.⁵⁷ This divergence in perspectives has made India and Bangladesh acutely aware of the potential environmental and security implications of Chinese infrastructure projects.

Despite numerous MOUs between China and India, the lack of a comprehensive water-sharing treaty between the riparian states leaves the Brahmaputra vulnerable to unilateral actions,⁵⁸ with potentially devastating consequences for local populations. In India and Bangladesh, for example, farmers depend on predictable flows for irrigating vital crops wherein unilateral Chinese damming or diversions could disrupt these rivers, leading to crop

⁵⁴ Sebastian Strangio, "Mekong Takes on Bluish Tinge as Water Levels Again Fall," *The Diplomat*, February 16, 2021, <https://thediplomat.com/2021/02/mekong-takes-on-bluish-tinge-as-water-levels-again-fall/>.

⁵⁵ See note 5.

⁵⁶ Hongzhou Zhang and Genevieve Donnellon-May, "China's Hydropower Plan on the Brahmaputra," *The Diplomat*, September 1, 2021, <https://thediplomat.com/2021/09/chinas-hydropower-plan-on-the-brahmaputra/>.

⁵⁷ Yumiko Yasuda, Dipankar Aich, Douglas Hill, Patrick Huntjens, and Ashok Swain, *Transboundary Water Cooperation over the Brahmaputra River: Legal Political Economy Analysis of Current and Future Potential Cooperation* (The Hague Institute for Global Justice, 2017).

⁵⁸ See note above.

failures, economic hardship, and potential social unrest. This vulnerability fuels a security dilemma, as each state, wary of its neighbors' actions, seeks to maximize its control over the river through competitive dam building, potentially exacerbating the risks. This dynamic heightens tensions and increases the risk of conflict, particularly given existing territorial disputes and China's potential for large-scale water diversion projects like the Red Flag Diversion Project.⁵⁹

Adding to these concerns is the potential for China to initiate large-scale water diversion projects. Consider the anticipated Medog super-dam in China, projected to generate three times more electricity than the Three Gorges Dam. This project has sparked deep anxieties in India and Bangladesh, who fear the dam will worsen water security and the ecological integrity of the river basin.⁶⁰ Furthermore, dams are prone to sedimentation, with reduced sediment flows resulting in erosion, loss of fertile land, and increased vulnerability to flooding, posing a serious threat to food security and livelihoods downstream.⁶¹

Exacerbating these anxieties is a perceived lack of transparency and limited data sharing from China regarding its dam operations and future plans. India, in particular, views these activities with deep suspicion, perceiving them as a potential threat to its water security and by extension, its territorial integrity.⁶² This lack of information fosters mistrust and hinders collaborative water management efforts, making it difficult for downstream countries to adequately prepare for potential impacts and participate in mutually beneficial solutions. Instead, perceptions of Chinese control over the Brahmaputra's flow may trigger a security dilemma, further complicating regional security dynamics and potentially hindering broader cooperation on other critical issues. Further research on China's water diplomacy is crucial to

⁵⁹ Mark Giordano and Anya Wahal, "Hydro-Diplomacy on the Brahmaputra: Examining the Interplay of Water, Territorial Claims, and Infrastructure," *International Journal of Water Resources Development* 40, no. 6 (2024), <https://doi.org/10.1080/07900627.2024.2388651>.

⁶⁰ Hongzhou Zhang and Genevieve Donnellon-May, "China's Hydropower Plan on the Brahmaputra," *The Diplomat*, September 1, 2021, <https://thediplomat.com/2021/09/chinas-hydropower-plan-on-the-brahmaputra/>.

⁶¹ See note 50.

⁶² See note 60.

understanding the relationship between domestic constraints, regional dynamics, and environmental concerns, ultimately informing strategies to mitigate risks and promote sustainable water management in Asia.

Conclusion

This analysis has demonstrated that China's domestic water insecurity significantly constrains its ability to leverage transboundary water resources for geopolitical gain. Despite its geographic advantages and ambitious dam infrastructure, China's pressing need to address its own water challenges limits its capacity to exert effective hydro-diplomacy. This has significant implications for regional stability in Asia, as water scarcity and competition for natural resources could exacerbate existing tensions and increase the risk of conflict.

Furthermore, these constraints challenge China's narrative of 'peaceful rise' and its pursuit of regional leadership. To achieve its geopolitical ambitions, China must reconcile its domestic water needs with a more cooperative and sustainable approach to transboundary water management. This requires greater transparency, equitable resource sharing, and a genuine commitment to multilateral engagement. Failure to do so risks not only environmental degradation and regional instability but also the undermining of China's long-term strategic objectives in Asia.

Further research is needed to explore the evolving dynamics of hydropolitics in the region and to assess the effectiveness of different approaches to transboundary water governance. Ultimately, the future of Asia's shared water resources depends on the willingness of all riparian states to prioritize cooperation and sustainability over unilateralism and short-term gains.

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