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INDUS WATERS TREATY: AN IMPEDIMENT TO THE INDIAN HYDRO-HEGEMONY

DR. WASEEM AHMAD QURESHI *

Water is the most exquisite commodity, and its utility in the sectors of economy, food, and power production is exceptional. To capture this resource more effectively, powerful nations are racing to raise water management infrastructure in order to seize the reins of regional political supremacy by establishing hydro-hegemony. Within this context, India is eager to take control of all Pakistani water supplies by developing projects over the western rivers of the Indus Basin. Frequently, Pakistan objects to these projects, fearing that its water supplies are gradually diminishing. As a result, water conflicts between India and Pakistan are escalating, and the global community fears that these conflicts will escalate into full-scale water wars, in a situation where both nations are nuclear powers. Here Pakistan claims that India is robbing Pakistani waters and trying to get hold of all water resources in the region of occupied Kashmir. However, India maintains that climate change, not its projects, is to blame for the decreased water flows in the western rivers. Interestingly, the Indus Waters Treaty (IWT), a bilaterally agreed treaty between India and Pakistan, prohibits India from diverting any waters from rivers allocated to Pakistan. So, arguably, the existing legal framework of the IWT poses an impediment to the Indian desire for hydro-hegemony over Pakistan's legal water rights. Consequently, Indian authorities are rethinking the IWT, and are going so far as to imagine the unilateral abandonment of the IWT. This Article seeks to explore the real Indian rationale for modifying or nullifying the IWT.

INTRODUCTION

Sharing water resources is a complex and difficult mechanism.[1] The transboundary sharing of international river waters involves aspects of sovereignty, principles of law, and politics, supplemented with the aspects of geographical characteristics and entrenched political hegemony. It also includes important facets of water[2] as a fluid resource, involving its management and controls in respect of

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1. ASHOK SWAIN, UNDERSTANDING EMERGING SECURITY CHALLENGES: THREATS & OPPORTUNITIES 59 (2013).

2. TRANSBOUNDARY WATER MANAGEMENT 30–32 (Anton Earle et al. eds., 2010) [hereinafter Earle] (discussing various aspects of water sharing of international basins, including sovereignty and water as a fluid resource).

storage and navigation, with additional regard to innumerable dynamics of domestic, agrarian, and other similar basic uses of water.[3] Different reports have noted that there are more than one hundred international river water basins that are shared by more than two sovereign countries,[4] including, notably, the Nile, Mekong, Niger, Congo–Chambeshi, Amazon, Brahmaputra, and Indus Rivers.[5]

Water is undoubtedly a building block of life and an elementary human resource, because of its numerous fundamental uses.[6] These include water as a key element in food production, power production, economic development, and several other similar basic processes of human life.[7] Despite vast water resources, sporadic water apportionments among nations have supplemented water scarcity in various regions.[8] A race by states to capture water resources has already begun, and influential nations like China and India are trying to control and manage the water flows of their regions in the hope of establishing hydro-hegemony.[9] Consequently, international conflicts over water apportionment are surfacing and many experts and scholars contend they are already evolving into water wars this century.[10]

Water conflicts are notably escalating in the regions of Latin America, Central Asia, and the Middle East,[11] and these areas are liable to encounter increased water conflicts or even water wars in the near future.[12] This is anticipated mainly because of growing water scarcity and emerging international tensions over water apportionments.[13]

Water conflicts date as far back as thousands of years ago.[14] In the twentieth century, the world saw numerous water conflicts, but never full-scale wars waged solely over water management or water control.[15] However, experts now believe

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3. SHAFIQUL ISLAM & LAWRENCE E. SUSSKIND, WATER DIPLOMACY: A NEGOTIATED APPROACH TO MANAGING COMPLEX WATER NETWORKS 131 (2012).

4. Anthony Turton, *The Southern African Hydropolitical Complex, in* MANAGEMENT OF TRANSBOUNDARY RIVERS & LAKES 64 (Olli Varis et al. eds., 2008).

5. Kazuaki Hori & Yoshiki Saito, *Classification, Architecture, and Evolution of Large-River Deltas, in* LARGE RIVERS: GEOMORPHOLOGY AND MANAGEMENT 76–77 (Avijit Gupta ed., 2008).

6. Shaden Abdel-Gawad, *Actualizing the Right to Water: An Egyptian Perspective for an Action Plan, in* WATER AS A HUMAN RIGHT FOR THE MIDDLE EAST AND NORTH AFRICA 137 (Asit K. Biswas et al. eds., 2008).

7. KERRY TURNER ET AL., ECONOMIC VALUATION OF WATER RESOURCES IN AGRICULTURE 91 (2004). *See also* Joachim von Braun & Alisher Mirzabaev, *Nexus Scientific Research, in* THE WATER, FOOD, ENERGY AND CLIMATE NEXUS 60 (Jamie Bartram & Felix Dodds, eds., 2016).

8. Saif Al Qaydi, *Biophysical Resources and the Built Environment: Features, Foci, and Issues in the Muslim Majority Countries, in* THE MUSLIM WORLD IN THE 21ST CENTURY: SPACE, POWER AND HUMAN DEVELOPMENT 95 (Samiul Hasan ed., 2012).

9. GUSTAF OLSSON, WATER AND ENERGY: THREATS AND OPPORTUNITIES 192 (2nd ed.2015).

10. Jeremy Allouche et al., *Water Securities and the Individual: Challenges from Human Security to Consumerism*, in HANDBOOK ON WATER SECURITY 61 (Claudia Pahl-Wostl et al. eds., 2016) (discussing competition to capture water resources and the possibility of water wars).

11. Peter H. Gleik, *Water Conflict Chronology, in* THE WORLD'S WATER 2008–2009 151 (2009) [hereinafter *World's Water 2008–2009*].

12. JULIAN CRIBB, THE COMING FAMINE 21 (2010) [hereinafter Cribb].

13. *Id.* at 12.

14. *World's Water 2008–2009*, *supra* note 11, at 151.

15. Cribb, *supra* note 12, at 21.

that full-scale wars will be waged over water apportionment during this century. The surges in population growth, global warming, urbanization, inefficient water management, inequitable employment of water apportionment, and hydropolitics are noted as likely to escalate minor water conflicts into water wars.[16] Furthermore, scholars argue that the absence of water wars so far has been mainly a result of cooperation among states which share water of the same river basin, i.e. co-riparian states.[17] Conversely, an imbalance of powers among co-riparian states is the main reason that co-riparians do not go to war over water access.[18] It is largely hydropolitics, where powerful nations muscle their way to advantageous positions. Notwithstanding discussions over the possibility of water wars, frequent major water conflicts over water apportionment are inevitable in the near future.[19]

In hydropolitics, controlling water supplies translates into controlling the regions dependent on those water supplies.[20] In international river basins, co-riparian states race to control the management of water supplies to gain the upper hand in regional politics.[21] Managing water supplies delivers political power to aggressive states because water is essential for healthy economic growth.[22] Hydropolitics scholar Edward Barbier has noted that water and economics go hand in hand, suggesting that neither water nor the economy is independent of one another, but are rather interdependent elements of a greater system.[23]

Within the same context, it is apparent in the semiarid and arid regions of Asia and Africa that lower riparian states are concerned with the actions of the upper riparian states regarding water management, water control, and water pollution, as water flows from upper riparian to lower riparian.[24] Upper riparian states tend to reduce water supplies, construct water management infrastructure, and pollute waters against the interests of lower riparian states.[25] Notwithstanding water politics and its hydroeconomic and political aspects, the developed world has rarely seen any major international water political conflicts, as compared to developing countries. This is because many developing countries rely more on water sources flowing from upper riparians, and their water supplies are estimated

16. Sarah Hendry & Geoffrey Gooch, *Ecosystem Services and Water Security, in* ROUTLEDGE HANDBOOK OF ECOSYSTEM SERVICES 501 (2016).

17. Sina Marx & Anik Bhaduri, *Understanding the Global Water System for Water Cooperation, in* FREE FLOW 290 (2013).

18. NAYAN SHARMA, RIVER SYSTEM ANALYSIS AND MANAGEMENT 356 (2016).

19. ARIEL DINAR ET AL., BRIDGES OVER WATER: UNDERSTANDING TRANSBOUNDARY WATER CONFLICT, NEGOTIATION AND COOPERATION 13 (2013).

20. Earle, *supra* note 2, at 28; *see generally* KAI WEGERICH & JEROEN WARNER, THE POLITICS OF WATER: A SURVEY (2010).

21. MOSTAFA DOLATYAR & TIM S. GRAY, WATER POLITICS IN THE MIDDLE EAST: A CONTEXT FOR CONFLICT OR CO-OPERATION? x (2000).

22. *The U.N. World Water Development Report 3: Water in a Changing World*, WORLD WATER ASSESSMENT PROGRAMME xix (2009).

23. Edward B. Barbier, *Water and Growth in Developing Countries, in* HANDBOOK OF WATER ECONOMICS 501 (Ariel Dinar & Kurt Schwabe eds., 2015).

24. ARUN P. ELHANCE, HYDROPOLITICS IN THE THIRD WORLD: CONFLICT AND COOPERATION IN INTERNATIONAL RIVER BASINS x (1999).

25. *Id.* at x–xi.

to be withdrawn by fifty percent by 2025, thus the probability of conflict escalation is more acute in developing world.[26]

In recent times, water conflicts between India and Pakistan have escalated, both quantitatively and qualitatively, as India is gearing up to build water management infrastructures over its western rivers. The Indus Waters Treaty (IWT), a bilateral agreement between the two nations, specifically allocated these western rivers for Pakistan's unrestricted use. It is thus feared that a water war between these nations is an imminent possibility,[27] particularly given the number of prior conflicts between these two states.[28] In this context, this Article explores the different aspects of water conflicts between India and Pakistan and considers various routes of dispute resolution. This Article also investigates the notion that India, as an upper riparian state, is trying to take control of Pakistan's water supplies in order to establish hydro-hegemony and enjoy political supremacy. Thus, an assessment of the IWT within this context is the central focus in this Article, including an analysis of India and Pakistan's perspectives on the agreement. In addition, this Article explores the relationship between India's efforts to modify or discontinue the existing legal framework under the IWT, the rationale behind India's efforts in doing so, and India's endeavor to establish hydro-hegemony.

Section I of this Article defines hydro-hegemony in order to contextualize the political maneuvering that nations might exercise in water apportionment and water utilization. This section will analyze key aspects of hydro-hegemony and consider important questions, including whether practices of water apportionment tend to develop cooperation or conflict between co-riparian states.

Section II will evaluate regional tensions as subversions to support hydro-hegemony by detailing India and Pakistan's prior water conflicts. This section has two parts. Section II(A) will briefly touch upon India's infrastructure construction plans in light of the IWT, and will raise important questions, such as whether India's construction works violate IWT. Section II(B) will then explore the nexus between construction works and hydro-hegemony.

Section III of this Article will explore India's growing interest in modifying or nullifying the IWT, or establishing a new and wholly independent IWT. Section III(A) will explore whether India's sentiment is tilting toward reviewing the existing IWT legal framework. Section III(B) will explain India's rationale or reasoning for modifying or nullifying the existing framework of the IWT. Section III(C) will assess the proposed IWT II. This subsection introduces the growing concept of IWT II among Indian scholars and provides an overview of five different schools of thought within India that demand IWT II or the modification

26. MANAS CHATTERJI & B.M. JAIN, CONFLICT AND PEACE IN SOUTH ASIA 270 (2008).

27. INDIA'S NATIONAL SECURITY: ANNUAL REVIEW 2012 265 (Satish Kumar ed., 2013) [hereinafter Kumar].

28. GREG CASHMAN & LEONARD C. ROBINSON, AN INTRODUCTION TO THE CAUSES OF WAR: PATTERNS OF INTERSTATE CONFLICT FROM WORLD WAR I TO IRAQ 205 (2007) (noting that major wars between Pakistan and India were fought in 1947-8, 1965, 1971, and since 1998).

or nullification of the existing IWT.

Finally, Section IV of this Article will examine Pakistan's sentiments against modification or nullification of the IWT. Here, the possibility of resolving water conflicts between India and Pakistan through the existing legal framework of the IWT will be set out. Additionally, this section will briefly touch upon the aspect of trust deficit between the nations due to the noncompliance of the Indian state. Finally, the scope of Article 7 of the IWT will be examined in order to determine whether it accommodates modern emerging concerns of both states.

I. HYDRO-HEGEMONY

Hydro-hegemony is essentially the politicization and domination of waterways by powerful states seeking to control regional politics.[29] Hegemony exists where one powerful state imposes its leadership forcefully upon weaker states.[30] When hegemony is applied to waterways, the result is weaker co-riparian states experiencing heavy reliance on inflows from powerful states.[31] The resulting variability of power among nations sharing the same international river basin—known as the "asymmetry" of powers[32]—is key to understanding water conflicts. Professor Mark Zeitoun and Professor Jeroen Warner, who are leading academicians on hydropolitics, provided a more detailed definition of hydro-hegemony:

> [H]egemony at the river-basin level, achieved through water resource control strategies such as resource capture, integration and containment.[33] These strategies are executed through an array of tactics including coercion, pressure, treaties, knowledge construction, and others that are enabled by the exploitation of existing power asymmetries, usually within a weak institutional context.[34]

Hojjat Mianabadi, who is a leading scholar on hydropolitics, identified prominent hydro-hegemonies in the world, including Turkey's hydro-hegemony in the international river basins of the Euphrates and Tigris Rivers.[35] Similarly, Israel has hydro-hegemony over the Jordan River basins, Egypt over the Nile River basins, and Uzbekistan over the Aral Sea basins.[36] Mianabadi adds that, although Egypt is a lower riparian state with access to only five percent of Nile River

29. Wegerich & Warner, *supra* note 20, at 254.

30. POWER IN THE 21ST CENTURY: INTERNATIONAL SECURITY AND INTERNATIONAL POLITICAL ECONOMY IN A CHANGING WORLD 33 (Enrico Fels et al. eds., 2012).

31. Jonathan Lautze & Herath Manthrithilake, *Water Security*, *in* KEY CONCEPTS IN WATER RESOURCE MANAGEMENT (2014).

32. Hojjat Mianabadi et al., *Trans-boundary River Basin Management*, *in* CONFLICT RESOLUTION IN WATER RESOURCES AND ENVIRONMENTAL MANAGEMENT 139 (Keith W. Hipel et al. eds., 2015) [hereinafter Hipel et al.].

33. *Id.* at 140.

34. Patrick MacQuarrie & Aaron T. Wolf, *Understanding Water Security*, *in* ENVIRONMENTAL SECURITY 182 (Rita Floyd & Richard A. Matthew eds., 2013).

35. Hipel et al., *supra* note 32, at 140.

36. *Id.*

waters, it asserts its hydro-hegemony to exploit up to ninety-seven percent of all water from the Nile River.[37] Similarly, in the Indus River basins, the water conflicts present an unusual dual hegemony. There, China enjoys hydro-hegemony over India while India holds hydro-hegemony against Pakistan,[38] Bangladesh, and Nepal.[39]

Within international river basins, one can locate hydro-hegemony by evaluating the asymmetrical power structure in the utilization of water.[40] For instance, one can determine authoritative water exploitation through hydro-hegemony by examining three central and contingent determinants. The first feature, "exploitation potential," is the capacity of a powerful state to construct water management infrastructure in order to control the water flow. The second characteristic of hydro-hegemony is termed "riparian position," referring to the geographical location of a state in terms of water flow. Particularly, this describes whether the concerned state is a lower or upper riparian state. The third feature is the "three dimensions of powers," referring to the structural, bargaining, and ideological aspects of a state.[41]

Here, the structural aspect is the "might" in terms of power, which includes military strength, economic potency, political support, bargaining power, and other state power determinants.[42] Relatedly, the bargaining aspect refers to the ability of a powerful regime to manipulate other, weaker states into compliance with its agendas; this is basically the weaker states endorsing and enforcing the more powerful state's interests in a convincing way.[43] The ideological characteristic is the principal aspect of power-play by the hegemonic state. This feature allows the powerful state to prevent other states from resolving their grievances by altering people's perceptions into accepting the authoritative role of the powerful state.[44] Through these tactical mechanisms, hegemonic states employ consensus in regional politics, which sometimes includes forceful imposition through military force and sanctions, and thus attaining control of the resources of weaker states.[45]

As a report on the "Indus Waters Treaty and Resolution of Water Conflicts Between Two Nuclear Nations (Pakistan and India)" notes, India has managed to

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37. *Id.*

38. IMAGINING INDUSTAN: OVERCOMING WATER INSECURITY IN THE INDUS BASIN 198 (Zafar Adeel & Robert Wirsing eds., 2017) [hereinafter Adeel & Wirsing]; *see generally* Mely Caballero-Anthony & Pau Khan Khup Hangzo, *Water*, *in* NON-TRADITIONAL SECURITY IN ASIA 72 (2013).

39. NAHO MIRUMACHI, TRANSBOUNDARY WATER POLITICS IN THE DEVELOPING WORLD 79 (2015) [hereinafter Mirumachi].

40. *Id.* at 9.

41. Stephanie Hawkins, *The Eighth International Workshop on Hydro-Hegemony: Law & Hydro-Hegemony* (Nov. 9, 2015), http://stephanie-hawkins.com/category/hydro-hegemony/ [hereinafter Hawkins].

42. Earle, *supra* note 2, at 39.

43. Hawkins, *supra* note 41.

44. TATAH MENTAN, DILEMMAS OF WEAK STATES: AFRICA AND TRANSNATIONAL TERRORISM IN THE TWENTY-FIRST CENTURY 5 (2004).

45. Mark Zeitoun & Jeroen Warner, *Hydro-Hegemony – A Framework for Analysis of Trans-Boundary Water Conflicts*, 8 WATER POL'Y 435 (2006).

gain hydro-hegemony in the Indus water basins against Pakistan through its diplomatic relations; its positive image in the global community; its geographical location as an upper riparian state; and its economic, political, and ideological strengths.[46] This supposition is further supported by the analyses of Rizwan Ullah Kokab and Adnan Nawaz, academicians in Pakistan, who have observed that India has exploited the water supplies of several states in the region by employing hydro-hegemony, including against Pakistan, Bangladesh, and Nepal, by taking advantage of being an upper riparian state.[47]

It is important to note that powerful nations with military, economic, and political might, who are usually upper riparian states, tend to enjoy hydro-hegemony in the region while utilizing international river waters.[48] Hydro-hegemony in turn gives rise to regional water conflicts.[49] Customarily, in order to safeguard their interests and to avoid violent means to resolve water conflicts, states rely on establishing water sharing agreements through cooperation.[50] However, achieving consensus in establishing a treaty or an agreement for the purpose of sharing water equitably is a complex mechanism, the journey to which is long and difficult.[51]

On the other hand, only through cooperation can states be mutually benefitted. This cooperation helps achieve a better water management system, improved ecological protection, strengthened peace in the region, and, consequently, decreased regional frictions and conflicts.[52] Some prominent examples of cooperation among states to diminish conflicts and resolve water conflicts equitably by mutual agreement include the Great Lakes Water Quality Agreement, 1978, between the US and Canada; the Agreement for the Cooperation for the Sustainable Development of the Mekong River Basin, 1995, among Thailand, Laos, Cambodia, and Vietnam; the Niles Waters Agreement, 1959, between Egypt and Sudan; and the IWT, 1960, between India and Pakistan.[53]

Despite the presence of a water sharing treaty, India and Pakistan are facing emerging water conflicts. Significantly, Pakistan's growing concern about India's

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46. INDUS WATERS TREATY AND RESOLUTION OF WATER CONFLICTS BETWEEN TWO NUCLEAR NATIONS (PAK. & INDIA), http://www.feem-web.it/ess/ess12/files/papers/hayat (last visited May 20, 2017) [hereinafter IWT Resolution].

47. Rizwan Ullah Kokab & Adnan Nawaz, *Indus Waters Treaty: Need For Review*, 2(2) ASIAN J. OF SOC. SCI. & HUMAN., 213–14 (2013) [hereinafter Kokab & Nawaz].

48. Zeitoun & Warner, *supra* note 45, at 437; *see also* IWT Resolution, *supra* note 46; Hawkins, *supra* note 41.

49. Hipel et al., *supra* note 32, at 139.

50. ROBERT G. WIRSING ET AL., INTERNATIONAL CONFLICT OVER WATER RESOURCES IN HIMALAYAN ASIA 12 (2012).

51. *See, e.g.*, Marie J. Gunning, *The Projected Impact of the North American Free Trade Agreement on Transboundary Water Management between Mexico and the U.S.A.*, in TRANSBOUNDARY WATER RESOURCES MANAGEMENT: INSTITUTIONAL AND ENGINEERING APPROACHES 77 (Jacques Ganoulis et al. eds., 1996).

52. *See generally* SHARON B. MEGDAL ET AL., SHARED BORDERS SHARED WATERS: ISRAELI-PALESTINIAN AND COLORADO RIVER BASIN WATER CHALLENGES (2012).

53. *See* IWT Resolution, *supra* note 46.

construction of dams on the western rivers flowing to Pakistan poises India to be able to manage all of Pakistan's water supplies and enjoy political supremacy.[54] However, water conflicts between India and Pakistan are not a novel phenomenon, since they have deep roots.

II. THE IWT AND WATER CONFLICTS BETWEEN INDIA AND PAKISTAN

Water apportionment conflicts in the Indus water basins can be traced back to the regime of the colonial Raj in British India among states within Hindustan (the name given to India, Pakistan, and Bangladesh as a single country before partition) during the early periods of the twentieth century.[55] However, the Anderson and Rao commissions resolved water disputes among Hindustani states in 1935 and 1942, respectively.[56] After partition in 1947, Hindustan was bifurcated into the two states of Pakistan and India. The water sources and Indus river basin water apportionment were complicated further because the headworks of Pakistan's water supplies then laid within the territories of Indian-occupied Kashmir.[57] As a result, water conflicts between these newly created states were inevitable. After only a year, in 1948, India claimed territorial sovereignty of water apportionment and blocked all water supplies to Pakistan.[58] Owing to this unreasonable water blockage by India, war was foreseeable. In 1960, the World Bank provided neutral mediation to bring the hostile neighboring states to an agreement. The fruit of this mediation is today known as the Indus Waters Treaty.[59]

The IWT designates the three main western tributaries to Pakistan's exclusive and unrestricted use and positions the three main eastern tributaries for India's exclusive and unrestricted use.[60] Furthermore, the treaty prohibits India and Pakistan from navigating or storing waters from the other's exclusive tributaries, i.e., India is not allowed to store or navigate waters away from the due course of the western tributaries and Pakistan is not allowed to store or navigate waters away from the eastern tributaries.[61]

As discussed above, India is developing infrastructure to thwart Pakistan's exclusive access to the wester river waters, and thus Pakistan's entire water supply, and to claim political supremacy in the form of hydro-hegemony.[62]

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54. Kumar, *supra* note 27, at 265.

55. *See* IWT Resolution, *supra* note 46.

56. Chandrakant D. Thatte, *Indus Waters and the 1960 Treaty Between India and Pakistan*, *in* MANAGEMENT OF TRANSBOUNDARY RIVERS AND LAKES 178 (Olli Varis et al. eds., 2008).

57. TAI TAN YONG & GYANESH KUDAISYA, THE AFTERMATH OF PARTITION IN SOUTH ASIA 95 (2000).

58. Scott Barrett, *Conflict and Cooperation in Managing International Water Resources* 11 (World Bank Pol'y Res. Dep't, Pol'y Res. Working Paper No. 1303 (May 1994)), http://documents.worldbank.org/curated/en/530861468740155901/pdf/multi-page.pdf.

59. *See* IWT Resolution, *supra* note 46.

60. Indus Waters Treaty 1960 art. 2–3, India-Pak., Sept. 19, 1960, 419 U.N.T.S. 125.

61. *Id.*

62. *See* Caballero-Anthony & Hangzo, *supra* note 38, at 72; *see also* MALAYALA MANORAMA, MANORAMA YEARBOOK 2004 573 (2004) (demonstrating how India is trying to capture Pakistani water supplies); *see also* SHARAD K. JAIN ET AL., HYDROLOGY AND WATER RESOURCES OF INDIA 940 (2007)

A. Indian Construction Works and IWT Violations

The IWT explicitly maintains that India can only pursue construction works as run-off hydropower production projects.[63] It adds that dams for storage purposes or even for agrarian purposes cannot be built if they change the water supply capacity of rivers or divert them from their due natural course.[64]

Regardless of the bilateral treaty, India is racing to develop water management construction works over the western rivers.[65] Pakistani authorities are currently challenging a number of these construction works, including the Uri Nimo Bazgo project, the Salal project, the Baglihar power project, the Ratle project, the Wullar Barrage, and the Krishinganga project, among others.[66] Expressing Pakistan's concerns, experts noted that the Baglihar project could decrease Pakistan's water supplies and it could enable India to create floods at political whim.[67] Similarly, the Kishanganga project reduces Pakistan's power production capacity and adversely affects the environment. Furthermore, the Kishanganga dam's height is in violation of the allowable dam height under the IWT.[68]

The Wullar Barrage (the preferred Pakistani term for India's Tulbul Navigation project) is the most contested of India's construction works. Pakistan contended that the Wullar Barrage has the potential to dry three of its major tributaries: the Upper Jhelum, Upper Chenab, and Lower Bari Doab Rivers.[69] Additionally, the completion of the Wullar Barrage resulted in a reduction of the power production capacity of the Mangla plant in Pakistan.[70] From a legal standpoint, the Wullar Barrage allegedly violates Article 1(11), Article 3(4), and Article 8(h) of the IWT. Article 1(11) prohibits both states from changing the water flows of the rivers. Article 3(4) proscribes India from constructing projects to store waters of the western rivers. Article 8(h) mandates that India can only construct incidental water storage facilities, and even then, only after it acquires Pakistan's permission to construct such a project.[71] The Indus Water Commission, a regulatory oversight committee established under the IWT, was unable to resolve

(explaining Indian water management capacity and its race to develop more infrastructure).

63. Indus Waters Treaty, *supra* note 60, at Annex D–E (listing the allowed dead storage capacity).

64. Indus Waters Treaty, *supra* note 60, art. 3; *see also* MUNIR OZTURK ET AL., PLANTS, POLLUTANTS AND REMEDIATION 116 (2016).

65. Malayala Manorama, *supra* note 62, at 573.

66. Raja Nazakat Ali et al., *Indus Waters Treaty between Pakistan and India: From Conciliation to Confrontation*, 10(2) DIALOGUE 166, 174 (2015).

67. Pia Malhotra, *Tulbul Navigation Project/Wullar Barrage*, 4(9) EPILOGUE 34 (2010).

68. F. Naz, *Water: A Cause of Power Politics in South Asia*, *in* WATER AND SOCIETY II 104–05 (C.A. Brebbia ed., 2013).

69. MOONIS AHMAR, THE CHALLENGES OF CONFIDENCE-BUILDING MEASURES IN SOUTH ASIA 397–98 (2001).

70. Adeel & Wirsing, *supra* note 38, at 39–42.

71. Malhotra, *supra* note 67, at 35; *see also* RONGXING GUO, TERRITORIAL DISPUTES AND RESOURCE MANAGEMENT 143 (2006); *see also* Indus Waters Treaty, *supra* note 60, arts. 1(11), 3(4), 8(h).

Pakistan's allegations of India violating the IWT. As a result, Pakistan wanted to pursue its claims through arbitration, but subsequently, in 1987, India halted construction of the Wullar Barrage. However, India has been pressing to resume its construction works.[72] Recently allegations suggest that India has reconvened its construction work of the Wullar Barrage in hopes of completing it.[73]

Similarly, in relatively recent times, India's Kishanganga project (KHEP) was a leading concern for Pakistan because it had the potential to harm Pakistan's interests and violate the IWT. This project could reduce the power production capacity of Pakistan's Neelum Jhelum power production project by navigating river waters away from its course. Experts noted that this project would reduce the water supplies to the Neelum River by sixty-one percent,[74] which would violate the IWT. More specifically, under Article 3(2) and Article 2, India is prohibited from navigating the western river water flows away from their natural course. Furthermore, India must not exceed the storage capacity prescribed by the IWT.[75] In response to Pakistan's concerns, the CoA ordered India in 2011 to halt its construction works at the Kishanganga project and prohibited India from constructing any permanent structure on the western river waters.[76]

Conversely, in its final judgment regarding KHEP in 2013, the CoA held that India could continue its construction works.[77] However, while deciding the issues raised by Pakistan concerning the minimum flows, the court found that, in accordance with statutory and customary international law, India's construction work and the KHEP must not harm Pakistan's agricultural system or power production capacity.[78] Similarly, the court maintained that the KHEP project must also accommodate environmental protection laws found in international law.[79]

The Baglihar Dam is another case of water conflict between Pakistan and India. In accordance with the IWT, a neutral expert resolved the issue by delivering a balanced decision. The decision came out in the year 2007 and sided with Pakistan on mainly design issues, with meticulous details of power capacity and water diversion.[80]

Pakistan has reservations about several of India's construction works over the western waters, which were allotted for the unrestricted use of Pakistan under the

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72. *See* Adeel & Wirsing, *supra* note 38, at 41.

73. *India Rejects Pakistan Objections, Work on Tulbul Navigation Project in Full Swing*, NORTHLINES (Oct. 7, 2016), http://www.thenorthlines.com/india-rejects-pak-objections-work-tulbul-navigation-project-full-swing/.

74. Naz, *supra* note 68, at 105.

75. Adeel & Wirsing, *supra* note 38, at 79; *see also* Manish Vaid & Tridivesh Singh Maini, *Indo-Pak Water Disputes: Time for Fresh Approaches*, 4(2) PEACE PRINTS: S. ASIAN J. OF PEACEBUILDING (2012), http://wiscomp.org/pubn/wiscomp-peace-prints/4-2/Indo-Pak_Water_Disputes.pdf.

76. *See* Vaid & Maini, *supra* note 75.

77. Adeel & Wirsing, *supra* note 38, at 79–80.

78. *Id.*

79. *Id.*

80. Shaheen Akhtar, *Emerging Challenges to Indus Waters Treaty: Issues of Compliance & Transboundary Impacts of Indian Hydro Projects on the Western Rivers*, 28(4) REG'L STUD. 3, (2010).

IWT.[81] Meanwhile, India is pursuing the construction of forty-five to sixty dams over these exact waters.[82] This alleged construction is of significance because Kashmir possesses the headworks of all of Pakistan's freshwater supplies.[8384] Primarily, Pakistan is focusing on disputing the construction works of the Kishanganga, Ratle, Pakul Dal, Miyar, and local Kalnai projects.[85]

B. India's Race to Develop Hydro-Hegemony

As noted above, India is racing to build dams on the western rivers to capture the water supplies of Pakistan, in order to be better able to manage and navigate water sources and the headworks of Pakistan's water supplies. It is estimated that India possesses more than 4,000 dams in total, of which seventy-three percent are deliberately built on the western rivers allocated for Pakistan's unrestricted use.[86] Additionally, India is pursuing the construction of hundreds of more dams on the western rivers.[87] India is also trying to exploit the western river waters by resuming construction of Tulbul Navigation project, also known as Wullar Barrage, which was officially halted due to objections from Pakistan in 2007.[88]

India is taking advantage of its geographical location as an upper riparian state to Pakistan in order to take full managerial control of Pakistan's water supplies.[89] Recognizing this, Pakistan has long contested several of India's construction works, which with time has become controversial between these hostile neighbors. Pakistan has only raised issues against projects that have a bigger impact on the water flows of the western rivers, allotted to Pakistan in the IWT.[90] The dispute resolution framework of the IWT is somewhat slow and takes time to process conflicts, which defeats its purpose.[91] This is because by the time the issue gets to the highest available forum, India's construction works are typically complete or have incurred so much cost that such forums are unable to deliver justice to Pakistan.[92]

Over time, India has managed to store the river waters of the western

81. ASHOK SWAIN, STRUGGLE AGAINST THE STATE: SOCIAL NETWORK AND PROTEST MOBILIZATION IN INDIA 33 (2010).

82. INDIA'S FOREIGN RELATIONS 2008 1368 (Avtar S. Bhasin ed., 2008), http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.692.3283&rep=rep1&type=pdf.

83. MOHAN BHANDARI, SOLVING KASHMIR 180 (2006).

84. INDIA'S FOREIGN RELATIONS 2008, *supra* note 82.

85. SWAIN, *supra* note 81, at 33.

86. Malayama Manorama, *supra* note 62, at 573.

87. Jain et al., supra note 62, at 940.

88. *PM Modi Reviews Indus Waters Treaty, Says 'Blood & Water Can't Flow Together'*, TIMES OF INDIA (Sept. 26, 2016), http://timesofindia.indiatimes.com/india/PM-Modi-reviews-Indus-Water-Treaty-says-blood-and-water-cant-flow-together/articleshow/54526722.cms.

89. Abdul Rauf Iqbal, *Hydro-Politics in India and its Impact on Pakistan*, 6(1) ISSRA PAPERS 101 (2014).

90. Indus Waters Treaty, *supra* note 60, art. 3; *see also* ZESHAN ALI ET AL., PLANTS, POLLUTANTS AND REMEDIATION 116 (Munir Ozturk et al. eds, 2015).

91. Muhammad Adeel, *Indus Waters Treaty and the Case for Hydro-Hegemony*, CENTER FOR STRATEGIC & CONTEMPORARY RESEARCH 4 (2016), http://cscr.pk/pdf/rb/IndusTreaty.pdf.

92. *See id.* at 5; *see also* Jain et al., *supra* note 62, at 940.

tributaries and manage their controls by constructing numerous massive water storage and water managing infrastructure projects. Through this, India can cause droughts and floods in Pakistan at whim.[93] It is calculated that India can decide to stop all water supplies to Pakistan in conflict for up to twenty-six consecutive days.[94] Therefore, India's capacity to hold Pakistan's water supplies is tantamount to a political maneuver to ensure India's political supremacy in times of war or conflict.[95]

More recently, aggressive assertions by Indian officials have fueled the water conflicts between Pakistan and India. On September 26, 2016, India postponed its meeting with the Indus Water Commission and proclaimed that it is considering withdrawing from the IWT entirely.[96] On that occasion Indian Prime Minister Narendra Modi also gave a statement that India would exploit all waters from the western rivers and resume construction projects over the western rivers to maximize power production, storage facilitation, and agrarian uses of these waters.[97] In response, Pakistani authorities claimed that Indian revocation of the IWT would inevitably lead to war.[98] These plans would understandably take decades to achieve, but India seems determined that hydro-domination over Pakistan is a nonviolent way to ensure political supremacy in the region.[99]

Pakistan is already facing water scarcity, and experts and reports assert that water access in Pakistan will continue to deteriorate at an alarming rate.[100] The *New York Times* warned that Pakistan could face serious water shortages in the near future: "energy-starved Pakistanis, their economy battered by chronic fuel and electricity shortages, may soon have to contend with a new resource crisis: major water shortages."[101] Similarly, Pakistan's minister for water and power in 2015, Khawaja Asif, also noted the water shortage in Pakistan, stating: "A combination of global climate change, waste and mismanagement have led to an alarmingly rapid depletion of Pakistan's water supply . . . under the present situation."[102] The Asian Development Bank categorized Pakistan as a water scarce country, observing:

> Pakistan is one of the most water-stressed countries in the world, not far from being classified as 'water scarce,' with less than 1,000 cubic

93. ANDREW GUZMAN, OVERHEATED: THE HUMAN COST OF CLIMATE CHANGE 159 (2013).

94. Khalid Chandio, *India Re-Thinking Indus Waters Treaty*, IPRI REVIEW (Aug. 27, 2014), http://www.ipripak.org/india-re-thinking-indus-water-treaty/.

95. Iqbal, *supra* note 89, at 104–05.

96. Polina Tikhonova, *India vs. Pakistan Water Conflict Poses Global Threat*, VALUEWALK (Nov. 4, 2016, 10:42 AM), https://www.valuewalk.com/2016/11/india-vs-pakistan-water-conflict/.

97. Justin Rowlatt, *Why India's Water Dispute With Pakistan Matters*, BBC (Sept. 28, 2016), http://www.bbc.com/news/world-asia-india-37483359.

98. Tikhonova, *supra* note 96.

99. Rowlatt, *supra* note 97.

100. Salman Masood, *Starved for Energy, Pakistan Braces for a Water Crisis*, N.Y. TIMES (Feb. 12, 2015), https://www.nytimes.com/2015/02/13/world/asia/pakistan-braces-for-major-water-shortages.html [hereinafter Masood].

101. *Id.*

102. *Id.*

> meters per person per year. . . . At present, Pakistan's storage capacity is limited to a 30-day supply, well below the recommended 1,000 days for countries with a similar climate.[103]

Although diplomatic negotiations between the two nations regarding water conflicts had been on hold for two years, this deadlock was recently and unexpectedly broken in May 2017 at the Indus Water Commission meeting in Islamabad.[104] Historically, Indus Water Commission meetings tend to be either suspended or unproductive. India's newly adopted and far more aggressive determination to impede upon Pakistan's water supplies has further exacerbated water conflicts.[105] Consequently, it is very much feared that—owing to emerging Pakistani problems of water scarcity, power shortage, subsiding agriculture sector, and growing population, supplemented with threats to navigate the western rivers waters—a water war is inevitable.[106]

Pakistan's water supplies are already scarce, and India is further constricting Pakistan's supplies by raising water management infrastructure over the western tributaries, which are allocated to Pakistan.[107] Through all of these construction works, it is noted in this section, India has gained the capacity to stop all of Pakistan's water supplies for almost a month.[108] This ability translates into India's hydro-hegemony over Pakistan. India can use its dominant hydropolitical position to influence Pakistan during conflicts and political disputes, which will inadvertently ensure India's political supremacy in regional politics.[109] This conclusion is already reflected in the aggressive official stance of India and its race to develop infrastructure exclusively on western waters.[110]

III. INDIA'S PERSPECTIVE

This section focuses on the Indian perspective to gain control of Pakistan's water supplies by increasing its water management capacity.[111] In order to explore true Indian perspectives, this section is divided into three subsections. Section III(A) will explore why India is rethinking the existing bilaterally agreed treaty. Section III(B) will give similar analyses of the Indian rationale for modifying or

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103. *Asian Development Outlook 2013: Asia's Energy Challenge*, ASIAN DEV. BANK 208 (2013), https://www.adb.org/sites/default/files/publication/30205/ado2013_1.pdf.

104. Ayesha L. Sethi, *India-Pakistan Hold Indus Water Commission Talks After Two Years*, CITIZEN (Mar. 21, 2017), http://www.thecitizen.in/index.php/OldNewsPage/?Id=10214&India-Pakistan/Hold/Indus/Water/Commission/Talks/After/Two/Years.

105. *See generally* Masood, *supra* note 100.

106. Guzman, *supra* note 93, at 161.

107. *See* Ahmar, *supra* note 69 (demonstrating how Indian construction works are constricting Pakistan's water supplies).

108. Chandio, *supra* note 94.

109. Iqbal, *supra* note 89, at 104–05.

110. *See, e.g.*, Masood, *supra* note 100.

111. *Id.; see, e.g.*, Caballero-Anthony & Hangzo, *supra* note 38; *see also* Malayama Manorama, *supra* note 62, at 573 (demonstrating how India is trying to capture Pakistan water supplies); *see also* Jain et al., *supra* note 62, at 940 (demonstrating Indian water management capacity and its race to develop more infrastructure).

scrapping the IWT. Section III(C) will give insights into scholarly understandings and schools of thoughts within India in respect of modifications to or nullification of the IWT or establishing IWT II.

A. India Rethinking the IWT

Indian authorities are rethinking the nation's participation in the IWT and may go so far as considering the unilateral scrapping of IWT.[112] This is solely motivated by India's desire to exploit the western river waters, which the existing IWT framework stands as an impediment to. Specifically, the IWT prohibits construction over the western rivers as these are actions which would effectuate India's desire to establish hydro-hegemony and deny Pakistan it's legal water rights.[113] Delhi's readiness to revoke the IWT and its frequent construction works in violation of the IWT reflect India's interest to not abide by the existing provisions of the agreement.[114] India's plan to raise water management infrastructure is to establish hydro-hegemony and ensure political supremacy in relations with Pakistan.[115]

Additionally, India's perspective reflects its belief that the IWT is too generous to Pakistan.[116] In this regard, Indian scholar Brahma Chellaney noted that:

> [I]t might prompt India to rethink a treaty that was extremely generous to Pakistan. There was no treaty in the world, which had been so generous on the part of the upper riparian to the lower riparian state. India was starving its own northern regions and reserving four-fifths of the water for Pakistan. If Pakistan played this dangerous game, they would make India review its generosity.[117]

While Chellaney believes that the IWT is too generous to Pakistan, this Article aims to demonstrate that India's actual interest is not, as Chellaney argues, to rehydrate its northern regions. Rather, it is to exploit the western rivers and gain hydro-hegemony status over Pakistan by taking advantage of being an upper riparian state.

B. Indian Rationale for Modifying or Nullifying the IWT

India, as an upper riparian state, currently faces water conflicts with three prominent nations, Pakistan, Nepal, and Bangladesh.[118] Each of these nations has accused India of diverting water supplies away from their due course by constructing infrastructures that navigate and manage the international waters.

112. Iqbal, *supra* note 89, at 105–06.

113. BHARAT VERMA, 17(2) INDIAN DEF. REV. 9 (2002).

114. Nausheen Wasi, *Harnessing the Indus: Perspectives from Pakistan*, 3(11) EPILOGUE 34, 35–37 (2009); *see also*, Guo, *supra* note 71, at 143.

115. Caballero-Anthony & Hangzo, *supra* note 38; *see also* Malayana Manorama, *supra* note 62, at 573; *see also* Jain et al., *supra* note 92; *see also* Iqbal, *supra* note 89, at 104–05.

116. Kumar, *supra* note 27, at 265.

117. Chandio, *supra* note 94.

118. ROCKIN TH. SINGH, INDIA'S WATER RELATIONS WITH HER NEIGHBORS 58–59 (2011).

India is thereby taking advantage of being an upper riparian state to the direct disadvantage of these three states.[119] The state that controls the water supplies controls regional politics,[120] and, given the aggressive actions of India, it is clear that India seeks hydro-hegemony to control the reins of political supremacy in the region. In order to ensure regional hegemony, India needs to capture and exploit all possible international waters.[121] In this regard, the IWT poses a major impediment to India's objective because exploitation of the western rivers and changes to the flows or navigation of waters is a violation of the IWT's existing legal framework.[122]

India argues that the IWT and its dispute resolution mechanism have long posed impediments to India's construction works because Pakistan makes sure to exploit all available forums under the IWT framework.[123] Consequently, construction work in India is frequently delayed and the delay incurs increased economic costs. Indian scholars have routinely expressed the opinion that the IWT inhibits India from fully enjoying its potential to produce hydroenergy, which also harms India as an "opportunity cost."[124] India faces increasing pressure from its states to scrap or modify the IWT. For instance, three motions were moved to India's national assembly to review the IWT.[125]

Meanwhile, India's perspective on the Kashmir issue, a prolonged conflict between India and Pakistan, is more about Pakistan obtaining control of the headworks of its own water supplies than it is about liberating Kashmiris.[126] There is some truth to this as well, because the Kashmir occupation has a lot to do with water sources and the headworks. Professor Asit K. Biswas, co-founder and Editor-in-Chief of International Journal of Water Resources Development, mirrored the proposition that the Kashmir issue mainly surfaced because of the "struggle over rivers, rivers with their headworks in the Kashmir, flowing through Pakistan."[127] Within the scope of the Kashmir conflict, the Indian Defense Review of 2002 demanded that the state nullify the IWT in its entirely.[128] This report underscores contentions that the occupation of Kashmir is primarily concerned with capturing the headworks of Pakistan's water supply. The report refers to Pakistan as the enemy and states that, if India manages to control all of the water supplies of Pakistan, the "enemy stands crippled."[129] Biswas adds that India cannot construct infrastructure to be able to divert or manage all water supplies of

119. DHIRENDRA K. VAJPEYI, WATER RESOURCE CONFLICTS AND INTERNATIONAL SECURITY: A GLOBAL PERSPECTIVE 104 (2012).

120. *See generally* Wegerich & Warner, *supra* note 20.

121. Iqbal, *supra* note 89, at 104.

122. Indus Waters Treaty, *supra* note 60.

123. Kokab & Nawaz, *supra* note 47, at 214; Adeel, *supra* note 91, at 5; *see also* Jain et al., *supra* note 62, at 573.

124. Kokab & Nawaz, *supra* note 47, at 214.

125. *Id.*

126. Ali et al., *supra* note 66, at 170–71.

127. Kokab & Nawaz, *supra* note 47, at 214.

128. Verma, *supra* note 113.

129. *Id.*

Pakistan.[130] Therefore, India needs long-term planning to raise its infrastructure and subsequently divert and store Pakistan's waters. It goes so far as to explicitly state that India can employ and enjoy political supremacy and hurt Pakistan through raising infrastructure by scrapping the IWT entirely rather than by going to war or using violence.[131]

India seeks to manage the water resources of Kashmir by raising infrastructure, because Kashmir is the major source of water supply for Pakistan, and without these supplies Pakistan's position in the region will be crippled.[132] In 2002, the then-president of Pakistan, Pervez Musharraf, emphasized Kashmir and its waters' importance for Pakistan, noting that "without Kashmir waters the entire Pakistan is likely to turn into barren desert."[133] Recognizing this, India seeks to renegotiate the IWT to modify its terms so that India can further exploit the western rivers, or, alternatively, to scrap the IWT entirely and enter into a new treaty with Pakistan, generally identified by scholars as IWT II.[134]

C. The Indus Waters Treaty II

Recent developments in Indian scholarship are tilting the focus toward modifying or revoking the existing IWT under the guise of "benefit sharing," to resolve the actual and cognitive Indian rationale.[135] India's need for a new mechanism of water apportionment only arose because the existing legal framework does not legitimately allow India to divert or store water from the western rivers, which are designated for the unrestricted use of Pakistan but lie physically in Indian-occupied Kashmir.[136]

This IWT II contemplation can be categorized by two competing arguments. One side advocates for the adaptation of the existing IWT, which in other words is a simple call for modifications to the IWT. The other side proposes an entirely new treaty, essentially the revocation of the IWT.[137]

Indian scholars like Verghese tend to side with modifications to the IWT. Verghese argues that since there is room under Article 7 of the IWT for expansion in future cooperation, the IWT II can be established on the foundations of the current IWT. He also advocates for benefit sharing and believes that Pakistan and India should jointly manage and control waters, whereby Pakistan should also bear some of the costs of this infrastructure.[138] He adds that India is entitled to this limited use of the western rivers under the IWT and both India and Pakistan,

130. Kokab & Nawaz, *supra* note 47, at 214.

131. Verma, *supra* note 113.

132. *Id.*

133. Patricia Wouters, *Universal and Regional Approaches to Resolving International Water Disputes: What Lessons Learned from State Practice?*, RESOL. OF INT'L WATER DISP. 111, 113 (2002).

134. Chandio, *supra* note 94.

135. Iqbal, *supra* note 89, at 104.

136. *Id.* at 103–04.

137. *Id.* at 104–05.

138. B.G. Verghese, *Political Fuss Over the Indus*, TRIBUNE (May 25, 2005), http://www.bgverghese.com/Indus.htm.

through a combined effort, can benefit equally from shared hydropower, moderated floods waters, and a number of other benefits.[139]

On the other hand, proponents like Ramaswamy Iyer, Former Secretary Water Resources, Government of India, are inclined toward the revocation of the IWT and are supportive of the IWT II as a replacement. Ramaswamy believes that since the IWT has already provided a legal framework for water apportionment there can be no further utilization in the modification of existing treaty.[140] Unlike Verghese, he proposes that, instead of modifying an existing treaty, a new legal framework to envisage water apportionment should be fashioned to curb emerging Indian interests.[141] His contention for the IWT II is that there cannot be two parallel water apportionment treaties, since the physical water apportionment can only follow one water sharing legal framework.[142] This is not because modifications are not possible in the IWT but rather because Ramaswamy is a proponent of new principles for water apportionment between India and Pakistan, in a holistic fashion,[143] to be able to exploit the western rivers more effectively.

1. Schools of Thought in the IDSA Report: Five Divisions

The Institute for Defense Studies and Analyses (IDSA) published a report on the proposals for modifying the existing IWT, and demands installment of the IWT II. In a manner similar to Indian scholars, the IDSA report, called *Water Security for India—The External Dynamics*, discusses both modification and nullification of the IWT to safeguard Indian interests.[144] The report explicitly acknowledges that existing provisions of the IWT are impediments to the construction works of India over the western rivers. The report states that there are "some stringent provisions in the IWT that thwart India's plans of developing projects on the western rivers."[145] The report adds that, in order for India to be able to walk away from its obligations under IWT provisions, modification or revocation of the IWT is necessary. The reasoning for modifying and abrogating the IWT are only described as the desire to continue India's construction works over the western waters.[146] However, such reasoning reflects the same proposition of this Article, that India is intending to capture Pakistan's water supplies through its construction works, which are in violation of the IWT. The purpose of these construction projects is only to establish hydro-hegemony and gain political supremacy.[147] It is apparent that the IWT remains a major impediment between India's water exploitation

139. *Id.*

140. Ramaswamy R. Iyer, *Indus Treaty: A Different View*, 40(29) ECON. & POL. WKLY. 3140, 3144 (July 2005).

141. *Id.*

142. *Id.*

143. *Id.* at 3141.

144. *See Water Security for India: The External Dynamics*, INST. FOR DEF. STUDIES & ANALYSES (2010), http://www.indiaenvironmentportal.org.in/files/book_WaterSecurity.pdf [hereinafter IDSA].

145. *Id.* at 10.

146. *Id.* at 10–11, 41–42.

147. *See generally* Iqbal, *supra* note 89; *see also* Kokab & Nawaz, *supra* note 47, at 213–14.

practices and Pakistan's water interests and water rights.[148]

Moreover, the IDSA report, in a way similar to Indian scholarship, advocates "benefit sharing." As to the possibility of modifying the IWT, the IDSA report sees the opportunity to explore subsidization of Indian construction works' costs and proposes to share those costs with Pakistan.[149] Besides helping this Article to identify India's rationale for modifying or nullifying the IWT, this report contains five different schools of thought with respect to general viewpoints and motivations for modifying or revoking the IWT.[150]

2. First School

The first school of thought—according to the IDSA report—wants IWT II as a modification within the existing IWT. It proposes to achieve this by employing modifications under Articles 7 and 12 of IWT. This division believes that such modifications would ensure the resolution of current political tensions between India and Pakistan. Additionally, this would also enable the IWT to encompass growing environmental concerns within the Indus basin, coupled with an emphasis on climate change and global warming.[151]

3. Second School

The second school of thought does not believe in the proposition of modification of the existing IWT. This is based on the logic that the IWT has a built-in nexus with partition; thus, it cannot appease conflicts effectively. Consequently, this division suggests that the IWT should be revoked and a new water apportionment treaty should be installed.[152]

4. Third School

The third school of thought set forth in the IDSA report looks at the state government of Indian-occupied Kashmir. The state of Indian-occupied Kashmir believes that the IWT reduces the state's potential to grow.[153] Therefore, this state calls for a review of the existing IWT. It argues that the IWT does not allow the state to construct infrastructure to effectively manage or control its own waters.[154] Consequently, it faces a severe power shortage and an underdeveloped agricultural system. However, specific analysis of the IDSA report suggests that such an argument in favor of abrogating the bilateral treaty is not proposed to ensure power production in Kashmir but rather to be able to better control the water supplies of Pakistan.[155]

148. *Id.*
149. *Id.* at 105.
150. IDSA, *supra* note 144, at 40.
151. *Id.*
152. *Id.* at 40-41.
153. *Id.* at 41.
154. *Id.*
155. Kokab & Nawaz, *supra* note 47, at 214.

5. Fourth School

The fourth school of thought within this report seems to most clearly set forth India's reasoning for proposing the IWT II, which is to use water management to ensure hydro-hegemony and enjoy political supremacy. This group prefers to term this analysis as choosing the lesser evil: instead of using violence, water should be used as a coercive political tool to ensure India's political supremacy over Pakistan.[156]

6. Fifth School

The fifth school of thought maintains that India has not yet fully exploited the western waters under the allowed limits of IWT, so any demands for the modification or revocation of the IWT and demands for IWT II are totally baseless. This group holds that India should first exploit the western rivers to the full extent in accordance with the IWT, and only after that can India demand more.[157] This group reasons that calls for the IWT II, without first exhausting the current legal framework, is illogical. This group adds that, in time, and after complete exploitation of the western rivers, the IWT can be modified and brought into line with modern international law and emerging aspects of water apportionment, such as rules and aspects of equitable apportionment, the Helsinki Rules, environmental protection rules, and climate change guidelines.[158]

IV. PAKISTAN'S PERSPECTIVE

This section will comprehensively portray Pakistan's concerns over India's construction works and the difficulties that Pakistan faces in ensuring its water rights under the legal framework of the IWT.[159] Section IV(A) will set out the possibility of resolving water conflicts between India and Pakistan peacefully and efficiently within the IWT's existing legal framework. Here, the trust deficit between the two states, a primary driving force behind all water conflicts between the countries, will be briefly discussed. Thereafter, a recommendation is set forth in the form of a mechanism to curtail the trust deficit within the scope of the existing IWT and defuse regional tensions while accommodating both states' concerns.[160]

By using its status as an upper riparian state to Pakistan, India is trying to exploit all of the western river waters and control Pakistan's water supply in a more significant manner. Through the construction of infrastructure India hopes to gain hydro-hegemony and assert political supremacy over Pakistan.[161] To ensure this hegemony, India is already planning to build over sixty dams across the western rivers; these dams will increase its capacity of water storage facilities, to

156. IDSA, *supra* note 144, at 41.
157. *Id.*
158. Kokab & Nawaz, *supra* note 47, at 211.
159. Iqbal, *supra* note 89, at 103.
160. *Id.* at 121–22.
161. *Id.*

manage the shared waters of the western rivers more efficiently, and to exploit the IWT to its furthest limits.[162] Pakistan has already raised concerns about some of India's major construction works on the western waters, for instance the Salal, Kishanganga, Wullar, Baglihar, and Ratle,.[163] These projects have the capacity to completely drain the major western rivers of Pakistan, e.g., the Chenab and Jhelum rivers. The fast pace of construction works on the western rivers reflects Indian keenness to gain control of all of the water supplies of Pakistan.[164] This proposition is further supported by the fact that India is contemplating the construction of a dam of considerable size in collaboration with Afghanistan. When completed, this dam will hold 0.5 Million Acre-Foot (MAF) of water diverted from Pakistani water supplies; this project is known as the Kama Hydropower Production Project.[165]

In its legal actions against India, Pakistan has frequently maintained that such construction works deprive Pakistan of its water supplies in violation of provisions under the IWT.[166] By the time the issue reaches the highest forum, with all kind of political interruptions and the inefficiency of the dispute resolution mechanism under the IWT, the issues raised are proved redundant, as the objectionable projects have by that time either been completed or incurred so much cost that they cannot be held back.[167] And, even if the court does agree with Pakistan's stance, it's legal remedies fail to affect meaningful change. This loophole exists within the IWT's enforcement.[168] In many instances, when India is accused of violating the IWT, India maintains that it can construct as many structures as it wants to, as long as it does not divert its waters away from their natural course or use waters for consumptive purposes.[169]

Robert G. Wirsing and Christopher Jasparro have noted that India is trying to poach Pakistani waters. They add that the permission in the IWT of the construction of infrastructure for non-consumptive uses is a futile task of guarding its water resources against Indian poaching.[170] Furthermore, Pakistan claims that India is robbing Pakistani waters. This assertion reflects the gradual but dramatic decrease of water flows and supplies from India over time. In response, India claims that the decreased water flows are due to climate change, not its construction works.[171] Consequently, the trust deficit between India and Pakistan seems irreparable, since there is no transparency in essential data sharing mechanism of water flows. In order to mend this conflict, certain measures within

162. *Id.*; INDIA'S FOREIGN RELATIONS 2008, *supra* note 89, at 1779.

163. Ali et al., *supra* note 66, at 174.

164. IWT Resolution, *supra* note 46.

165. *Id.*

166. *Id.*

167. Kokab & Nawaz, *supra* note 47, at 212; Adeel, *supra* note 91, at 4–5; Jain, *supra* note 62, at 940.

168. Jain et al., *supra* note 62, at 940; IWT Resolution, *supra* note 46, at 21.

169. *Id.*

170. Robert G. Wirsing & Christopher Jasparro, *Spotlight on Indus River Diplomacy: India, Pakistan, and The Baglihar Dam Dispute*, ASIA-PACIFIC CTR. FOR SEC. STUD. (2006).

171. TROPIC OF CHAOS: CLIMATE CHANGE AND THE NEW GEOGRAPHY OF VIOLENCE 129 (2012).

the scope of the current IWT should be employed to resolve tensions between India and Pakistan, such as installation of telemetry system.[172]

A. Resolving Conflicts under the Current Mechanism of the IWT

The IWT is a comprehensive document and its provisions can effectively resolve all the outstanding conflicts between India and Pakistan. For instance, Article 6 mandates the exchange of data between India and Pakistan regarding water flows and construction works.[173] Similarly, Article 7 sets out a mechanism for cooperation between Pakistan and India by mutual agreement.[174] These provisions and their scope are flexible, and can be expanded to cover current disputes between India and Pakistan.

1. Trust Deficit due to Noncompliance

As a lower riparian state and as a party to the IWT, it is Pakistan's right to be informed of the commencement of any kind of construction work by India over the western rivers.[175] Under the IWT, India is supposed to exchange data of planned construction works at least six months before their commencement.[176] Section 9 of Annexure D of the IWT requires India to communicate relevant information to Pakistan regarding power production projects. Annexure D, Section 9 states as follows, regarding the exchange of data on Indian construction works:

> To enable Pakistan to satisfy itself that the design of a Plant conforms to the criteria mentioned in Paragraph 8, India shall, at least six months in advance of the beginning of construction of river works connected with the Plant, communicate to Pakistan, in writing, the information specified in Appendix II to this Annexure. If any such information is not available or is not pertinent to the design of the Plant or to conditions at the site, it will be so stated.[177]

Section 9 of Annexure D focuses mainly on run-of-the-river power production plants. Analogously, Section 12 of Annexure E requires India to share data six months prior to the commencement of the construction of storage facilities.[178]

Likewise, Section 4 of Annexure E obliges India to share information with Pakistan about storage facilities.[179] These obligations are mainly provisioned to ensure that Pakistan's water interests are secured, and that India's construction works are in conformity with the provisions of IWT. Information sharing enables Pakistan to raise timely objections to any construction works that it considers to be

172. *See* Iqbal, *supra* note 89, at 106.
173. Indus Waters Treaty, *supra* note 60, art. 6.
174. *Id.* art. 7.
175. *See* Iqbal, *supra* note 89, at 108, 114–15
176. *See* Indus Waters Treaty, *supra* note 60, at Annex. D § 9, Annex. E, § 12.
177. *Id.* at Annex. D § 9.
178. *Id.* at Annex. E § 12.
179. *Id.* at Annex. E §§ 4–5, Annex. E § 12.

in violation of the requirements under the IWT.[180]

Despite the information sharing mandated in Section 9 of Annexure D and Section 4 of Annexure E, in practice, sharing data is neither clear nor simple during the construction works and regarding the inflows and outflows of India's projects over the western waters.[181] As a result, deferred and derisory exchanges of data lend to the creation of water disputes.[182] India has frequently failed to deliver complete and unequivocal data in a timely fashion to Pakistan. Pakistan raised grievances during the construction works of the Wullar, Baglihar, Dul-Hasti, Uri – II, Kishanganga, Chutak, and Nimoo Bazgo projects but India provided no data upon Pakistan's lodging of complaints in these instances.[183]

The obscurity in exchanged data diminishes Pakistan's ability to evaluate or access the compatibility of India's projects with provisioned requirements for the construction of infrastructure under the IWT.[184] A timely exchange of data is vital to Pakistan's ability to gauge the legality of India's projects under the IWT and raise timely objections.[185] Arguably, if India complies with the provisions of the IWT by exchanging construction works data in a timely manner, then mainstream Pakistani concerns over India's construction works could be mitigated.[186]

2. Sharing Data and Building Trust

As a lower riparian state and a party to the IWT, it is Pakistan's legal right to receive water flow data on the western rivers from India.[187] Specifically, under Article 6 of the IWT, it is the Indian obligation to exchange all such data.[188]

Article 6 reads as follows:

> 1) The following data with respect to the flow in, and utilization of the waters of, the Rivers shall be exchanged regularly between the Parties: -
>
> a) Daily (or as observed or estimated less frequently) gauge and discharge data relating to flow of the Rivers at all observation sites.
>
> b) Daily extractions for or releases from reservoirs.
>
> c) Daily extractions for or release from reservoirs.
>
> d) Daily withdrawals at the heads of all canals operated by the government or by a government agency (hereinafter in this Article called canals), including link canals.
>
> e) Daily escapages from all canals, including link canals.

180. *Id.*
181. *Id.*
182. Iqbal, *supra* note 89, at 107.
183. *See* Ali et al., *supra* note 66, at 174.
184. Iqbal, *supra* note 89, at 107–08.
185. *Id.; see also* Indus Waters Treaty, *supra* note 60, art. 6.
186. *Id.*
187. Indus Waters Treaty, *supra* note 60, art. 6; *see also* Iqbal, *supra* note 89, at 106.
188. Indus Waters Treaty, *supra* note 60, at Annex. C § 10; *see also* Iqbal, *supra* note 89, at 106.

f) Daily deliveries from link canals.

These data shall be transmitted monthly by each party to the other as soon as the data for a calendar month have been collected and tabulated, but not later than three months after the end of the month to which they relate: Provided that such of the data specified above as are considered by either Party to be necessary for operational purposes shall be supplied daily or at least frequent intervals, as may be requested. Should one Party request the supply of any of these data by telegram, telephone, or wireless, it shall reimburse to other Party for the cost of transmission.

2) If, in addition to the data specified in Paragraph (1) of the Article, either Party requests the supply of any data relating to the hydrology of the Rivers, or to canal or reservoir operation connected with the Rivers, or to any provision of this Treaty, such data shall be supplied by the other Party to the extent that these are available.[189]

Article 6 explicitly makes it obligatory for India to exchange data with Pakistan with regard to inflows and outflows of any relevant structure constructed by India on the western waters.[190] The decreased river flows, as a result of India's projects, consist of the majority of water disputes between Pakistan and India. Pakistan believes that India is intentionally diverting Pakistan's water supplies, while India maintains that the decreased water flow into Pakistan is due to climate change.[191] These differing opinions escalate into full-blown disputes because of the prevailing opaqueness in data sharing with Pakistan,.[192] The leading cause for this trust deficit may not appear malicious on its face, as both states operate outdated technology for gauging and sharing technical data. However, in consideration of the prevalent accessibility of superior technology and data sharing mechanisms, this lack of transmutation can only represent opaqueness.[193]

Fortunately, installing modern technology on rivers, canals, and infrastructure can abridge this issue. For instance, the installation of a simple telemetry system would ensure the real-time exchange of data between India and Pakistan. A telemetry system is a water management application that reflects the real-time data of water flows.[194] This system is acclaimed worldwide because of its convenience; for instance, this system can measure water "quality, quantity, sediment flow, snow, ice melt, weather forecasting, and meteorological data, water shed

189. Indus Waters Treaty, *supra* note 60, art. 6.
190. *Id.*
191. *See* Iqbal, *supra* note 89, at 107.
192. *Id.* at 106.
193. *Id.*
194. Naz, *supra* note 68, at 108.

forecasting, flood warning."[195] In the summer of 2010, at an Indus Water Commission meeting, India and Pakistan agreed to install a telemetry system to ease the exchange of data and placate water conflicts, and in doing so mitigate the trust deficit between the nations.[196] This installation will enable India and Pakistan to record and exchange real-time data with each other at ease. Successful installation of this system would possibly diminish the trust deficit between the states and will enhance transparency in the water sharing system.[197] Moreover, this system would be able to forecast floods and would be able to decrease the subsequent devastation[198] in both states. However, this system has not been installed so far.

3. Stretching Article 7

India argues that a new treaty is needed in light of emerging concerns that the existing legal framework under the IWT is ill-equipped to handle the main aspects of contemporary water conflicts.[199] For instance, Indian experts note that the IWT does not cover environmental aspects of water apportionment. It does not address regulations regarding groundwater aquifers as a transboundary resource of water. Further, it does not address concerns specific to climate change and glacier melting in the greater scheme of water apportionment.[200]

India's contention would hold that the evolving nature of climate change and glacier melting is not quantified in water apportionment, and therefore the decreased water flows are not addressed under the IWT as it currently stands.[201] On the other hand, owing to the trust deficit, Pakistan maintains that it is India's water diversions, rather than natural, environmental phenomena, that have restricted Pakistan's water supplies.[202] Fortuitously, the installation of a telemetry system can resolve these water conflicts, as discuss in the previous section.[203]

For instance, Article 7 of the IWT provides a mechanism to placate growing tensions within the existing legal framework of the IWT. Article 7 states as follows:

> The two Parties recognize that they have a common interest in the optimum development of the rivers and they declare their intention to cooperate by mutual agreement, to the fullest possible extent. In

195. THE HYDROLOGY–GEOMORPHOLOGY INTERFACE: RAINFALL, FLOODS, SEDIMENTATION, LAND USE 116 (Marwan A. Hassan et al. eds., 2000) [hereinafter Hassan et al.].

196. Ahmad Fraz Khan, *Pakistan & India Agree to Install Telemetry System*, DAWN (Jul. 22, 2010), https://www.dawn.com/news/print/958036.

197. *Id.*

198. Hassan et al., *supra* note 196, at 116.

199. Chandio, *supra* note 94.

200. Iqbal, *supra* note 89, at 112–13.

201. *See generally* Iqbal, *supra* note 89.

202. Kokab & Nawaz, *supra* note 47, at 212; *see also* Adeel, *supra* note 91, at 2, 4; *see also* Jain et al., *supra* note 62, at 1058.

203. *Telemetry System & Confidence Building*, DAWN (Aug. 9, 2010), https://www.dawn.com/news/839056.

particular:

a) Each Party, to the extent it considers practicable and on agreement by the other Party to pay the costs to be incurred, will, at the request of the other Party, set up or install such hydrologic observation stations within the drainage basins of the Rivers, and set up or install such meteorological observation stations relating thereto and carry out such observations thereat, as may be requested, and will supply the data so obtained.[204]

This provision permits both states to install observation stations to track water flows and other essential data. Similarly, both states may construct meteorological observation stations, which can be used to observe and forecast floods, weather conditions, and soil erosion, in addition to check the quantification of water flows.[205]

These observatories can be used to evaluate water flows, transmit data in a timely manner, and resolve forthcoming disputes from either party. For instance, the installation of these observatories would allow India and Pakistan to observe the Himalayan glaciers and determine ice-melting quantification in water flows. In this context, the International Centre for Integrated Mountain Development (ICIMOD) in Nepal has already taken the lead in observing the ebbing of glaciers and its effects on water supplies. China, India, and Pakistan, among others, have readily consented to collaborate with ICIMOD in this scientific venture because of the growing concern over the impacts of climate change in the Indus Basin.[206] A multilateral, collaborative agreement among all nations in the Indus Basin is necessary to evaluate future consequences of climate change and safeguard the shared water supplies.[207]

As a lower riparian state, Pakistan is situated in a geographically fragile position, particularly as India's construction works over the western rivers have caused substantial environmental degradation.[208] In this regard, the scope of Article 7 should be expanded to accommodate environmental protection. Other international instruments, like the Convention on the Law of the Non-Navigational Uses of International Watercourses, 1997, oblige states to prepare environmental impact assessment reports for any major construction endeavor.[209] Another route to ensuring environmental protection would be for India and Pakistan to mutually require the creation and maintenance of impact assessments for any project on or near the western rivers.

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204. Indus Waters Treaty, *supra* note 60, art. 7.

205. *Id.*

206. UNESCO, FREE FLOW: REACHING WATER SECURITY THROUGH COOPERATION 68 (2013); *see also* RAMESHA CHANDRAPPA ET AL., COPING WITH CLIMATE CHANGE: PRINCIPLES AND ASIAN CONTEXT (2011).

207. *Id.*

208. Jain et al, *supra* note 62, at 929–31.

209. United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses art.12, G.A. Res. 51/229, U.N. GAOR, 51st Sess. (1997).

V. CONCLUSION

Upper riparian nations with military, economic, and political might tend to enjoy hydro-hegemony in their regions when utilizing international river waters.[210] India, as an upper riparian state, is trying to take control of the water supplies of Pakistan in order to establish hydro-hegemony and enjoy political supremacy.[211] This is evident through an examination of India's non-compliance with the Indus Waters Treaty and its recent efforts to modify the existing framework of the IWT, or scrap it entirely. Furthermore, India's rationale, corroborated by government records and scholarly reports, demonstrates its desire for regional hydro-hegemony. Hydro-hegemony in turn gives rise to water conflicts.[212]

Despite the presence of a water sharing treaty (the IWT), India and Pakistan face ongoing and surmounting water disputes. These conflicts are clearly articulated by Pakistan's concerns over India's construction works on the Western rivers. The dispute resolution framework of the IWT is slow to process conflicts, which defeats its purpose. This is because by the time the issue gets to the highest available forum to seek justice the Indian construction works have typically been completed or incurred so much cost that the forums are unable to deliver justice to Pakistan.[213]

Over time, and through the construction of numerous, massive water storage and management facilities, India has managed to acquire considerable storage and managerial capability over the western tributaries. With this ability, India can cause droughts and floods in Pakistan at whim.[214] It is calculated that India can stop all water supplies of Pakistan in a conflict for twenty-eight consecutive days.[215] As such, India's capacity to hold Pakistan's water supplies is tantamount to a political maneuver to ensure Indian political supremacy in times of war or conflict. Additionally, this translates into Indian hydro-hegemony over Pakistan, so that India can use hydropolitics to influence Pakistan during conflicts and political disputes, which will ensure Indian political supremacy in the regional politics as well.[216]

The existing legal framework of the IWT poses an impediment to the Indian desire to establish hydro-hegemony and deny Pakistan's legal water rights. As a result, Indian authorities are rethinking the IWT and go so far as to imagine unilaterally scrapping of the IWT.[217] India's need for a new mechanism for apportioning water only arose because the existing framework does not legitimately allow India to divert or store western river waters, which are

210. Adeel, *supra* note 91, at 2.

211. *Id.*

212. Hipel et al., *supra* note 32, at 140.

213. Adeel, *supra* note 91, at 5; Jain et al, *supra* note 62, at 1058–59; *see also* Iqbal, *supra* note 89, at 108.

214. ANDREW GUZMAN, OVERHEATED: THE HUMAN COST OF CLIMATE CHANGE 159 (2013).

215. Chandio, *supra* note 94, at 3.

216. Iqbal, *supra* note 89, at 12; *see also* Adeel, *supra* note 91, at 4, 7.

217. Iqbal, *supra* note 89, at 104–5; *see also* Chandio, *supra* note 94, at 4.

designated for the unrestricted use of Pakistan but lie physically in Indian-occupied Kashmir.[218]

On the other side, Pakistan strongly opposes modification or revocation of the IWT and prefers the possibility of resolving water conflicts peacefully and efficiently within the existing legal framework provided in the IWT.[219] It is noted in this Article that almost all water conflicts between India and Pakistan are due to the opaqueness in the sharing of data on water flows.[220] Pakistan claims that India is robbing Pakistan's waters, based on the fact that water flows and supplies from India have decreased dramatically. In response, India claims that the decreased water flows are due to climate change. Consequently, there is a significant trust deficit between these two states, since there is no transparency in the data sharing mechanism regarding water flows.

A timely exchange of data is Pakistan's legal right, in order to gauge the legality of Indian projects under the IWT, so that Pakistan can appropriately raise objections.[221] Under the IWT, India is supposed to exchange data on planned constructions at least six months before the commencement of any construction works.[222] Installing modern technology on rivers, canals, and infrastructure can resolve the trust deficit. The installation of simple telemetry system would ensure the real-time exchange of data[223] between India and Pakistan. The successful installation of this system could diminish the trust deficit and escalate transparency in the water sharing system, resulting in the defusing of tensions between India and Pakistan.[224]

218. Iqbal, *supra* note 89, at 114.

219. Anwar Iqbal, *Pakistan Not to Accept Alteration in Indus Waters Treaty*, DAWN (Dec. 17, 2016), https://www.dawn.com/news/print/1302848.

220. Iqbal, *supra* note 89, at 106.

221. Indus Waters Treaty, *supra* note 60, art. 6.

222. *Id.* at Annex. D § 9, Annex. E § 12.

223. *See* Hassan et al., *supra* note 195.

224. Iqbal, *supra* note 89, at 106.