

CHAOPHRAYA ESSAYS

India, Pakistan, Water and the Indus Basin:
Old Problems, New Complexities



ABOUT THE SERIES

The 'Chaophraya Essays' is a series of essays on bilateral challenges to the normalization of India-Pakistan relations. The series is a culmination of ideas and thoughts exchanged at the Chaophraya Dialogue task force and side meetings since 2014, when participants at the dialogue discussed sharing the wealth of information, ideas and solutions that have been generated through the Chaophraya Dialogue over the years.

Each essay has been contributed by one of Pakistan's leading voices on policy who have regularly participated in the long running Chaophraya Dialogue, a joint India-Pakistan Track II initiative undertaken by the Islamabad-based Jinnah Institute (JI) and Melbourne-based Australia India Institute (AII).

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INDIA, PAKISTAN, WATER AND THE INDUS BASIN: OLD PROBLEMS, NEW COMPLEXITIES

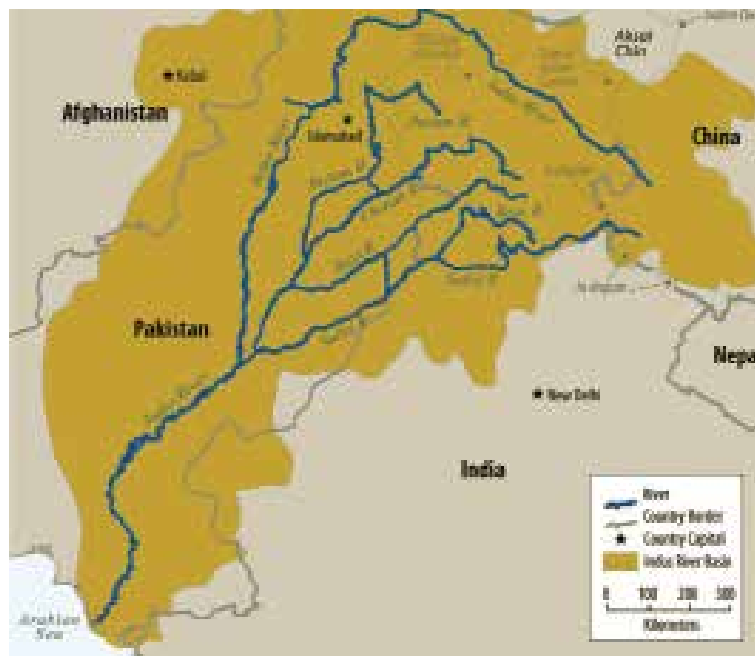
Ahmad Rafay Alam

INTRODUCTION

The Partition of India divided the largest contiguous gravity flow irrigation system on the planet, creating a new riparian relationship between India and Pakistan over the Indus Basin. Whilst the Indus Waters Treaty of 1960 has been successful in defining the rights of the riparians over the rivers of the Indus Basin for the past six decades, new challenges such as climate change and unsustainable groundwater mining are raising water- and food-security concerns that the Treaty was neither intended to nor envisioned to deal with. Emerging regional developments, such as China's One Belt One Road Project and the China-Pakistan Economic Corridor also challenge the fundamental regional security framework. In this paper, the emerging challenges of the Indus Basin are set against these new challenges as well as the past application of the Treaty. The review of the application of the Treaty reveals that while India and Pakistan make rights-based claims on the Treaty, they are willing to accept needs-based decisions, possibly opening new areas of consensus in transboundary water management. In examining this ageing Treaty's limitations against these development, new transboundary water management challenges, and opportunities, emerge.

CHARACTERISTICS OF THE INDUS BASIN

The River Indus rises in China and runs 3,200km across parts of India and the length of Pakistan before emptying into the Arabian Sea. The Indus Basin encompasses 1.12 million kilometers² with 47 percent of this area falling in Pakistan, 39 percent in India, eight percent in China and six percent in Afghanistan. The Basin counts 27 major tributaries, with six of the most significant branches, the Rivers Chenab, Ravi, Sutlej, Jhelum and Indus itself, flowing westwards from India to Pakistan. A seventh significant tributary, the River Kabul, rises in Afghanistan and flows eastwards into Pakistan.



Map of the Indus Basin

Although the Indus Basin comprises of four riparian states, there is only one legal arrangement

related to the sharing, division or transboundary management of water therein: the Indus Waters Treaty (IWT) between India and Pakistan, which was executed with the assistance of the World Bank in 1960. The IWT only clarifies the rights of two of the four riparian States over six of the twenty-seven tributaries of the River Indus. It does so not by setting out how these waters are to be shared, but rather by dividing the waters of the six tributaries between the two riparian States. Under the IWT, India has exclusive use of the waters of the Eastern Rivers, namely the Beas, Ravi and Sutlej while Pakistan has use – subject to limited Indian rights to develop, inter alia, certain types of non-consumptive run-of-the-river hydropower projects subject to detailed criteria – of the waters of the Western Rivers, namely the Rivers Indus, Jhelum and Chenab.

The mean average of the annual flow of the Indus Basin is about 168 million acre feet. Approximately 69 percent of the flow originates in India and Indian administered Kashmir, 19 percent from Pakistan and 12 percent from China and Afghanistan collectively. India and Pakistan represent almost all of the demands on the resources of the Indus Basin. Pakistan draws 63 percent of the water used in the Basin and India draws 36 percent. The Basin supplies the needs of approximately 300 million people living in the basin and helps feed and employ millions more beyond its boundaries. With agriculture accounting for 93 percent of water withdrawn from it, the Basin is the major source of employment, food and cash crops in both countries. In Pakistan, agriculture employs 40 percent of the labour force, contributes up to 22 percent of GDP; in India it produces a quarter of the country's grain supply. However, unlike India, which has other water sources and river basins, Pakistan is critically dependent on the Basin as its only water resource.

The surface water flows in the Indus Basin are not regular and depend on variables such as precipitation (from June to September) and glacial melt. Local river flow in upper sub-basins derives mainly from the surrounding catchment while upstream discharges are the major source of local river flow in lower sub-basins. The variability in flow and its composition raises significant challenges for, but ultimately prove the need and importance of integrated water management of, the Basin. Some have argued that nothing short of large storage dams can harness the variability of water flows for ensuring water- and food-security throughout the year.

The Indus Basin also represents an extensive groundwater aquifer, covering a gross command area of 16.2 million hectares. Before the introduction of the canal irrigation system in the 19th and 20th centuries, the aquifer was in a state of hydrological equilibrium, with recharge from rivers and rainfall balanced by outflow and crop evapotranspiration. The irrigation system, the largest contiguous gravity flow irrigation system in the world, resulted in increased percolation to the aquifer in irrigated areas, causing salinity and waterlogging issues. While the higher water tables in freshwater zones have been used by wells and tube wells, today groundwater extraction exceeds recharge and these aquifers are under increasing pressure.

CLIMATE THREATS AND VULNERABILITIES

Basin hydrology does not respect the concept of the sovereign nation state. Neither does climate change. And while glacial melt is a real and present threat, one of the most pronounced aspects of climate change in South Asia has been the variation in the timing and intensity of the Monsoon and, consequently, floods in the Indus Basin. Since 2010, both countries have experienced flooding every Monsoon, with Pakistan suffering a devastating “1000-year” flood in 2010 that submerged nearly 20 percent of its landmass.² The transboundary nature of climate and basin hydrology challenges the existing legal and institutional frameworks in the riparian states.

The variations in the Monsoon have, in this decade alone, produced devastating floods, brought about draught conditions and adversely impacted crop production.³ The human and economic loss of this is impossible to quantify. Commercial activities and human settlements in low-lying flood-plains constantly face the risk of heightened flows during periods of heavy precipitation.

Existing Indus Basin supplies, both surface and groundwater, have been adversely impacted by variety of human causes: industrial and agricultural pollution that renders water supplies unusable, water withdrawals that result in unsustainable environmental flows and storage and hydroelectric dams that impact every scale of a river's ecology from mouth to delta.

These climate risks and environmental challenges are straining existing and future water supplies. So are the water demands of growing populations and increasing development within the Indus Basin. Taking growing populations and increasing water withdrawals into account, water availability in the Indian part of the Indus Basin is expected to slide from 2,109m³ per capita in 2000 to 1,732m³ in 2050 and in Pakistan from 1,332m³ to 545m³. The future of the subcontinent is water scarce or water stressed.

Country	India	Pakistan	Total
Average long-term available renewable water supplies in the IRB	97 km ³ /year	190 km ³ /year	287 km ³ /year
Estimated renewable surface water supplies in the IRB	73 km ³ /year	160-175 km ³ /year	233-258 km ³ /year
Estimated renewable groundwater supplies in the IRB	27 km ³ /year	63 km ³ /year	90 km ³ /year
Estimated total water withdrawals in the IRB	98 km ³ /year	180-184 km ³ /year	278-299 km ³ /year
Estimated total surface water withdrawals in the IRB	39 km ³ /year	128 km ³ /year	
Estimated total groundwater withdrawals in the IRB	55 km ³ /year	52-62 km ³ /year	

Note: Figures for surface and groundwater supplies may not sum evenly to figures for total renewable water resources because a large fraction of groundwater and surface water resources overlap, so that separate supplies cannot be absolutely distinguished.

Source: Derived from FAO, *Irrigation in Southern and Eastern Asia in Figures: AQUASTAT Survey 2011*, Karen Frenken ed. (Rome: FAO, 2012); A.N. Laghari et al., "The Indus basin in the framework of current and future resources management," *Hydrology and Earth Systems Sciences* 16, no.4 (2012); Bharat R. Sharma et al., "Indo-Gangetic River Basins: Summary Situation Analysis," International Water Management Institute, New Delhi Office, July 2008.

Renewable Water Resources and Withdrawal Levels in the Indus Basin ⁴

Increasing water scarcity has long-term implications on food production and livelihoods within and outside the Indus Basin. Variations in the Monsoon and climate patterns have an impact on crop productivity and corresponding livelihoods from the farm to the market. Changing lifestyles within the Basin are also driving water demand for food production as an emerging middle class displays a preference for meat and dairy. The unreliability and inefficiency of the irrigation network has led farmers to use tube wells to irrigate crops with ground water. Poor ground water regulations and politically motivated electricity tariffs have resulted in unsustainable withdrawals from the Indus Basin aquifer, and pollution risks compromising existing renewable freshwater resources.

² For details of the cost of the 2010 floods in Pakistan, see Kirsch, Wadhvani et al. "Impact of 2010 Floods on Rural and Urban Pakistan at six months" available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3441151/>

³ The News "Climate Change dents cotton output in Punjab", 8 December 2015 available at <http://www.thenews.com.pk/print/80322-climate-change-dents-cotton-output-in-punjab>

⁴ Figure 2 in *Connecting the Drops: An Indus Basin Roadmap for Cross-Boarder Water Research, Data Sharing and Policy Coordination* (Stimson, Observer Research Foundation and Sustainable Policy Development Institute, 2013), p. 15

Both Pakistan and India identify the development of water resources as the lynchpin of economic development. Economic development in the Indus Basin is often linked to the development of large storage dams or hydropower dams to regulate the flow and availability of water and to generate electricity. India Central Electricity Authority of India has identified 33,832 MW and the Water and Power Development Authority of Pakistan has identified 25,000 MW of hydropower potential in their respective parts of the Basin. The amount and type of hydroelectric infrastructure constructed in the future will have major implications for water users in the Basin.

Whilst the climate challenges in and to the Basin can be discerned through a water-based analysis, the differing dependences of Pakistan and India to the Indus Basin have resulted in vastly differing responses to climate change and food- and water-security issues. The different roles, stances and negotiating positions taken by both countries at the U.N. Conference on Climate Change in Paris in December 2015 is evidence of this differing response at the international level. But even at an internal level, climate adaptation and mitigation plans and strategies in place in either country prescribe vastly differing agendas. Post-devolution, water management in South Asia, in law, is also a State/Provincial responsibility. The water- and food-security related plans and policies of these intra-State stakeholders play out on a completely different and unconnected scale to the IWT, or the official bilateral dialogue between Islamabad and New Delhi. It is difficult, therefore, to identify existing legal and institutional frameworks, including the framework provided by the IWT, that can allow both sides to work together on transboundary water issues related to the Indus Basin.

APPLICATION OF THE INDUS WATERS TREATY: RIGID PAST POSITIONS AND UNCERTAIN FUTURE COMPLEXITIES

Transboundary water in the Basin is regulated by the Indus Waters Treaty, 1960. Before further discussion, it is helpful to summarise the significant incidents where the IWT has been invoked:

1) Wular Barrage Controversy

The Wular Lake is located in the Bandipora district in the Indian state of Jammu and Kashmir. It is fed by the River Jhelum (a Western River under the IWT). In 1984, the Indian government began work on the Tulbul Project – a navigation lock-cum control structure on the mouth of Wular Lake – that would help keep the minimum draught of 4.5 feet in the river for navigation purposes and provide an additional 0.3 MAF of storage. Pakistan objected to the Project in 1987 by approaching the Indus Waters Commission, alleging it was in violation of the IWT, and construction was halted thereafter. Pakistan's apprehensions were based on the following reasons:

- A barrage may damage Pakistan's own triple-canal project linking Jhelum and Chenab with the Upper Bari Doab Canal;
- A barrage would be a security risk enabling the Indian Army to make crossing the river either easy or difficult, at will, by the controlled release of water;
- After constructing the dam, India would control the flow of water into the Jhelum, creating drought and flood situations at will in Azad Kashmir and Pakistan; and
- It would ruin Pakistan's agriculture.

The issue has been taken up by the two Governments, who have held repeated rounds of talks, without any resolution or progress. Most recently, following the visit of Prime Minister Narendra Modi to Pakistan in December 2015, the Wular Barrage/Tulbul Project was included in the list of subjects that form the "comprehensive bilateral dialogue" to be carried out at the Foreign Secretary level in early 2016 but to date, the bilateral stalemate continues into 2017.

⁵ Syed Shahid Hussain, former Secretary, Minister of Water and Power, Government of Pakistan as quoted in South Asian Journal (April-June, 2005) and by The Baghliar Dispute, Water Power & Dam Construction (available at <http://www.waterpowermagazine.com/news/newsthe-baghliar-dispute>)

⁶ Salman, MA Salman "The Baghliar Difference and its resolution process – a triumph of the Indus Waters Treaty", Water Policy 10 (2008) 105 at p. 115 (available at <http://www.internationalwaterlaw.org/bibliography/articles/Salman/Baghliar.pdf>)

2) Baghliar Difference

In 2005, Pakistan approached the World Bank under the IWT, asking it to appoint a Neutral Expert to address a “difference” which had arisen in relation to the Baghliar hydropower plant which was under construction by India on the River Chenab (a Western River). Pakistan claimed the design of the run-of-the-river, 450MW, hydropower plant did not conform with the criterion stipulated in the IWT. Behind these technical differences was Pakistan’s belief that the plant would give India the ability to easily withhold water during shortages and release water during excess.⁵ India’s response was to point out that doing so would damage its own downstream Salal hydropower project.

The difference was decided by the Neutral Expert in 2007, accepted by both countries and even touted as victory by both. The decision addressed the six issues of concern (“differences”, in the language of the Treaty that require resolution by a Neutral Expert) raised by Pakistan. According to Salman⁶:

Two observations are worth making with regard to the process and the decision of the Neutral Expert:

Firstly, as appeared from the composition of the two delegations, Pakistan seemed to have viewed the difference as largely a legal one, involving the interpretation of the Treaty, while India seemed to have viewed it mainly as an engineering one, regarding hydropower plants (Executive Summary, 2007).

Secondly, the Neutral Expert opined that the rights and obligations of the parties under the Treaty should be read in the light of new technical norms and new standards as provided for by the Treaty. This meant that the Baghliar difference was addressed bearing in mind the technical standards for hydropower plants as they have developed in the first decade of the twenty-first century, and not as perceived and thought of in 1950s when the Treaty was negotiated. The reference to modern technical standards is particularly clear in the discussion and analysis by the Neutral Expert of the issue of gated or ungated spillway summarised earlier.

Climate change and its likely effects is another example of contemporary concerns not prevalent or thought about during the 1950s which was taken into account by the Neutral Expert in his decision. It should be added that, along the same lines, the International Court of Justice in the Danube dispute between Hungary and Slovakia (the Gabčíkovo-Nagymaros case) required that the current standards must be taken into consideration when evaluating the environmental risks of the project. This manner of interpretation will most likely influence future interpretation of the Treaty, as well as other international water treaties.

3) Kishenganga Arbitration

The Kishenganga Hydroelectric Plant is part of a run-of-the river hydroelectric scheme designed to divert water from the River Kishenganga to a power plant in the Jhelum Basin. It is located in the state of Jammu and Kashmir (J&K) and will have an installed capacity of 330MW.

Construction on the project began in 2007, but was halted by The Hague’s Permanent Court of Arbitration in October 2011 due to Pakistan’s objection that it would affect the flow of the River Kishenganga and thus the River Jhelum (a Western River).

In 2010, Pakistan instituted arbitral proceedings against India under the IWT and approached the International Court of Arbitration (ICA) against violations of the Treaty. Pakistan alleged plant design would increase the catchment of the River Jhelum and deprive it of its water rights. In a partial award delivered in February 2013, the ICA ruled India could divert water of the Western Rivers for non-consumptive manner for optimal generation of power. In a “final award” given in December 2013, the ICA specified that 9m³/s of natural flow of water must be maintained in the River Kishenganga at all times to maintain the environment downstream.

⁵ James Wescoat, as quoted in Wolf, Aaron T. “Criteria for equitable allocations: The heart of international water conflict”, *Natural Resources Forum*, Vol. 23 #1, February 1999, pp. 3-30 (available at <http://www.transboundarywaters.orst.edu/publications/allocations/>)

A common feature of these three examples is the manner in which Pakistan and India framed their initial positions versus the final outcome of the dispute resolution process. In all three incidents discussed, proceedings were initiated by a rights-based allegation i.e. Pakistan alleging its rights were being violated. The Indian reply, in all three cases, has also been rights-based: that Pakistan is seeking to restrict its rights to develop limited hydropower potential subject to detailed criterion in a manner so as to defeat such right.

In the dispute resolution process followed in the Baghliar and Kishanganga incidents, the dispute resolution mechanisms of the IWT stressed needs-based solutions based on changing technical standards, climate change challenges, environment flow and development of hydropower potential.

The shift from rights-based claims to needs-based resolutions is, in Wescoat's view, indicative of the need to shift the emphasis from defining generalised principles to encouraging treaty negotiations be based on the special circumstances and needs of each basin.⁷ On the other hand, it can also be said that the IWT allows its basin states to engage in rights-based rhetoric, full of martial assertions of absolute territorial sovereignty, safe in the knowledge the Treaty's dispute resolution mechanism's technical requirements ensure a needs-based resolution.

One of the unique characteristics of the IWT is that rather than sharing the waters of the Indus Basin between the two riparian countries, it divides the six major rivers comprising the Indus rivers system. Under Article II(1) of the Treaty, "All the waters of the Eastern Rivers shall be available for the unrestricted use of India except as expressly provided . . ." Article IV of the Treaty allows Pakistan to "receive for unrestricted use all those waters of the Western Rivers which India is under obligation to let flow under the provisions of Paragraph (2)". Paragraph (2) thereof stipulates India shall let flow all the waters of the Western Rivers and shall not interfere with these except for, inter alia, domestic use, non-consumptive use, agricultural use and limited hydro-electric power.

Another characteristic feature of the IWT is its dispute resolution process. To date, despite the political differences between Pakistan and India, all differences and disputes that have arisen during the operation of the Treaty have been resolved, with each country accepting the determination of decision of Neutral Expert or the ICA. The feature of the IWT is often regarded as one of its key strengths.

The IWT defines the Eastern Rivers as the Sutlej, Beas and Ravi and the Western Rivers as the Indus, Jhelum and Chenab. Eastern and Western Rivers include connecting lakes, if any, and all their Tributaries. Tributaries of a river, in turn, are defined as "any surface channel . . . whose waters in the natural course would fall into that river" (emphasis added).⁸ By limiting itself to the "waters" of the "rivers" of the Indus Basin and their tributaries, the Indus Waters Treaty does not envisage the regulation of ground water. This contention is reinforced by the following observations.

Amongst the responsibilities of the Permanent Indus Commission established by the IWT is the exchange of data. Article VI provides information regarding daily flow, withdrawal, escapages and delivery from link canals shall be exchanged regularly between the parties. By restricting the exchange of data to surface water of the rivers, the Treaty indicates it does not envisage ground water. Article VII of the Treaty provides for future cooperation and states both Parties "recognise they have a common interest in the optimum development of the Rivers . . ." and agree to cooperate to the fullest possible extent, but in particular on the establishment of hydrologic and meteorological observation stations and drainage and engineering works. Again the Treaty restricts itself to the waters of the Indus Basin's major rivers and does not specifically apply to the Indus Basin aquifer.

There are, however, arguments that the Treaty may be revised or upgraded to include issues that have

⁸ See, generally, Article I of the Indus Waters Treaty, 1960

arisen in relation to proper implementation of the Treaty but which were not considered by it at the time. Such arguments can be extended to include provisions regarding ground water or climate change. The Indus Basin Working Group report on the Indus Basin encapsulates these arguments as follows:

Since 1960, the IWT has stood through the 1965, 1971 and 1991 wars between the two countries and survived numerous lesser clashes. Yet marked dissatisfaction with the IWT exists in both India and Pakistan. A significant body of opinion in India regards persistent Pakistani objection to planned Indian infrastructure projects on the Western Rivers as unfairly stalling India's legitimate development programs. Many in Pakistan, in turn, fear that – though individual Indian proposals generate substantial cumulative impacts downstream. In the wake of continuing controversies, voices in both countries suggested revising the IWT terms – or even scrapping the accord and starting over. Ultimately, some future mutually agreed alternation to the IWT might improve the scope for effective international cooperation and integrated resource management across the basin. Presently, however, moves to renegotiate the IWT would almost certainly provide more contentious than current confidence levels between the parties could bear.

At present, nothing short of a revisit of the Indus Waters Treaty to include provisions with respect to ground water would allow for it to be called in aid of better transboundary aquifer management. The existing provisions of the Treaty restrict its scope to surface water alone.

Despite the IWT being negotiated between India and Pakistan using the “good offices” of the World Bank, and despite the existence of SAARC as a regional body, bilateralism and not multilateralism has been the guiding principle of Indian foreign policy towards Pakistan since at least the Simla Agreement of 1972. The consequence of such a policy has been to limit transboundary water relations of the Indus Basin to India and Pakistan alone and not to extend them to a regional or Basin States such as China and Afghanistan. Bilateralism also allows India the ability to maintain differing negotiating positions with other transboundary riparians such as China, Nepal and Bangladesh. There is no agreement between Pakistan and Afghanistan on the Kabul River. It remains to be seen whether this bilateral framework – as opposed to, for example, a regional, basin or hydrological framework – can withstand the aggressive and increasing water demands of these regional, basin or hydrological riparians as well as present and future climate risks.

Pakistan's repeated objections that hydropower development by India in its portions of the Indus Basin are not in line with the IWT (and are said to “violate the spirit of the Treaty”), over and above the individual objections to specific projects, essentially stems from a food- and water-security argument that underscores the Pakistan economy's existential reliance on the waters of the Basin. And while Pakistan and India continue to dispute the provisions of the IWT, the government of J&K has repeatedly claimed the Treaty has deprived it of the ability to develop hydropower and has plans to assess the “loss” caused to it by the Treaty.

CONCLUSIONS

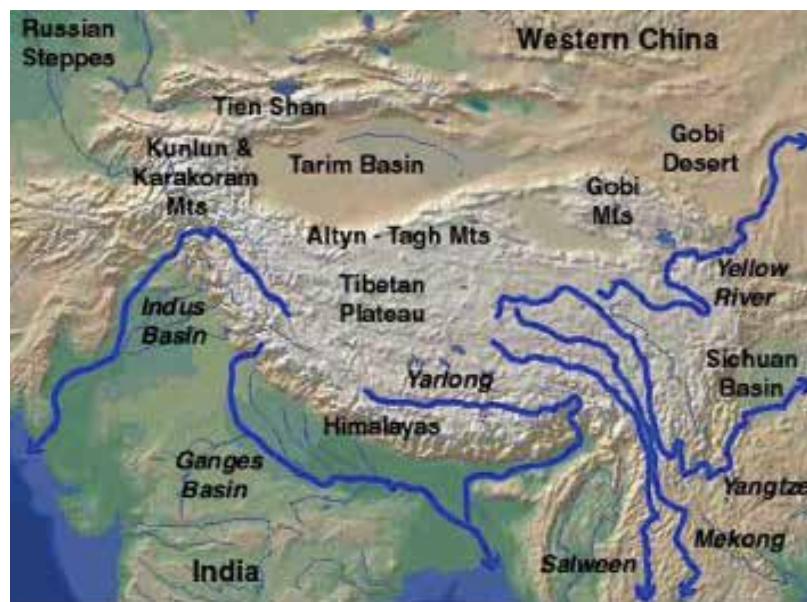
Peace is defined not just as the absence of war, but also the conditions for a just and sustainable peace. With water relations in the Indus Basin defined at this point solely by the Indus Waters Treaty, this ageing legal document singularly bears the brunt of the climate-, water- and food-security issues arising in the Basin. What remains to be seen is whether future water-related challenges can be met with modifications to the Treaty or through other means of negotiation and interaction – whether the Treaty can continue to provide conditions for a just and sustainable relationship between the two countries.

For reasons that appear evident but which cannot be explained or justified other than as an accident of history, the management and operation of the IWT, through the offices of the Permanent Commissioners, is dominated by security establishments operating in New Delhi and Islamabad. In India, for example, information relating to river flows in upper catchment areas of the Indus Basin is classified. In Pakistan, development of hydropower resources by India is viewed as a threat to the entire economy. The heavily

securitised discourse on water in the Indus Basin, reinforced in Pakistan by the fact that at present the Ministries of Defence and Water & Power are held by the same person, makes it difficult to advocate other water-related Basin issues. Issues such as climate-, water- and food-security, all security issues of grave consequence in their own right, are brushed aside in preference for issues related to the Treaty. At the same time, as described above, the IWT allows both riparian States to make rights-based claims founded on the concept of territorial sovereignty while its dispute resolution process allows for needs-based adjudication. By not taking advantage of the flexibility, India and Pakistan are not leveraging the possibility of further needs-based adjudication that would take into consideration climate- water- and food-security issues in the Indus Basin.

One limitation of the IWT is that it does not address ground water or the shared Indus Basin Aquifer. Ground water accounts for 48 percent of all water withdrawals in the Indus Basin, and current withdrawals are forecast to deplete these resources. There is no agreement between Pakistan and India over groundwater. The IWT is not a document that regulates the conjunctive use of surface and ground water; and since ground water, in both countries, is subject to laws, rules and policies set predominantly by the States/Provinces of either country – entities that otherwise do not perform any transboundary interaction – ground water related issues do not find a place in the securitised discourse of the Treaty. Yet ground water issues – better irrigation practices, rationalized electricity tariffs for tube wells, water quality and availability – are ultimately the same water- and food-security issues that underpin the securitised discourse of the IWT.

Any interaction or negotiation on transboundary ground water in the Indus Basin would have to be preceded by shared and reliable scientific data on the nature and characteristics of the Indus Basin Aquifer. Both research and subsequent interactions will take place amongst actors on the State/ Provincial level – constituencies removed from the Islamabad-Delhi stakeholders involved in the IWT. Given the often toxic level of discourse on the IWT, these constituencies are an immense opportunity to create new water relations between India and Pakistan.



Rivers of South Asia

A limitation imposed by bilateralism on water relations in the Indus Basin is that regional or basin-based approaches to just and sustainable water management have not and cannot be explored. This is tantamount to attempting to solve a thousand-piece jigsaw puzzle with only a handful of pieces.

Due to the securitised nature of the discourse on the IWT, it shall remain in force until a new security architecture rewrites the relationship between India and Pakistan. At present, the only possibility of such a rewrite is if China were to take steps to secure its relations or future investments, such as CPEC, in the region. Ideally, a new architecture would involve all the Basin States – Afghanistan, Pakistan,

China and India – operating under a framework where water was managed justly and sustainably and in a basin- or regional context.

ABOUT THE AUTHOR

Ahmad Rafay Alam is a Pakistani environment lawyer and activist. After over decade of practice, in 2013 Rafay merged his experience in civil, corporate and constitutional law with his passion for public interest environment litigation and co-founded Saleem, Alam & Co., a law firm that specializes in energy, water, natural resources, and urban infrastructure. Rafay is a regular op-ed columnist on environment, local government and urban issues. Rafay has lectured property and environment law at the Lahore University of Management Sciences, urban development at the University of Punjab and climate change and environment economics at the Lahore School of Economics. He served as Chairman of the Lahore Electric Supply Company from 2011 to 2013. He is a Member of the Punjab Environment Protection Council, the Parks and Horticulture Authority of Lahore and the Lahore Canal Heritage Park Advisory Committee. Rafay is also is a Member of the Board of Directors of the Citizens Archive of Pakistan, Vice-President (Punjab) of the Pakistan Environmental Law Association, General Secretary of the Public Interest Law Association of Pakistan and Secretary of the Lahore Biennale Foundation.

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