

**Filling the Missing Gaps in the
Indus Water Treaty**

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Institute of Strategic Studies Islamabad

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1. Introduction

The Islamic Republic of Pakistan and the Republic of India share a complex historical relationship. Apart from a common border, centuries of history and culture, languages and ethnicities, and traditions, Pakistan and India share the waters of the Indus River System.

The partition of the Indian subcontinent in 1947 resulted in the headwords of the extensive network of canals - built during the British Raj - being placed in India. This led to India becoming the upper riparian and Pakistan the lower riparian in the Indus Basin. The boundaries drawn were in disregard of hydrology since 80 per cent of the areas irrigated by the canals were in Pakistan.¹

The waters of the Indus River Basin therefore, were a major source of contention between India and Pakistan right from independence. This is evident from the number of water disputes that broke out between the two states as early as April 1948 and even led, at one point, to the unilateral termination of water supplies by East Punjab to the canals crossing into Pakistan. It thus appeared that water would serve as the most likely catalyst for future wars between the two states, given their competitive use of a shared natural resource and enmities rising from a wider conflict.

It is therefore ironic that four wars later, water is the one area where the two countries have historically afforded each other the most accommodation in bilateral relations.² The basis for this relatively stable cooperation is solely attributable to the negotiations that led to the Indus Water Treaty of 1960 (“IWT” or “Treaty”) which has been hailed as a successful instance of conflict resolution between two countries otherwise locked in conflict.³

The Indus Waters Treaty (IWT) was signed between the two parties on September 19, 1960. It is in essence, a technical treaty which attempts to provide a holistic framework for engineering solutions and mutual water management between India and Pakistan. However, unlike most international agreements of this nature, the IWT is not based on the equitable distribution of the

waters of the Indus. Instead, it is based on the division of the Indus and its five major tributaries between India and Pakistan. This is the IWT's most unique aspect.

Under the framework of the treaty, the three western rivers of the Indus Basin are allotted to Pakistan. These include the Jhelum, Chenab and the Indus.⁴ All the waters of the eastern rivers – the Ravi, Sutlej and Beas – are available to India.⁵

The IWT has endured over five decades of hostilities between the South Asian rivals including major wars. During this time, neither Pakistan nor India has ever targeted each other's canals and hydroelectric facilities nor sought to terminate the Treaty. This is demonstrative of the fact that both States recognize the need for cooperation in order to safeguard their long-term access to the waters of the Indus Basin.

Recent years, however, have seen water once again become a divisive issue between India and Pakistan. For a variety of reasons discussed further below, the IWT has come under strain, raising doubts about its efficacy in safeguarding the national interest across both sides of the border. These fears, most of which are legitimate, contain the potential to escalate into hysteria by being misconstrued and misrepresented by hawkish elements on both sides. There is, therefore, a need for both countries to engage in constructive engagement in order to understand each other's legitimate concerns and fears and resolve them through bilateral dialogue.

This paper attempts to highlight Pakistan's primary concerns vis-à-vis the IWT. The first section discusses the water security threat felt by Pakistan by Indian hydropower development on the western rivers. It will examine, from a legal perspective, the capacity of the IWT to cater to such concerns.

It will be argued that the best course of action for addressing Pakistan's strategic concerns is through bilateral dialogue with India rather than abortively through the IWT's dispute settlement framework. However, abrogation of the Treaty is out of the question. This approach does not advocate abrogating of the Treaty

is any way, but rather seeks to interpret the IWT in its proper legal context.

The second section of this paper relates to India's usage of the eastern rivers and highlights Pakistan's concerns over the adverse consequences of this usage to the environment and ecosystems of Pakistani river communities. The section will discuss whether India has an obligation, under the general principles of international law, to allow minimum flow in the eastern rivers for the purposes of conservation and river ecology.

This section will take into consideration customary international law and examine similar precedents in water jurisprudence. It will be argued that under contemporary conceptions of environmental science, it is untenable for India to claim that it has unfettered and unqualified use of the eastern rivers. Instead, India must exercise restraint and caution in its use of the rivers in order to prevent harm being caused to the ecology of the entire river system.

SECTION - I

2. Pakistan's Water Security Concerns vis-à-vis the Western Rivers

2.1 Geography of the Western Rivers

The Indus River originates in the Tibetan highlands of western China (part of the Tibet Autonomous Region). At 3,200 km long, it is one of the longest rivers in Asia and encompasses a total area of 1.12 million square kilometres. Forty seven per cent of this total area falls within Pakistan.

The river flows through Jammu and Kashmir entering Pakistan through Gilgit-Baltistan and runs through the provinces of Khyber Pakhtunkhwa, Punjab and Sindh.

The Chenab River stems from Himachal Pradesh State in Northern India, flowing through Jammu and Kashmir into Punjab. The Jhelum River begins in Western Jammu and Kashmir and is joined by the Neelum River (known as the Kishenganga River in India) at Muzaffarabad in Azad Jammu and Kashmir. The Jhelum then flows south into Punjab.

The Jhelum and Chenab Rivers meet at Head Trimmu in the District of Jhang in Punjab. Continuing as the Chenab, the river first meets the Ravi and then the Sutlej near the city of Bahawalpur. The River, now called Panjnad, joins the Indus near the town of Mithankot in Southern Punjab.

The Indus continues through the remainder of Punjab into Sindh, finally merging with the Arabian Sea through the Indus River Delta near the city of Karachi.

2.2 The Water Security Threat

Article 3 of the IWT allocates the unrestricted use of the western rivers to Pakistan. India is under an obligation to let flow the waters of these rivers and is not permitted any interference with these

waters except for certain limited uses. These uses consist of domestic use, non-consumptive use, agricultural use and generation of hydro-electric power. These uses are regulated and restricted in considerable detail by Annexes C, D and E of the Treaty.

In the past decade, India has initiated an ambitious program of hydropower development across its Himalayan region involving the construction of over 60 hydropower projects of various sizes on the headwaters of the western rivers, especially the Jhelum and Chenab. The Indian side has consistently emphasized that these projects flow from India's development needs and have been undertaken strictly in accordance with the provisions of the IWT.

Pakistan's major concern in this regard however, goes beyond the technical confines of the IWT. Rather, Pakistani fears stem from the potential of the Indian projects to interfere with the natural timing of flows from these rivers. The timing of the flows is a critical concern, since agriculture in the Pakistani plains is dependent on adequate water flow during the planting season.⁶ It was for this reason that India's capacity to manipulate the timing of flows was "hardwired into the treaty...by limiting the amount of live storage in each and every dam that India would construct on the two rivers."⁷ The limiting of live storage by India under the IWT thus provided some measure of protection to Pakistan against upstream manipulation flows.

The decision by the Neutral Expert in *Baglihar* neutralized this protection through a reinterpretation of the IWT and allowed India to draw water out of the dam at levels lower than those specified in the treaty. Some measure of relief for Pakistan was subsequently provided by the Permanent Court of Arbitration in *Kishanganga*, which did not view the Neutral Expert's decision in *Baglihar* as constituting a 'binding precedent', particularly because Professor Lafitte had not taken into consideration the unique political and strategic factors in his deliberations.

Although Pakistan's worst security fears were raised with Baglihar, the problem is much bigger. These are well-illustrated by

the writings of John Briscoe, a water engineer renowned globally for his expertise in this field:

If Baglihar was the only dam being built by India on the Chenab and Jhelum, this would be a limited problem. But following Baglihar is a veritable caravan of Indian projects - Kishenganga, Sawalkot, Pakuldul, Bursar, Dal Huste, Gyspa. The cumulative live storage will be large, giving India an unquestioned capacity to have major impact on the timing of flows into Pakistan. Using Baglihar as a reference, simple back-of-the-envelope calculations, suggest that once it has constructed all of the planned hydropower plants on the Chenab, India will have an ability to effect major damage on Pakistan.

First, there is the one-time effect of filling the new dams. If done during the wet season this would have little effect on Pakistan. But if done during the critical low-flow period, there would be a large one-time effect (as was the case when India filled Baglihar). Second, there is the permanent threat which would be a consequence of substantial cumulative live storage which could store about one month's worth of low-season flow on the Chenab. If, God forbid, India so chose, it could use this cumulative live storage to impose major reductions on water availability in Pakistan during the critical planting season.[Emphasis Added]

The substantial cumulative live storage which will occur from the large scale construction of Indian projects upstream therefore possesses the potential to choke water flow to Pakistan. However, security concerns are also issues of perception. Intentions are not a factor, but rather India's potential capability to choke Pakistan's water flow.

An argument could be made that the negotiators of the treaty could have foreseen the water security threat to Pakistan which could arise from India's permitted usage of the western rivers for domestic use, non-consumptive use, agricultural use and generation of hydro-electric power. However, it is submitted that a variety of factors over time have contributed towards exacerbating the threat to

the point where the entire IWT framework lies at the risk of being undermined.

2.3 Factors Aggravating the Water Security Threat

2.3.1 Water Scarcity and Climate Change

Hydrologists typically assess scarcity by looking at the population-water equation. According to the United Nations, an area qualifies as being ‘water stressed’ when annual water supplies drop below 1,700 m³ per person. When annual water supplies drop below 1,000 m³ per person, the population faces water scarcity, and below 500 cubic metres “absolute scarcity”.⁸

Based on this criterion, Pakistan is already close to being categorized as a ‘water scarce’ country, fast approaching the ‘absolute scarcity’ level. Its water per capita availability has dropped to 1,017 cubic meters per capita, a drastic reduction from 5,000 cubic meters in 1950.

According to the International Monetary Fund (IMF), Pakistan is already the third most water-stressed country in the world. It has the world’s fourth highest rate of water of use and its economy is the most water-intensive in the world, utilizing the highest amount of water per unit of GDP.⁹

Compounding the problem is the phenomenon of climate change; a concept not adequately understood nor addressed by the IWT.¹⁰ Today, the Himalayan glaciers supply the Indus with between 50-70 per cent of its water.¹¹ The rapid recession of these glaciers due to global warming has altered river flows and caused uncertainty in the availability of irrigation water, resulting in an overall reduction of water and the drying of riverbeds.¹² Although glacial melt in the short-term can act as a buffer against arid drought like conditions, in the long-term, the size of the glaciers will shrink and thus limit their ability to provide water to the Indus.¹³

Climate change is also disrupting the pattern of the monsoons which together with the Himalayan Glaciers feed and replenish river

flows, essential in the largely agrarian Pakistan. An increase in the number, duration, and severity of extreme events such as floods or droughts as well as higher temperatures will have profound effects on Pakistan's water resources. This is besides the already accelerated pollution of fresh water.

However, climate change alone cannot be blamed as the reason for Pakistan's water scarcity problem, which is also attributable to bad water management, population growth and development needs.¹⁴

These reasons notwithstanding, the severe water crisis being faced by Pakistan puts into perspective its acute sensitivity to any real or perceived threat to the western rivers guaranteed to it by the IWT.

2.3.2 Development Needs and Internal Dynamics

Pakistan and India have grown exponentially in terms of their population and economy since the 1950's. However, the economies of both countries remain heavily dependent on agriculture. Both countries are determined to achieve high economic growth in the coming decades, and India in particular, has set ambitious targets in this regard. The waters of the Indus Basin are the key factor in achieving this economic growth, both for the purposes of irrigation (the backbone of both economies) and electricity generation.

There is also an internal dynamic at play here, as both India and Pakistan are keen to address the grievances of the people of Kashmir and Gilgit-Baltistan. The people of Jammu and Kashmir in particular regard the IWT as an economic liability as it prevents them from exploiting its water resources without the prior approval of the Indus Commission. Meanwhile, Azad Jammu & Kashmir and Gilgit-Baltistan continue to be plagued by chronic energy shortages negatively affecting industrial production, investment and tourism.

In this context, it is not surprising that India has taken the political decision to undertake major hydropower development

across its Himalayan region, particularly on the headwaters of the Chenab and Jhelum.

According to John Briscoe, a big reason for why the IWT as an institutional mechanism “worked for so long was because for ‘decades India did very little to develop the hydro power resources on the Jhelum and the Chenab in Indian-held Kashmir.’”¹⁵ This situation, however, has changed ‘dramatically’ over the past decade as India attempts to harness, within the parameters of the IWT, the waters of the western rivers to meet its development needs and address the grievances of the Kashmiri people.

2.3.3 The Defense Security Dimension

Defense security considerations also play an important role in Pakistan’s concerns over Indian water projects in Kashmir. The Chenab canal network in Pakistan constitutes the first line of defense against a conventional Indian attack. Over the years, the potential defensive use of this network of canals, drains and artificial distributaries has been studied in meticulous detail by military planners and is considered to be of vital strategic importance. If these canals are dried up, they would afford easier passage for an infantry-armored assault by Indian forces.

Further, the construction of dams upstream on the western rivers by India also pose a threat of flash floods in Pakistan should these dams collapse or malfunction. It is therefore understandable that excessive Indian activity on the western rivers through upstream projects is viewed as a considerable defense security threat by the military establishment in Pakistan.

2.3.4 The Baglihar Incident

As discussed above, the Neutral Expert’s decision in *Baglihar* exposed Pakistan to upstream manipulation flows by rejecting its security concerns in favor of contemporary global best practices. These concerns were almost immediately realized when India chose to fill the Baglihar at the time when it would impose maximum harm on farmers downstream¹⁶ without providing accurate data on the

initial filing of the dam in violation of the Treaty. This action brought the inflow of the Chenab River to a historic low of 20,000 cusecs and reportedly resulted in an approximate loss of Rs. 5 billion in paddy crop production.¹⁷

Although the incident constituted a violation of the IWT, Pakistan chose to resolve the issue through Permanent Indus Water Commission in the spirit of cooperation and goodwill. Nevertheless, a negative precedent has been set, confirming the fears of many in Pakistan of New Delhi's 'mala fide intention'. The incident also served as fodder for hawkish elements to whip up public sentiment against proposed Indian construction on the western rivers.

2.4 IWT's Inadequacy to Address Pakistan's Security Concerns

In view of the foregoing, what are Pakistan's options for addressing its strategic concerns vis-à-vis Indian projects upstream on the western rivers? According to the Indian side, the Permanent Indus Commission, constituted under the treaty, is the best forum for resolving all such matters. However, it is the considered legal opinion of this paper that the number of dams or projects that India could or should construct on the western rivers is an issue that falls outside the scope of the IWT.

The inadequacy of the IWT as a mechanism to pacify Pakistan's security concerns is best illustrated by a hypothetical example.

Suppose the Government of Pakistan chooses to adopt the IWT framework in addressing its concerns over the proposed thirty storages under construction upstream of the western rivers.¹⁸ Although these storages may store water within the permissible quota of the upper riparian, Pakistan wishes to challenge them not on engineering grounds but rather on a security perception basis.

Assume that, as per the Indian version, the aforementioned concerns fall within the mandate of the Indus Water Commissioners. Pakistan would thus write a formal letter to the Indian Commissioner, conveying its concerns over the expansive Indian hydropower development on the headworks of the western rivers as

being disproportionate to the electricity and agriculture requirements of the upper riparian in that region. Pakistan would also highlight its fears of possible misuse of the said storages, providing India with excessive ability to accelerate, decelerate or block flow of the rivers, thus providing a strategic leverage in times of political tension or war.

The Indian Commissioner's most likely response would be to simply state that the storages were being constructed strictly in accordance with the IWT and that they will store the quantity that is permitted thereunder. The Indian response would also dismiss the issue of security and misuse as being extraneous to the treaty and therefore outside the jurisdiction of the Commissioner.

This is the kind of issue that cannot be handled under the framework of the IWT. The IWT is primarily concerned with engineering solutions and water management. It neither takes into consideration security threats nor does it establish a mechanism dealing with the possible misuse of engineering solutions¹⁹, whereby an unfair advantage is provided to the upper riparian by allowing it to gradually build storages over a period of time.

2.4.1 Technical Nature of the Treaty: Historical Basis

That the IWT is a technical treaty neither equipped nor intended to resolve political disputes of a strategic nature is firmly borne out by examining its historical basis.

In the original discussions on the treaty, the intended mechanism involved communications between the heads of state on any decision to construct storages via authorized representatives. The heads of state were then to initiate a political process before giving each other formal permission. However, it was subsequently decided that such a process might result in frequent deadlocks, undermining progress under the treaty, given the political sensitivities involved.

The proposal was therefore abandoned in favor of a Permanent Indus Commission (PIC) comprising a specialized Commissioner

from each country. The political process was therefore avoided as a deliberate choice by the negotiators and the sponsors of the treaty.

There were additional reasons for deliberately restricting the remit of the PIC to technical issues. Pakistan as the lower riparian, was understandably suspicious of the intentions of the upper riparian while entering into any binding arrangement with it. The unilateral termination of water supplies in April 1948, despite assurances of non-interference, had caused acute distress in West Punjab. “The sense of insecurity and vulnerability that this interruption caused in Pakistan...became a permanent part of the Pakistani psyche, and continues to influence thinking even today.”²⁰

It is in this context that the officials of the World Bank, negotiating the treaty, admitted that retaining ambiguity in the political aspect of the treaty was part of the negotiating strategy. This is well-reflected in the World Bank archives on the IWT negotiations:

“People like Eugene Black felt, as I do, that if you want to have a difficult negotiation avoid writing too much down. You may write down some basic facts like the flow of water of the rivers and things like that. But don’t write down, he wants this and he wants that and he’s willing to concede. I think you have to do it...without being too clear about everything.”²¹

The negotiations were therefore held in a tense atmosphere as illustrated from the following extract from the World Bank’s archives:

...despite the Bank’s efforts to communicate relevant material to both sides, the disputants remained sensitive to the merest rumor of being excluded. These suspicions led one Pakistani delegate to state that “he wanted to know if there were any secrets that he hadn’t heard about”...²²

These suspicions and doubts were not unfounded. The IWT negotiations were after all, overlapping with negotiations and debates in the United Nations and the Security Council on Kashmir.

The Indians at this point were gradually beginning to withdraw from their obligation to hold a plebiscite as per UNSC resolutions.²³

The Pakistani delegation was therefore nervous. If India could deflect a binding UNSC resolution and avoid fulfilling its obligation with regard to a plebiscite, then as an upper riparian, it was much more powerful and strategically positioned to create a water security nightmare for Pakistan.

Further, the legal impact of the IWT on the Kashmir issue loomed large on the minds of negotiators from both states. Since the Indus Water Basin partially overlaps with the disputed terrain of the State of Jammu and Kashmir, Pakistan was unsure whether India could, on the pretext of a disputed territory, exercise control over the water flows till such time as the dispute was resolved.

It was in this context that the Indian Prime Minister Nehru extended assurance to the Pakistani side that India had no intention of restricting water flow on the western rivers, specifically mentioning Kashmir:

“I might make one point clear. The Canal Waters dispute between India and Pakistan has nothing to do with the Kashmir issue; it started with and has been confined to the irrigation systems of East and West Punjab. So far as the rivers flowing into Pakistan from Kashmir are concerned, there is no question of reducing the quantity of water which they carry into Pakistan by diversion or any other device.”²⁴

Sensitivities over the legal impact on the Kashmir issue are perhaps the reason why the IWT does not contain a clear enabling provision identifying sites and venues of future storages by the upper riparian. The treaty could have contained a flexible annexure mechanism, under which the upper riparian could formally intimate a construction decision.

However, the pending Kashmir issue likely precluded the inclusion of such an annexure within the treaty. If Pakistan were to sign on to all future storage facilities, identified and listed down in

any additional annexure, the Indian claim over the disputed territory of Jammu and Kashmir may have been supported and endorsed. Pakistan could therefore not endorse, through a sovereign act, any construction of a storage site by India which would have strengthened its claim over the disputed Kashmir territory.

One can therefore speculate that the Kashmir factor resulted in the World Bank adopting a water-flow/cumulative water storage approach as opposed to an enlistment-of-sites approach. The first letter of the World Bank President addressed to Prime Minister Liaquat Ali Khan talked about keeping the political issues separate from water development. Pakistan's approval on the storage sites that were in disputed Kashmir would undoubtedly have made this issue political.

According to water specialist Dr. Undala Alam:

“At the start of the mediations, when the World Bank was offering its good offices, the Prime Ministers of both India and Pakistan were categorical in pointing out the limitations of the proposed talks. Discussions pertaining to the Indus Basin would have no bearing on the Kashmir dispute, nor would they discuss possible solutions to that tenacious dispute. Naturally, this conferred upon the subsequent Indus Basin discussions a very narrow remit.”²⁵

It is this narrow remit that limited the jurisdiction of the Indus Water Commission to only technical issues and providing engineering solutions.

Therefore, the Bank and its drafting team formulated a different approach which involved limits on water flow/cumulative water storage as opposed to focusing on the identification of future sites.

This is well-illustrated by the letter to both states by Eugene Black, the World Bank President, which made it clear that any potential treaty would only focus on the technical aspects of water management as opposed to political issues:

“...I shall base my suggestions on the essential principles of Mr. Lilienthal’s proposal which are, as I understand them, the following: ... (c) The problem of development and use of the Indus basin water resources should be solved on a functional and not a political plane, without relation to past negotiations and past claims and independently of political issues.”²⁶

By focusing on the technical aspects of water management, it is clear that the IWT restricts the mandate and jurisdiction of the PIC to technical issues and providing engineering solutions. However, in abandoning this political approach, one should not assume that a political license was granted to India to build endless storages disproportionate to its needs, even if such storages fall within the limits of the cumulative storage of water granted to it.

What is apparent however is that the PIC may not be appropriate forum for raising Pakistan strategic water security concerns over Indian projects upstream. Not only is the Commission not equipped to deal with questions of a political nature, it also does not have the mandate to resolve such issues since these fall outside the very scope of the treaty that is the legal source of the PIC.

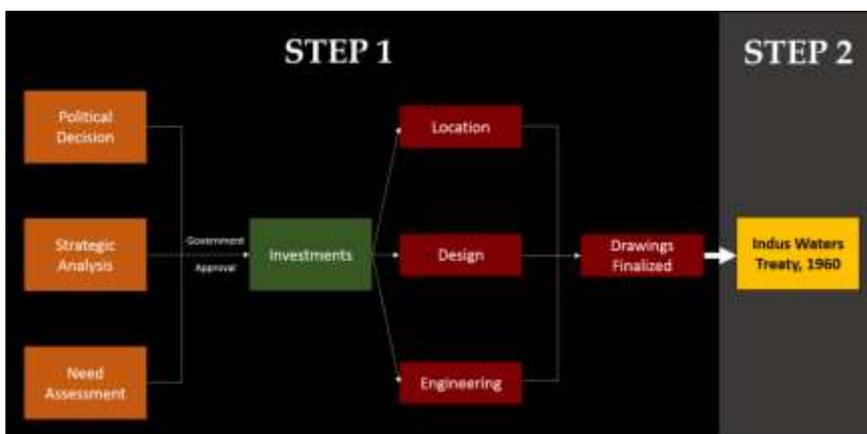
2.4.2 Technical Nature of the Treaty: Indian Projects Can Only Be Challenged on an Engineering Basis

In order to comprehend the essentially technical nature of the IWT, it is imperative to realize that the Indian government’s decision to construct a dam or a hydroelectric project upstream on any of the Western rivers is taken outside the IWT regime and is based wholly on India’s assessment of its energy needs and strategic interests.²⁷

This decision consists of two stages. The first stage is internal, whereby the upper riparian takes the political decision to construct a site. Following a green signal from the government, detailed decisions are made relating to location of the project, its design, engineering etc. eventually leading to the finalization of the drawings. During this entire process, no interaction takes place with

the lower riparian nor is any input received from it. The Pakistani side therefore remains completely out of the loop.

The lower riparian is only informed about the proposed project in stage two. Thus, having already taken the decision about the site and its feasibility following an intensive internal process, India at this point merely intimates its decision to Pakistan vis-à-vis the Indus Water Commission. The process is illustrated in the table below.



India does not submit to Pakistan the reasons behind any such decision through its Indus Waters commissioner. It merely submits a blueprint of the dam or project as stipulated by the IWT and technical details as mentioned in the annexure to the IWT. Crucially, within the treaty’s framework, Pakistan may only object to the technical specifications of the submitted blueprint, not question the political decision. Thus, as long as India’s blueprints conform to the IWT’s technical specifications, it can potentially undertake any number of projects.

This viewpoint was effectively endorsed in paragraph 409 of the Permanent Court of Arbitration’s (PCA) partial award in *Kishenganga* which states: “It would make little sense, and cannot have been the parties’ intention, to read the treaty as permitting new run-of-the-river plants to be designed and built in a certain manner, but then prohibiting the operation of such a plant in the very manner for which it was designed.”²⁸

Simply put, the PCA concedes that as long as India's blueprint conforms to the IWT, it cannot disallow the construction of a dam or a project. This is so because of the lack of any provision in the IWT authorizing India specifically to build a certain number of dams or undertake a certain number of projects. As discussed above, the IWT adopts a water-flow/cumulative water storage approach as opposed to an enlistment-of-sites approach vis-à-vis the western rivers.

In Annexure D for instance, there is a list of plants that India will construct or complete but no provision regarding the number of future projects undertaken by India. In the absence of any IWT provision authorizing or limiting the number of dams, the PCA had no choice but to permit India to go ahead with the Kishenganga project subject to the treaty's technical requirements.

2.5 Beyond the IWT²⁹

2.5.1 Strategic Concerns May be Raised Outside the IWT Framework

Since the IWT does not bind Pakistan to presenting its objections about the precise number of dams or projects that India might construct in any prescribed manner and as this issue clearly lies outside the IWT's ambit, it must be addressed bilaterally rather than abortively through the Treaty framework.

The futility of addressing these strategic concerns within the framework of the IWT was seen in *Kishenganga*. Although Pakistan engaged the services of lawyers of international repute such as James Crawford QC who along with other members of the legal team tried hard to couch the request for relief in the context of legality of the project itself, they ultimately failed to persuade the PCA.

Although Pakistan was able to obtain certain technical advantages from the award, in the public's perception the essential relief — banning the project — could not materialize.

It is time for Pakistan to realize that the IWT does not provide any framework that caters to its strategic concerns that proliferation in the construction of dams or projects upstream on Western rivers might be used against it by India as strategic assets in times of conflict.

Of course, Pakistan should persist with the IWT. This paper does not subscribe to the idea of scrapping the treaty as it has been an enduring confidence-building measure and has even withstood wars. However, Pakistan's policymakers must place and interpret the IWT within its proper legal context. As said earlier, the Treaty was never intended to scrutinize the Indian government's political decision of undertaking projects on the Western rivers. This aspect was outside the scope of the IWT.

Hence, the Treaty does not list the precise number of upstream dams or projects that the two countries might have agreed upon in any of its otherwise detailed annexes. It neither identifies any possible sites for upstream dams or projects nor provides any timeline for undertaking their construction.

Clearly therefore, the issue of the exact number of upstream dams or projects that India could or should construct falls outside the scope of the IWT and ought to be addressed outside its framework.

Thus, if Pakistan wants to effectively challenge India over the sheer number of upstream dams or projects being constructed as opposed to their technical design, it must not invoke the Treaty's dispute settlement mechanism, but rather bilaterally take up the matter with India or with any other international forum. The PCA's award in *Kishenganga* affirms this legal position.

2.5.2 Addressing Climate-based Water Scarcity Concerns³⁰

There is persistent tension between the two neighbors over India's alleged curtailment of the waters flowing from Indian-administered Kashmir. Some analysts have termed this as a clear violation of the IWT. The media in Pakistan and the general public,

too, appear convinced that India is withholding the waters in violation of its Treaty obligations.

On the other hand, the Indian perception is that Pakistan's allegations are unfair since the water levels are reducing over time mostly due to climate-based water scarcity. From a legal point of view, this argument is interesting as it actually raises the issue of jurisdiction and the scope of the IWT itself. The Treaty does not deal directly with the issue of water scarcity. In fact, when the Treaty was being negotiated, a future possibility of water scarcity was not a priority or a leading concern for the negotiators.

Hence, we find that there is no provision *per se* that provides a mechanism to both the countries if climate-based water scarcity occurs. The critical provisions of the IWT simply say that India and Pakistan were obliged to "let flow" the river waters without interfering.

Despite speculations by the Pakistani side there is no specific evidence brought forth so far that India is actually obstructing the flow or is diverting the waters. If the Indian version is correct then the issue cannot be addressed within the framework of the IWT and, in that case, Pakistan is pursuing a remedy in the wrong direction.

The question remains as to who determines whether the reduced amount of water flowing into the rivers of Pakistan from the Indian side is because of obstructions or on account of climatic water scarcity. For that, both countries would need to agree to an independent and a separate study by a neutral body such as the World Bank. The determination by such a study would make matters clearer for Pakistani and Indian policymakers who could then follow a bilateral remedial course of action.

The argument is also advanced that even if the water flowing into Pakistani rivers is less due to genuine climatic water scarcity, India cannot escape responsibility as a state to maintain and manage the water resources that it exercises control over. India's responsibility comes under the general framework of international

law that calls on the upper riparian state to take the necessary measures to minimize water scarcity.

In Europe and elsewhere, water scarcity has promoted trans-boundary water cooperation instead of inciting war over this issue. The UN Convention on Uses of International Water Courses 1997 obliges states to conserve, manage and protect international water courses. Pakistan and India are not party to the said Convention, but the latter nevertheless offers a comprehensive framework for trans-boundary water cooperation.

Likewise, the 1992 Convention on Trans-Boundary Water Courses primarily meant for European countries offers another legislative model for India and Pakistan for bilateral cooperation on the issue of handling water scarcity. The 1997 Convention is widely viewed as a codification of customary international law with regard to obligations for equitable and legal utilization, the prevention of significant harm and prior notification of planned measures.

At the moment, India and Pakistan lack a legal medium or forum through which the Indian version of 'genuine water scarcity' could be scrutinized and if found to be correct, handled and responded to properly through bilateral action.

If this issue is not handled technically without a legal mechanism, then it has the potential to further aggravate tensions between India and Pakistan as it will be clubbed with the Kashmir dispute. Further, a reduced water flow could be perceived as India's ploy to put additional pressure on Pakistan and, in that event, the response would be equally unmeasured and misdirected.

Therefore, whether India is actually blocking the water or the decrease in water flow is due to scarcity and climatic change, needs objective and transparent determination by experts. This determination of the real reason should be agreed to beforehand through a bilateral agreement confined to fact-finding. If the finding is that the reduced flow of water is due to obstructions, then Pakistan could take action under the provisions of the IWT immediately.

On the other hand, if it is determined that there is genuine water scarcity, then the issue is outside the jurisdiction of the treaty and needs to be sorted out by both states on a bilateral basis. India, in that case, should undertake its obligations under international law for proper water conservation and management and share the details with Pakistan through a mutually agreed mechanism. This point may be considered in upcoming Comprehensive Bilateral Dialogue as an urgent item.

SECTION - II

3. Reappraisal of the Eastern Rivers in Light of Contemporary International Law

The eastern rivers under the IWT comprise the Ravi, Sutlej and Beas rivers. Under the framework of the IWT, the waters of these rivers are available for the “unrestricted use of India”³¹ with certain limited rights also granted to Pakistan.

The orthodox understanding therefore is that the IWT grants India complete and unrestricted usage of the eastern rivers which does not require safeguarding Pakistan’s rights vis-à-vis these rivers. However, it must be borne in mind that the IWT was formulated at a time when international environmental law was in its initial stages of development. The question to consider today is whether international environmental law today has evolved to the point where a reappraisal is required of what India can or cannot do vis-à-vis the eastern rivers.

3.1 Major Developments in International Environmental Law Since the IWT

Much of contemporary international law relating to trans-boundary waters has developed after the formulation of the IWT. The Helsinki Rules on the Uses of the Waters of International Rivers were adopted in 1966 by the International Law Association and provided an international guideline regulating how rivers and their connected ground waters that cross national boundaries may be used. These Rules were considered groundbreaking at the time, and lead to the adoption of the UN Convention on the Law of Non-Navigational Uses of International Watercourses in 1997 (the 1997 UN Convention).

This was followed by the Ramsar Convention (formally known as the Convention on Wetlands of International Importance, especially as Waterfowl Habitat) in 1971. The Convention on the Protection and Use of Trans-boundary Watercourses and International Lakes (known simply as the Water Convention) was

adopted in 1992 and came into force in 1997. Originally, membership to the Water Convention was limited to members of the United Nations Economic Commission for Europe (UNECE). However, a 2003 amendment, which came into force in 2013, allows for nations outside the UNECE Countries to join the legal framework of the Convention.

Recently, the International Law Association adopted the Berlin Rules on Water Resources, 2004 which supersedes the Helsinki Rules of 1966 and summarizes customary international law applicable today to freshwater resources.

Multilateral and bilateral treaties made in the decades following the Indus Waters Treaty have demonstrated that the issues of sharing of trans-boundary waters are dynamic and are constantly shifting and being upgraded. They also reflect an understanding of the importance of preservation of the environment and the ecosystem surrounding the watercourses.

3.2 Contemporary International Law and its Application to the Indus Waters

Many of the responsibilities that states owe each other vis-à-vis international watercourses were earlier set out by the Helsinki Rules 1966 and subsequently codified by the 1997 UN Convention. Article 2 of the Convention states:

- (1) The Parties shall take all appropriate measures to *prevent, control and reduce any trans-boundary impact.*
- (2) The Parties shall, in particular, take all appropriate measures:
 - a. To prevent control and reduce *pollution of waters* causing or likely to cause trans-boundary impact;
 - b. To ensure that trans-boundary waters are *used with the aim of ecologically sound and rational water management, conservation of water resources and environmental protection;*

- c. To ensure that trans-boundary waters are *used in a reasonable and equitable way*...;
- d. To ensure *conservation* and, where necessary, *restoration* of ecosystems.³²

The Ramsar Convention discusses the need to ensure conservation and restoration, if need be, of the ecosystems formed by the trans-boundary watercourses. Evolving beyond the Convention's initial focus on wetlands, the Eighth Conference of the Parties to the Ramsar Convention, held in 2002, resulted in a set of guidelines which, while non-binding in nature, encouraged Parties to introduce measures to manage environmental flows.

Under international law, the 1997 UN Convention is regarded as the cornerstone for trans-boundary water usage. While neither India nor Pakistan has ratified the UN Convention, allowing for its direct application to the Indus river system, it nonetheless represents the contemporary understanding of transnational water sharing under international law. Thus, while – as non-signatories – the two countries have no legal obligations thereunder, the UN Convention exemplifies the international legal consensus on transnational water-sharing arrangements.

Under the UN Convention, states are required to protect and preserve the ecosystems of international watercourses, and to cooperate in the regulation of shared watercourses. These obligations require riparian states to work together on hydraulic initiatives – such as dams or hydroelectric power generation – in order to minimize the impact these projects would have on the ecology of the entire river system.

In addition to these seminal legal instruments, there exists a wealth of international agreements which further flesh out the substance of international riparian law. While most of these instruments are regional in their application, they nonetheless represent a growing consensus in international law that states –

though sovereign within their own territories – have environmental obligations *vis-à-vis* their neighbors. Much of the substance of these obligations also finds its way into the corpus of customary international law, a body of laws which is binding upon all states.

The *Trail Smelter*³³ arbitration between Canada and USA set a new benchmark with regards neighboring states, such that any usage of a resource in one state must not lead to any harm in the neighboring state. This was later codified in the Declaration of the United Nations Conference on the Human Environment (also known as the Stockholm Declaration), 1972, Principle 21 of which reads:

“States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.”

The evolving rules of international law may be utilized in interpreting the IWT. This is supported by the Vienna Convention on the Law of Treaties, specifically Article 31, which states:

- 1) A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose ...

- 3) There shall be taken into account, together with the context:
...

- (c) Any relevant rules of international law applicable in the relations between the parties.

If this rule were to be applied the waters of the Indus, an argument could be made that India is not allowed, under international law, to use the waters of the eastern rivers in such a manner that harm may be caused within the jurisdiction of Pakistan.

The IWT itself contains provisions for additional resources that may be used when interpreting the Treaty and customary international law³⁴, which is a stated source.

Following the *Trail* arbitration, customary international law was built around the issues of the Danube River, in terms of the *Gabcikovo-Nagymaros* arbitration³⁵ between Hungary and Slovakia. The judgment states:

“Owing to new scientific insights and to a growing awareness of the risks for mankind—for present and future generations—of pursuit of such interventions at an unconsidered and unabated pace, new norms and standards have been developed, set forth in a great number of instruments during the last two decades ... This need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development ... For the purposes of the present case, this means that the Parties together should look afresh at the effects on the environment of the operation of the Gabcikovo power plant. In particular [,] they must find a satisfactory solution for the volume of water to be released into the old bed of the Danube and into the side-arms on both sides of the river.”³⁶

This arbitration has been cited in the *Kishenganga* partial award, but only with reference to the western rivers; the reasoning, however, is still equally valid *vis-à-vis* the eastern rivers. The eastern rivers can no longer be said to be under India’s unconditional control – instead, the international legal consensus is that India may not do anything the consequences of which would cause harm to the ecosystem and environment of Pakistan.

While there is no concept of a minimal water flow as under the Indus Waters Treaty, according to the *Gabcikovo* arbitration, it would nonetheless seem that requiring a minimal flow to be sustained at all times is a reasonable assertion that needs to be complied with. Furthermore, the release of excess water which could cause grave damage to property and livelihoods in Pakistan is a direct violation of the *Trail* judgment and the Stockholm Declaration, an important tenet of international law, and is, therefore, untenable.

Further, while the PCA noted that it would not be appropriate to assume the role of policymaker in determining the balance between ‘acceptable environmental change’ and other priorities, the Court nonetheless was unequivocal in recognizing the significance of an ‘environmental flow’ in the application of the Treaty.³⁷ The amount of this flow was not codified in the award as, according to the Court, “[it] is not necessarily a fixed minimum, affecting only the dry season, but is rather the flow regime anticipated to maintain environmental change resulting from infrastructure and development within the range considered acceptable under the circumstances of the river in question...”³⁸ Thus, while the environmental flow rate of rivers under the Treaty may change over the course of a year due to seasonal variances in the overall river flow, the overall environmental flow of the rivers under the Treaty was conceived as being the minimum amount of flow necessary to maintain the ecology of the river systems.

It is particularly significant to note that the Court, in its award, did not specify which river system its discussion of environmental flows touched upon. While a more limited reading of the award would suggest that the Court was focusing on the western rivers, under contemporary international law and modern-day understandings of environmental sciences a far stronger argument can be made in favor of the Court’s conception of an environmental flow being applicable to the eastern rivers as well.

While a more detailed discussion of the relevant international law is outside the scope of this paper, it is pertinent to note that – under contemporary conceptions of environmental science, it is untenable for India to claim that it has unfettered and unqualified use of the eastern rivers. Instead, India must exercise restraint and caution in its use of the rivers – both eastern as well as western – in order to prevent harm being caused to the ecology of the entire river system. Given that, in riparian relationships, no one state can realistically monopolize control over a given river system, a reading of the award – and its emphasis on environmental flows – is far more defensible.

3.3 Recommendations

3.3.1 Pakistan and India

It is imperative that Pakistan and India include updates in international law, with an emphasis on contemporary customary international law, into their understanding and interpretation of the IWT, as well as in their dealings with each other. Modern understandings of the environment and ecological sciences did not exist at the time of the Treaty's inception, and for either of the two states to hold on to a dim and outdated understanding of the law and of science as it existed fifty years ago is untenable.

According to the PCA, “the Court sees no reason to remain wedded to past practices...”³⁹ and there is no reason – nor benefit – for either state to do the same. If the IWT is to remain the primary text on trans-boundary waters between Pakistan and India, there is a pressing need to ensure that it does not become obsolete in keeping up with both recent developments in the law and technology, and recent developments “on the ground” in terms of diplomatic relations between the two states.

Under the Treaty, both states are obliged to share data on river flows to aid each other in preventing floods and to be better prepared for them. There is a need to make the lines of communication stronger and devoid of political influence, and consequently to build infrastructure to handle information sharing more efficiently. Indeed, *vis-à-vis* its determination on environmental flows the Court noted that were “the difficulties of cooperation... not present, the appropriate environmental flow could well involve a regime of variable releases...”⁴⁰

Furthermore, as the office of the Permanent Indus Commission is equipped to only handle the technical and engineering aspect of the Treaty, there is a need for bilateral communication on a political and legal scale to ensure that there is understanding between the parties that water issues will soon become dire. Thus, there is a need for cooperation both as neighbors and as states acting as riparian to each other.

Environmental elements need to be accounted for as well as the ecological impact of the river flows. India must act with a spirit of camaraderie and have no *malafide* intentions to harm or disrupt the life along the southern banks of the rivers that originate in its territory. It is now understood that absolute sovereignty in terms of trans-boundary watercourses only acts as a barrier to development and good relations, and India must be cognizant of that fact.

Both countries also need to be cognizant of their obligations under the Sustainable Development Goals (SDGs), adopted at the historic UN Summit in 2015, which officially came into force in January 2016. The SDGs build upon the success of the Millennium Development Goals (MDGs) and call for all countries to act and take ownership in establishing national frameworks for the achievement of the 17 Goals set out in the 2030 Agenda for Sustainable Development.

As the SDGs form a key component of national policy for all UN member states, Pakistan and India, under Goal No. 15, have an obligation to conserve and restore the use of terrestrial ecosystems by 2020. Considering the unprecedented rate at which land degradation is occurring, there is an urgent need for Pakistan and India to ensure protection of biodiversity through their distinct national policies, particularly water-related policies.

While India has historically acted with impunity *vis-à-vis* the eastern rivers, it is now becoming apparent – within the context of contemporary international law and environmental science – that this *modus operandi* is unsustainable. Though India has, under the Treaty, the right to use of the eastern rivers, this right is not an unqualified one, but instead, must be exercised in a manner sensitive to Pakistan's ecological and geopolitical contexts. As the upper riparian state there exists on India the obligation to act in a responsible fashion *vis-à-vis* not only the western rivers, but the eastern rivers as well.

It is vital to understand, however, that repealing the Treaty or revisiting its drafting process will do no good to either side. Not only has the Treaty served as an able mechanism of building trust

between the two states and has lasted for more than half a century to prove it, it also provides a solid basis and framework which needs to only be revised or, more aptly, updated to meet the updated requirements and needs of the two states. Involving neutral experts or taking the matter to arbitration is both lengthy and extremely costly. The same amount of time, effort and money can be spent in a manner far more efficacious if both parties were to consent to discussions bilaterally on the matter with an aim of mutual benefit.

3.3.2 Pakistan

Pakistan must better prepare itself for the floods, which are now seasonal in nature. It needs to equip its infrastructural capability to handle these disasters by increasing its catchment areas, creating storages that can adequately deal with the increased influx of water and to build better bunds and barriers to prevent flooding. It is no longer justifiable on the part of the Government of Pakistan to show surprise and blame “unforeseen circumstances”. Flood preparedness must not be avoided, but instead should become a regular part of the Government’s yearly business.

Pakistan must also look into riverside habitations and facilitate those who cannot afford any other mode or location of housing by providing them with safe shelters that are immune to changes or disturbances in the environment. While there should not be a need to do this, Pakistan needs to play its part as a responsible state to aid its people from what has been an annual disaster waiting to happen. Partnerships with states such as the Netherlands and Denmark, who have survived below sea level for centuries, should be fostered to obtain technical expertise on the various techniques adopted by these countries to avoid flooding.

After the 18th Amendment, the aspect of flood control has been devolved to the provinces. However, the provincial governments as yet do not have the capacity – in terms of resources, technology and personnel - to deal with issues that were previously dealt with by the Federation. The provinces must take responsibility for flood preparedness, or as provided for in the Constitution⁴¹, entrust this responsibility to the Federation.

Further, Pakistan must ensure that its own actions *vis-à-vis* the Indus river system is consistent with international law and ecological sciences. As per the Court, when issuing its final award: “[m]eaningful development in this area need not be at odds with careful consideration of environmental effects.”⁴² An obligation also lies on Pakistan to conduct the necessary studies in order to determine not only the effects of India’s usage of the Indus river system [both on the eastern and western rivers], but also the effects of its own hydraulic projects.

In making a determination based on the ‘environmental flow’ of the river, the PCA in *Kishenganga* provided Pakistan with a potent legal tool to wield in its dealings *vis-à-vis* India. Following the determination of the Neutral Expert in *Baglihar*, India capitalized on the use of the term ‘state of the art’ in order to reinterpret the Treaty in a manner more consistent with its own domestic needs. Similarly, Pakistan can place reliance upon the PCA’s use of the term ‘environmental flow’ in order to reexamine – and reinterpret – the Treaty in a manner which not only safeguards Pakistan’s own interests, but the ecology of the Indus river system as a whole.

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