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The Politics of Water in Indo-Pak Relations: A Critical Analysis of the Indus Waters Treaty Amidst Geopolitical and Climatic Shifts

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Abstract

Since 1960, the Indus Waters Treaty has provided the principal legal and political framework governing water relations between India and Pakistan. For over six decades, it has functioned as a stabilising arrangement that helped prevent open conflict over shared river systems. This article critically examines the treaty's dual role as both a mechanism of cooperation and a framework under increasing strain. It argues that contemporary pressures are steadily undermining the treaty's foundational principles. These pressures include the strategic deployment of treaty procedures as a form of legal leverage, persistent socio-economic grievances among riparian populations in India, and the accelerating effects of climate change on the Indus basin's hydrology. Drawing on existing scholarship, legal analyses of disputes such as Baglihar, Kishenganga, and Ratle, and field data from Indian riparian states, the article contends that the treaty's rigid approach to river division is ill-suited to present-day realities. India's recent suspension of the treaty signals a shift from conflict management toward coercive hydro-politics. Without a fundamental rethinking of the treaty toward a more adaptive, basin-wide, and environmentally responsive framework, the Indus risks becoming a source of renewed conflict rather than cooperation.

Keywords: Indus Water Treaty, India, Pakistan, Hydro-politics, Water-wars, Dam etc.

Introduction

The Indus as a Geopolitical Lifeline

The Partition of British India in 1947 fundamentally reshaped the political geography of South Asia, but it also disrupted a deeply interconnected ecological system. The Indus river basin, which had long functioned as a single hydrological unit, was divided by new national boundaries drawn primarily along religious lines. The Radcliffe Line paid limited attention to the integrated network of rivers, canals, and irrigation works that supported one of the largest agricultural systems in the world. As a result, the headworks of several major rivers remained in India, while large downstream agricultural areas fell within the territory of the newly created state of Pakistan. This imbalance immediately placed water at the centre of relations between the two countries, transforming a shared natural resource into a strategic and political concern.

Tensions surfaced soon after independence. In April 1948,

following the expiry of a temporary Standstill Agreement, India briefly halted water supplies to canals flowing into Pakistan^[1]. This episode reinforced Pakistan's vulnerability as a lower riparian state and heightened fears regarding India's ability to influence its agricultural and economic stability. Although the Inter-Dominion Accord of May 1948 restored water flows in exchange for financial compensation, it offered only a provisional solution. Throughout the 1950s, disagreements over the Indus system remained unresolved, with both states recognising that long-term water security was closely tied to national development and political autonomy.

It was against this background that the Indus Waters Treaty was concluded in 1960, following extensive negotiations facilitated by the World Bank^[2]. The treaty is widely regarded as a significant diplomatic achievement, having endured periods of intense hostility, including multiple wars and sustained political tensions^[3]. Its success lay in its clear

allocation of rivers and its effort to remove day-to-day water management from broader political disputes. However, the very rigidity that enabled the treaty to function for decades now limits its capacity to respond to emerging challenges. Legal mechanisms within the treaty are increasingly used in strategic ways, climate change is altering river flows and glacial systems, and the agreement remains largely detached from the socio-economic and environmental concerns of communities within the basin.

Recent developments, including India's suspension of the treaty following a terrorist attack in 2025, indicate a renewed linkage between water and national security [4]. This shift raises serious questions about the treaty's future and suggests that, without reform, the Indus basin may become a site of heightened hydro-political conflict rather than sustained cooperation.

The Architecture of a Tenuous Peace: Formation and Function of the Indus Waters Treaty

The origins of the Indus Waters Treaty lie in the breakdown of direct negotiations between India and Pakistan and the shared recognition that external mediation was necessary to resolve the impasse. In 1951, David Lilienthal, former chairman of the Tennessee Valley Authority, proposed a framework under which the Indus river system would be jointly managed by the two countries [5], with financial and technical support from the World Bank. This proposal attracted the attention of Eugene Black, then President of the World Bank, who formally offered the Bank's good offices as a mediator in 1952 [6]. What followed was a prolonged and technically complex negotiation process that lasted nearly nine years and involved engineers, diplomats, and international officials.

Early efforts focused on integrated basin management, but these proposals were rejected by both sides, largely due to concerns over sovereignty and control. Various water-sharing formulas also failed to gain acceptance. Ultimately, the only politically viable solution was the physical division of the rivers themselves.

The Indus Waters Treaty was signed on 19 September 1960 in Karachi by Indian Prime Minister Jawaharlal Nehru and Pakistani President Ayub Khan [7]. Its central feature was the allocation of the three eastern rivers, the Ravi, Beas, and Sutlej, to India, and the three western rivers, the Indus, Jhelum, and Chenab, to Pakistan. This arrangement granted Pakistan control over roughly 80 per cent of the basin's total water flow, while India retained about 20 percent [8]. India was nevertheless permitted limited use of the western rivers for non-consumptive purposes, including domestic needs, navigation, and run-of-the-river hydroelectric generation, subject to detailed technical conditions.

To ease Pakistan's transition away from the eastern rivers, the treaty provided for a ten-year adjustment period and substantial financial assistance. This was coordinated by the World Bank, to construct replacement infrastructure such as the Mangla and Tarbela dams [9].

The treaty was designed primarily to prevent conflict rather than to promote joint management. By allocating entire rivers to each country, it reduced the need for constant coordination and insulated water management from political crises. The Permanent Indus Commission was created to maintain routine communication and address technical

issues. A structured dispute resolution mechanism further supported this framework. While this design proved effective in avoiding water-related conflict, its rigidity now limits its ability to respond to environmental change, climate variability, and basin-wide sustainability challenges.

A History of Contention: Major Disputes and Strategic "Lawfare"

Despite its reputation for durability, the IWT has been repeatedly tested by disagreements, primarily stemming from India's development of hydroelectric projects on the Western Rivers. Pakistan has consistently raised objections to these projects, transforming the treaty's dispute resolution mechanisms into an arena for strategic competition. This pattern of behavior can be understood as a form of "lawfare"—the use of legal and procedural instruments to achieve strategic objectives, in this case, to impose costs, create delays, and exert political pressure on India's infrastructure development in the sensitive region of Jammu and Kashmir. The evolution of these disputes reveals a gradual erosion of the treaty's cooperative spirit and the breakdown of its conflict-resolution framework.

The Baglihar Dam: A Precedent-Setting Verdict

The first major test of the IWT's dispute mechanism came with the Baglihar Dam, a 450 MW run-of-the-river project on the Chenab River [10]. In 2005, Pakistan formally requested the World Bank to appoint a Neutral Expert, arguing that the dam's design violated the treaty's technical specifications. Pakistan's key objections centered on the use of a gated spillway, which it contended was unnecessary, and what it claimed was excessive pondage (water storage capacity) and an improperly low height for the power intakes.

The case was referred to Professor Raymond Lafitte, a Swiss civil engineer, who delivered his final and binding decision in February 2007 [11]. The verdict was a pivotal moment in the treaty's history. While it mandated some technical modifications—a slight reduction in the dam's height and a decrease in pondage from India's proposed 37.5 MCM to 32.56 MCM—it fundamentally upheld the overall design. Most significantly, Lafitte's determination established a crucial interpretive principle: the treaty must be read in light of contemporary scientific knowledge and "state of the art" engineering practices, not merely the technology available in 1960. He argued that treaty terms like "sound and economical design" and "customary practice" required the use of the latest technology to ensure the safety and longevity of such projects, particularly in managing the heavy sediment load of Himalayan rivers. This ruling was a major victory for India, as it validated its right to employ modern dam designs to more effectively utilize the waters of the Western Rivers for power generation. The Baglihar verdict set a powerful precedent, signaling that India could pursue more efficient and technologically advanced projects, thereby shifting the interpretive ground of the treaty and emboldening New Delhi in subsequent disputes.

The Kishenganga Project: Introducing Environmental Flows

The dispute over the 330 MW Kishenganga Hydroelectric

Project (KHEP) on a tributary of the Jhelum River introduced a new dimension to the conflict [12]. India's design involved diverting water from the Kishenganga (known as the Neelum in Pakistan) through a tunnel to a powerhouse before returning it to the Jhelum basin. Pakistan argued that this inter-tributary diversion was a violation of the IWT and would severely impact its own downstream Neelum-Jhelum hydroelectric project.

This time, the disagreement was elevated to a Court of Arbitration at The Hague. In its 2013 award, the Court again ruled in India's favor on the central issue, upholding its right to divert water for a run-of-the-river project. However, the Court also broke new ground by ruling that the treaty and customary international law obligated India to maintain a minimum "environmental flow" of 9 cubic meters per second (m³/s) in the riverbed downstream of the dam at all times. This was the first time that ecological considerations were formally integrated into the IWT framework. While confirming India's developmental rights, the verdict introduced a new constraint and acknowledged the treaty's silence on environmental sustainability, a theme that would become increasingly critical in the years to follow.

The Ratle Project: Breakdown of the Mechanism

The ongoing dispute over the 850 MW Ratle Hydroelectric Plant, also on the Chenab, illustrates the complete

breakdown of the IWT's dispute resolution process. Pakistan again raised technical objections to the project's design, related to pondage, spillways, and sediment outlets. However, the conflict became procedural. In 2016, Pakistan sought the establishment of a Court of Arbitration, while India argued the issues were technical and should be addressed by a Neutral Expert.

Faced with competing requests for two different forums, the World Bank initially paused the process in an attempt to encourage a bilateral resolution. When this failed, it ultimately decided in 2022 to appoint both a Neutral Expert and a chairman for the Court of Arbitration, allowing two parallel processes to proceed. India has consistently rejected the legitimacy of the Court of Arbitration, calling its constitution a "serious breach" of the treaty, and has boycotted its proceedings. Following its suspension of the IWT in April 2025, India has moved forward with the project's construction, asserting that it is no longer bound by the treaty's obligations and that no international body has jurisdiction over its sovereign actions. The Ratle dispute thus marks the final stage in the erosion of the IWT's framework, moving from technical adjudication (Baglihar) to the introduction of new principles (Kishenganga), and finally to a complete procedural stalemate and political defiance.

Table 1: Summary of Major Disputes under the Indus Waters Treaty

Project Name	River System	Pakistan's Core Objection(s)	Dispute Resolution Forum	Key Outcome and Significance
Baglihar Dam	Chenab (Western River)	Design violated IWT: use of gated spillways, excessive pondage capacity, and height of power intakes.	Neutral Expert (Prof. Raymond Lafitte)	2007: Largely favored India's design. Crucially established that the IWT should be interpreted using modern ("state of the art") engineering standards, not just those of 1960. Set a major precedent for future projects.
Kishenganga HEP	Jhelum (Western River)	Inter-tributary diversion of water from the Kishenganga/Neelum to the Jhelum basin was a violation of the treaty's spirit and would harm its downstream Neelum-Jhelum project.	Court of Arbitration (Permanent Court of Arbitration, The Hague)	2013: Upheld India's right to divert water for a run-of-the-river project. However, it mandated a minimum "environmental flow" to be maintained downstream, introducing ecological considerations into the IWT framework for the first time.
Ratle HEP	Chenab (Western River)	Technical design violations related to pondage capacity, low-level sediment outlets, and gated spillways.	Procedural Stalemate (Pakistan sought Court of Arbitration; India sought Neutral Expert)	Current Status: World Bank appointed both forums. India has since boycotted the CoA, proceeded with construction, and suspended the IWT, rendering the dispute resolution process moot from its perspective. Highlights the breakdown of the treaty's mechanisms.

The Riparian Perspective: Socio-Economic and Environmental Realities

Discussions on the Indus dispute are often framed in strictly state-centric terms, focusing on sovereignty, security, and intergovernmental negotiations. This perspective, however, tends to obscure the lived experiences of the millions of people who reside within the Indus basin. An examination of conditions in India's riparian states, particularly Jammu and Kashmir, Punjab, and Himachal Pradesh, reveals how water politics directly shape patterns of development, environmental stress, and local discontent. These ground-level realities increasingly influence India's broader hydro-political posture.

In Jammu and Kashmir, through which the western rivers primarily flow, the Indus Waters Treaty is widely viewed as a constraint on economic development [13]. Restrictions on storage capacity and large-scale water infrastructure have

limited the region's ability to fully utilise its hydropower potential and support agricultural expansion. The result has been persistent power shortages and a perception of economic neglect, which intersects with the region's already complex political context. In response, the Indian government has promoted a series of hydropower projects on the Chenab River, including Baglihar, Ratle, Dul Hasti, and the recently approved Sawalkote project. These initiatives are framed domestically not only as infrastructure investments, but also as measures to address long-standing developmental imbalances and enhance regional energy security. In this narrative, challenging the treaty's constraints is presented as a means of delivering economic justice to the population of Jammu and Kashmir.

The experiences of Punjab and Himachal Pradesh reflect a different, but equally complex, trajectory. The Bhakra Nangal Dam on the Sutlej River stands as a symbol of post-

independence development and state-led planning^[14]. It played a central role in supporting the Green Revolution by providing assured irrigation, helping transform Punjab into a major agricultural producer. The project also supplies electricity and drinking water to large parts of northern India. At the same time, the long-term consequences of this model have become increasingly evident. Scholars and policymakers point out that agricultural growth relied heavily on groundwater extraction through tubewells, leading to severe depletion of aquifers. Today, Punjab faces widespread groundwater stress, soil degradation, and unresolved social costs related to displacement caused by large dams.

Environmental concerns are particularly acute in regions witnessing dense hydropower development. The Chenab Valley is both geologically fragile and seismically active. Experts have raised concerns that the construction of multiple large dams along a single river system may amplify seismic risks. Construction activities such as tunnelling, blasting, and improper disposal of debris have also contributed to deforestation, disruption of river ecology, and the drying of natural springs. These impacts have fuelled community resistance and protest. Field surveys conducted by Dr. Duryodhan Nahak indicate growing demands for local participation in decision-making, including calls for community-based oversight of displacement and rehabilitation. These voices highlight the limits of top-down water governance and underscore the need for approaches that balance national priorities with environmental sustainability and local well-being.

The Looming Crises: Climate Change and the New Geopolitics of Water

The most serious challenge facing the Indus Waters Treaty today arises not primarily from political disagreement, but from climate change, a factor that the treaty's designers in the 1960s could not reasonably anticipate. The Himalayan glaciers, often described as the "Third Pole" because of their vast ice reserves, are retreating rapidly as global temperatures rise. Since these glaciers are a major source of water for the Indus river system, their decline is fundamentally reshaping the basin's hydrology and undermining the treaty's assumption that river flows would remain broadly stable and predictable.

Scientific research indicates that the Hindu Kush Himalayan region is warming at a faster rate than the global average. This has produced a complex and uneven pattern of change. In the near to medium term, increased glacial melt is expected to raise river flows, heightening the risk of flooding and glacial lake outburst floods. Over the longer term, however, continued glacial retreat is likely to result in a sustained reduction in water availability, particularly during dry seasons when meltwater plays a critical role. The Indus basin is especially exposed to these shifts, as snow and glacier melt account for a large share of runoff in its upper reaches.

The Indus Waters Treaty is poorly equipped to manage such variability. Its rigid system of fixed river allocations offers little flexibility to respond to floods, prolonged droughts, or long-term changes in water availability. The treaty does not provide for joint flood management, adaptive reallocation during water shortages, or basin-wide environmental

protection. Issues such as ecological flows and the growing depletion of groundwater remain largely outside its scope. In this sense, climate change poses an internal challenge to the treaty by exposing the limits of its design rather than merely placing external stress upon it.

These environmental pressures are now intersecting with significant geopolitical shifts. India's decision to suspend the treaty in April 2025 represents a move away from a rules-based framework toward a more coercive approach to water relations. The suspension has disrupted key cooperative mechanisms, including routine data sharing on river flows, which is vital for flood forecasting and water management downstream. Subsequent actions, such as unilateral flow adjustments at the Baglihar dam, signal a greater willingness to use water infrastructure in pursuit of strategic objectives.

Although India does not currently possess the capacity to fully restrict flows to Pakistan, the suspension removes legal constraints on future projects on the western rivers. For Pakistan, whose agriculture depends overwhelmingly on the Indus system, this uncertainty deepens existing vulnerabilities. The convergence of climate stress and weakened institutional safeguards heightens the risk of miscalculation and sets a troubling precedent for transboundary water governance in an increasingly climate-affected world.

Conclusion: Reimagining Water Governance in the Indus Basin

For more than six decades, the Indus Waters Treaty stood as a rare example of diplomacy successfully managing conflict over a shared and vital resource. Its survival through wars and prolonged political hostility earned it recognition as a durable framework for international cooperation. This study, however, has shown that the treaty now belongs to a different historical moment. Designed for the political, technological, and environmental conditions of the mid-twentieth century, it is increasingly unable to respond to the challenges that define the twenty-first. Its core assumptions are being steadily weakened by the strategic use of legal provisions for political leverage, unresolved developmental and environmental pressures within the basin, and, above all, the transformative effects of climate change on the region's hydrology.

The treaty's original strength lay in its rigid division of rivers, which effectively separated water management from broader political disputes. Over time, this rigidity has become a structural limitation. By prioritising partition over cooperation, the IWT has prevented the emergence of adaptive, basin-wide governance mechanisms capable of addressing shared risks such as glacial retreat, extreme weather events, and ecological degradation. The erosion of its dispute resolution framework, culminating in India's unilateral suspension of the treaty, marks a shift from an imperfect but rules-based order to a more uncertain and coercive form of hydro-politics.

Maintaining the status quo is no longer viable. The choice is not simply between preserving or abandoning the IWT, but between an unmanaged breakdown of the existing regime and a deliberate transition toward a more resilient framework. Current trends suggest that without intervention, political tensions and climate stress will push the basin

toward instability.

A sustainable path forward requires moving beyond the narrow scope of the 1960 treaty. A revised framework must emphasise cooperation rather than division and treat the Indus basin as an interconnected ecological system. This would require flexible arrangements to manage climate variability, formal integration of environmental sustainability, basin-wide coordination including groundwater, broader participation of co-riparian states, and meaningful inclusion of local communities. While such reform appears difficult in the present political climate, the alternative risks allowing water scarcity to become a central driver of conflict in one of the world's most vulnerable regions. The international community, particularly institutions involved in the treaty's creation, has a critical role to play in facilitating dialogue toward a more durable architecture for water security and regional stability.

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