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Water Scarcity and International Conflict: The Case of Indus Water Treaty

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ABSTRACT

One of the biggest continuous irrigation networks in the world is based on Indus system and approximately 270 million people in South Asia in Pakistan and northern India depend on it. This article analyses the changes in the erstwhile peaceful water-sharing arrangement under the Indus Waters Treaty (IWT) that was signed in 1960 between Pakistan and India which may become a flashpoint for tensions between the two countries. This is because of decrease in glaciers mass, changes in monsoons and increasing demand. Due to considerations relating to geography, infrastructure, climate, and administration, Pakistan is more vulnerable to threats to its downstream and water security than India. especially in India decision of placing the indus water treaty in abeyance in April, 2025. Which route poses the most geopolitical and hydrological risk to Pakistan? Given Pakistan's water shortage and reliance on the pact, the research goes on to suggest that, without the treaty, Pakistan is especially susceptible to the shifting hydrological and political climate because of its position as a downstream riparian state, which has put it at a disadvantage compared to India. The analysis is based on the International Centre for Integrated Mountain Development (ICIMOD) hydrological assessment and the Indian government decision to suspend the Treaty in April 2025 and the growing hydrological and political power of India, which indicates that Pakistan is more vulnerable in water than India, and is experiencing water shortfall. The article fits into the larger scholarly debate about the "water wars" and concludes that there is little likelihood that the competition between countries over water will become a direct battle, but that water is becoming a more effective tool of coercive diplomacy and should not be considered as war. The end gives a fair and fair assessment of the challenges facing Pakistan and the policy shifts that are required to tackle these challenges.

Keywords: Indus Waters Treaty, Water Scarcity, Pakistan, India, Transboundary Water Conflict, Glacial Melt, Hydro-Politics.

Introduction

In Pakistan and India's history, water dispute has been the major pillar of their relationship. The Indus River system, created by six major rivers that flow from the Himalayas, Karakoram and Hindu Kush, supplies 80% of Pakistan's agricultural land and a substantial amount of the agricultural land of the Indian states of Punjab and Rajasthan (The World Bank, 2018). This system's sharing has not been hindered in 65 years by three wars and numerous diplomatic failures (ICWA, 2025). The Treaty was drafted at a time when water was bountiful and politics was rosy, before the pressures of climate change, population growth and glacial melt.

The question raised by the paper is significant to see how Pakistan is going to react to the changes in the precipitation pattern and shrinking of the Himalayan glaciers under the umbrella of the Indus Waters Treaty (IWT) and what impact such changes will have on the future relations between Pakistan and India? The investigation has become from abstract to concrete. On April 23, 2025, the Indian government, in response to the militant attack on tourists in the Pahalgam, announced the suspension of IWT "in abeyance" (ClingendaellInstitute et al., 2025). Both governments have stopped maneuvering for the first time in the Treaty's history, uncovering weak institutional protection.

Sometimes the difference between the two States is recognized in this story. Pakistan's water-management issues stem from poor storage infrastructure and governance. In addition, the high rate of population growth in Pakistan are also part of the hydrological shock response (Ishaque et al., 2023). India as the upper riparian nation, has structural power which climate change is expected to enhance. Water conflicts are not imminent by the way, according to the article. The other scholarly literature is overwhelmingly against Wolf (1998). It concludes that Pakistan must get ready to put itself in a position to use water as coercive signalling in a continuing political row. Internal water-management issues, climate change, population increase, and external hydro-political pressures all contribute to Pakistan's vulnerability.

Literature Review and Research methodology

Literature Review

The Indus Basin is the keystone of the hydro political landscape of South Asia, supporting about 270 million people in Pakistan and northern India. The Indus Waters Treaty of 1960 (IWT) had allocated the rights to use the six rivers to either Pakistan or India, giving Eastern Rivers to India and Western Rivers to Pakistan, but allowing non-consumptive rights to India. But there are structural weaknesses in this equation that are being pointed out by scholarship, since the treaty was written when hydrological abundance prevailed and is no longer the case because of demographic pressure and the rapid climate changes. The Hindu Kush Himalaya (HKH) region, a popular description of the "Third Pole", is experiencing a rapid retreat, as shown in recent hydrological assessments. Snow and glacier melt contribute approximately 70% of streamflow in the Indus Basin, making the basin particularly sensitive to changes in cryosphere conditions., and current projections indicate that the rate of glacier loss has increased by about 100% since 2000, which will impact baseline snowfall and long-term river flows by the end of the century. There is a scholarly debate between "water wars" (i.e., direct military conflict with the other country regarding water resources) and "water coercion" (i.e., strategic political pressure). Wolf (1998)

conducted an historical analysis showing that for the last two millennia, interstate wars have not been fought so much for the water, as for its economic and political value. Rather, contemporary transboundary relations are characterized by hydro-coercion, which consists of the upstream riparians using their geographical and structural position to gain diplomatic leverage (Wolf, 2018). This was made evident in April 2025 when India put the IWT "in abeyance" after a militant attack in the Pahalgam, which disrupted joint commissions and data-sharing. At the same time, literature highlights the hydrological crisis in Pakistan is impacted by problems with internal governance and infrastructure., alongside climate change and transboundary water pressures., such as per capita water availability below 1000 m³, storage capacity at less than 30 days, and ineffective flood irrigation practices. Therefore, it has been argued that the Both internal issues with governance and external geopolitical and transboundary forces contribute to Pakistan's water insecurity.

Methodology

This study is of qualitative and single case study design, which aims to explore how vulnerable Pakistan is in the changing diplomatic and hydrological context of the Indus Waters Treaty. The main analysis goal is to explore the interactions between environmental stressors (glacial retreat, precipitation variability) and structural hydro-politics after the treaty suspension in April 2025. The research is a synthesis of primary document analysis and empirical hydrological data. The primary sources are formal diplomatic statements, press briefings by governmental ministries, and legal texts on the 1960 Indus Waters Treaty. The hydrological data and climate projections are based on published assessments from the International Centre for Integrated Mountain Development, while socioeconomic indicators on per capita water availability are based on national statistical reporting and international development indicators. Secondary literature includes publications from peer-reviewed journals on the field of hydro-politics, international water law and transboundary conflict resolution. Data is analysed in accordance with Aaron Wolf (1998, 2018), who defined the components of transboundary water conflict and coercion as comprising external upstream structural pressures (infrastructure deployment and political suspensions) and internal domestic structural pressures (storage capacity, extraction rates and provincial allocation dynamics). The synthesis compares the hydro risk models and cross-references with the legal-institutional failures in IWT and the constraints of the domestic governance in Pakistan following the incident of 2025 in Pahalgam and determines the main strategic exposure of Pakistan arising from the legal-institutional failures in IWT or from the internal domestic governance constraints.

The Indus Waters Treaty: Origins and Architecture

The Partition of the Indus basin in 1947 resulted in the separation of headworks from the related canal commands, with many canal commands ending up in Pakistan and much of the irrigated land in India (Editor, 2025). It was decided that after gaining independence, water flow will be continuous, and hence a provisional Standstill Agreement was signed to this effect. However, when the standstill agreement was terminated in 1948, the canal water to Pakistan was temporarily suspended and this fact was a precursor of the problems that led to the subsequent Treaty negotiations (Puri, 2026).

Following nearly a decade of negotiations facilitated by the World Bank, India and Pakistan signed the Indus Waters Treaty on 19 September 1960. The Treaty gave the three Eastern Rivers (Ravi, Beas and Sutlej) to India and the three Western Rivers (Indus, Jhelum and Chenab) were allocated primarily to Pakistan. The Eastern Rivers (Ravi, Beas and Sutlej) with an average flow of 33 million acre-feet (MAF) were fully transferred to India. Pakistan had main rights to Indus, Jhelum and Chenab with an average annual flow of 135 MAF, whereas India claims (and Pakistan denies) that India had non-consumptive uses, a limited acreage irrigation and "run-of-the-river" hydropower generation (New Delhi, 2026).

A Permanent Indus Commission, one member from each side meets annually to exchange hydrological data and consult on technical problems, and the Treaty has a three-step dispute resolution process that includes a Neutral Expert and a Court of Arbitration. There were no controversies over the first 45 years of the Treaty. Then, in the 2000s, India started to construct hydroelectric works on its western rivers and things changed. The Baglihar dam on the Chenab was disputed by Pakistan in 2005, and India was asked to change certain designs, structures and other related models. News Agencies (2007) The Court of Arbitration had ruled on the Kishanganga project on a Jhelum tributary in 2013 and India constructed the dam in 2017.

Such conflicts have systemic issues which may impact Pakistan's long-term security: the time, storage and hydropower development by India on rivers flowing through the Indian side territory to Pakistan is not as clearly defined as the water withdrawal limits of the Treaty. The difference is expected to grow larger for river countries with the variability of river flow expected to rise due to climate change.

Changing Hydrology: Glacial Retreat and Rainfall Variability in the Basin

There is more snow melt and glacier melt in the Indus system from the Himalayan region of India and Pakistan which is known as "Third Pole" for the largest snow mass. The Indus is among the most cryosphere dependent river systems in the HKH, and the contribution of glacier/snow melt is 70% of streamflow (ICIMOD, 2025). As per ICIMOD (2026), 41 percent of the glaciers and 44 percent of the glacierized area of the region are in Indus basin.

There is an increasing trend in the cryosphere. With the business-as-usual emissions scenario, the glaciers in the HKH could shrink by up to 80% by the end of the century (ICIMOD, 2023). The latest 2026 assessment, which was based on 50 years of monitoring data and enhanced satellite images, concluded that HKH ice loss has doubled since 2000 and the loss of ice thickness for benchmark glaciers is up to 27 meters. Between 1990 and 2020, 6% of the glacierized area has been lost from the Indus basin, but this is an underestimate as 75% of the glaciers are in the smallest size class and are melting at a higher rate (ICIMOD, 2026).

Political implications are much easier to overestimate than short- and long-term implications of this melt. Glaciers continue to experience mass loss are said to be in the "peak water" phase and are expected to see runoff in the Indus further increase till 2050 (Krishnamurthy, 2023). Snowfall over the Indus basin has, however, been projected to fall 30-50% less than the baseline of 1971-2000 by 2070-2100 using the ICIMOD models, but this will certainly limit discharge. In reality, Pakistan is experiencing two phases of hazard: firstly, the high flows are becoming less regular

and more prone to flooding over the past few decades and secondly, the steady flow of water required for agriculture has been curtailed over time.

An additional source of snowpack variability in the upper basin is the increase in monsoon and western disturbance variability in South Asia, in addition to glacial variations. The variability in the South Asian monsoon and winter western disturbances, that add to the glacier snowpack in the upper basin, are exacerbating this change. Snowfall to rainfall ratio is being affected by $\sim 0.28^{\circ}\text{C}$ elevation-dependent warming (EDW) in the higher elevations at a higher pace. This is heightening the risk of glacial lake outburst floods (GLOFs) and flash floods, and less predictability in seasonal water availability forecasting for both countries (ICIMOD, 2023). All this does not impact the quantity of water provided via the Treaty to Pakistan but it does impact the certainty of water supply, and at a time when the storage infrastructure is not ready to accommodate the impact.

Pakistan's Structural Water Vulnerability

Years of demographic and infrastructural strains add to Pakistan's hydrological vulnerability in the context of a climate emergency. The water availability per capita has decreased from 5260 cubic meters in 1951 to 1000 in mid 2010s and several Pakistani and Foreign studies predict further decline of 660 to 860 cubic meters by 2025 (Ishaque et al., 2023). Water stress is defined as being below 1700 cubic meters, water scarcity below 1000 and "absolute scarcity" below 500 in the country's water-stress framework, known as water-stress indices. The country's water-stress framework (or "water-stress indices") identifies water stress as less than 1700 cubic meters, water scarcity as less than 1000, and "absolute scarcity" as less than 500. Several water-availability indicators suggest that Pakistan is experiencing water stress and may be nearing water scarcity. and according to UNDP estimates, 207 million of its citizens will fall into "absolute scarcity" by the end of this decade.

More than nature causes this deficit. This has increased in Pakistan over the past 60 years, the population has increased by 5 times and the demand for fixed allocations is also increasing (Water – the Lifeblood of Tomorrow, 2020). The holding capacity of the large reservoirs in Pakistan is less than 30 days' worth of water, whereas many developed countries have a holding capacity of 1-2 years, which is sensible (State Bank of Pakistan, 2017). The reservoirs of Pakistan store only 10% of the average annual discharge of rivers while the recommended level of 40% has not been achieved (State Bank of Pakistan, 2017). During high flow seasons, a lot of water is being lost into the Arabian Sea and Pakistan had a right to it under the treaties as well; and during dry seasons, it is not being stored. The effects of climate change are expected to make flows less predictable.

Governance and efficiency losses are also playing a part in this deficit. Ishaque et al. (2023) reported that the extraction rate of surface water is 74% and for the extraction rate of groundwater is 83%. This is much higher than in other countries with water scarcity. This means that there is not much room to ride out bad years. As the incidents of water disputes between the provinces illustrate. Pakistan is grappling with a chronic water problem but indirectly related to the Indian water flows. Sindh has been complaining about a long time about the unfair water distribution from upstream Punjab and similarly Balochistan do have reservations on Sindh, the

water-table has been reported to be falling at the rate of about one metre per year under the provincial capital of Quetta.

Pakistan faces significant and increasing water-security challenges. Already, with low storage capacity, high population growth, and poorly developed water governance systems by the provinces of Pakistan, and inefficient flood irrigation, it was already moving towards absolute scarcity (Ishaque et al., 2023). Pakistan will be facing critical scarcity if it adheres to the spirit and letter of the Indus Waters Treaty and honor its commitments. Vulnerability of the Treaty is being aggravated by climate change and Indian pressure, with domestic policy decisions adding to the risk.

More than homes are afflicted with this. Agriculture continues to be a significant element of Pakistan's economy, accounting for around 23% of GDP according to recent official assessments and employing a considerable segment of the nation's workers, with a notable percentage of the labour force involved in agricultural endeavours. making any significant drop in guaranteed water supply for agriculture a threat to food price inflation, loss of rural capacity earning potential and pressure on national budgets already under tremendous debt burden (Ishaque et al., 2023). The major crops of the country that are irrigated, wheat, rice, sugarcane and cotton, have high water requirements, and the canal-irrigation system around the Indus is one of the largest continuous irrigation systems in the world, making high water losses even at low percentages significant. The direct economic damage from the treaty ban in 2025, as estimated by INP (2023), is less than what analysts believe will be the cost of Pakistan to Climate and Water Risk by 2050 if these risks are left unchecked, which is estimated to be 18-20% of GDP. The structural vulnerability of Pakistan is more serious than any of the consequences with relation to India and hence, In order to address transboundary water challenges, Pakistan should modernise its water sector domestically while also actively engaging in diplomatic and legal processes.

India's Upper-Riparian Position and Strategic Calculus

India is an upper riparian state, which gives India several structural benefits and the potential of being even more accentuated due to climatic stress effects. As a result of India's physical control over the headworks and dam sites on the Western Rivers, the country is able to determine a significant portion of the timing and way water is to arrive at the border. While the Treaty provides for specified uses of the Western Rivers, it also contains detailed technical and legal restrictions on the use of the Western Rivers for agriculture, hydropower, storage, and design and operation of infrastructure (Editor 2025). Moreover, India is striving towards the goal of generating power from the Western Rivers project. Pakistan has condemned each of these rivers as a "creeping encroachment" on its rights, while on these rivers, India has stuck to its "run of river", : Baglihar, Kishanganga and Ratle (still disputed) (Puri, 2026).

For a long time, India has been not happy with the dispute resolution mechanism provided in the Treaty and its grievances are still valid. In January 2023, India formally notified them that it wished to take up a detailed renegotiation of the terms of the Treaty. This came after Indian officials claimed that Pakistan's concurrent use of the Neutral Expert and the Court of Arbitration to settle the disputes over these two watercourses amounted to a breach of the Treaty for years. In 1960, India signed a treaty with Pakistan, giving it only 80 per cent of the flow of the rivers of

the basin, but it has been condemned as unfair for India in the context of the Indian river's demands. This is even though the demand for the development of agriculture and hydropower in India was significantly less than it is today (ICWA, 2025).

This grievance is not just linked with India's security issues from Pakistani territory, but it also gets entangled with the issues of cross-border management. The need for counter measures has always been tied to water diplomacy, as successive governments in India have continually stressed over the years. From a Hydro-strategic point of view, the relationship is important because it gives India a psychological and economic edge over the use of military force. This benefit can be achieved by limiting data sharing, delaying reservoir releases, and/or threatening to reopen the Treaty. (Michel, the year 2025).

The 2025 Suspension: Water as an Instrument of Coercive Signalling

The most obvious instance of this is in April 2025. 26 people, most of whom were tourists, were shot and killed in the Baisaran territory in Kashmir on April 22. Indian authorities subsequently attributed the attack to Pakistan-based militants, while Pakistan rejected allegations of involvement as no evidence was provided to Pakistan for these huge allegations. The next day, India announced a series of retaliatory measures, the most important of which being the suspension of the Indus Waters Treaty until Pakistan "credibly and irrevocably" stops its support of cross-border terrorism (New Delhi, 2026). However, India didn't stop there. Pakistan has termed the cancellation of the water pact as an act of war and has denied any hand in the attack (Staff, 2025).

When speaking about "abeyance" it is important to differentiate changes and non-changes. Notably, no diversion, dam or other obstructions of the Western Rivers into Pakistan have been seen during the first couple of weeks since the announcement, and analysts at the Centre for Strategic and International Studies (CSIS) said that India's storage limitations reduced the physical impact on river flows (Michel, 2025). India has ceased various components of the Treaty's cooperative measures, such as exchange of reservoir levels, flood flow data, Permanent Indus Commission meetings, and dispute resolution measures (Chen, 2026). The most serious danger faced by Pakistan was that it did not receive advance warning of the flooding and it was done during the peak monsoon season when water flowed the most in the Western Rivers. Just a few hours could be the difference between evacuation and disaster (Michel, 2025).

It seems clear that there was a motive behind the government's decision to encourage a hostile takeover by the government, and there is little point in squabbling about a motive that may not have existed. In a recent public meeting after the newsbreak, the Indian Minister for Water Resources, Jal Shakti spoke with the journalists and explained the government's plan to not allow any water from the Indus system to flow into Pakistan. This meant that the government was ready to go beyond the level of diplomatic rapport building (Union Home Minister Amit Shah Chairs High | Akashvani News, 2025b). According to Michel (2025), the suspension is a 'feasible 'initial measure' which could result in a treaty's annulment, rather than just symbolic.

In response, Pakistan made efforts through the legal/ diplomatic community. Islamabad brought the subject to the United Nations Security Council, claiming the Indian decision was based on the violation of the law of treaties, which doesn't include a clause of withdrawal (Chen, 2026). India,

on the contrary, has advanced, joined by a sympathetic legal argument, that the Council cannot be a place of interpretation of the Treaty. Furthermore, India has argued that the dispute mechanism that is provided in the Treaty itself is the only forum at which this question should be raised. And India has unilaterally abstained from this mechanism. If this is the case then the upper riparian can say whatever they like but they have no right to ask the lower riparian to make themselves 100% cooperative. This is exactly what would be considered to be ambiguous legally. Although Pakistan has the ability to enquire about the legitimacy of the suspension at any time and in any location, it chooses, it is still possible that India will not accept its full cooperation efforts.

In the middle of the year 2025, ceasefire arrangements came to an end to active military exchanges between the two countries. But the abeyance of the Treaty persisted and some of the analysts have read this as a sign that India has a game-plan to turn the suspension into a point of leverage instead of a one-shot crisis response (ClingendaelInstitute et al., 2025). The experience proved to Pakistan for them that the Treaty was no guarantee that one nation would last, but rather the durability of another nation and, more importantly, how one nation has to be tolerant of the capability of another nation.

A Balanced Assessment: Constraints on Escalation

On the other hand, there are certain restrictions on how far the coercive process can be carried out, and a proper evaluation of the war should take into account these restrictions along with Pakistan's weaknesses. Secondly, the storage capacity in India will not be enough to store and divert water from the western rivers in the foreseeable future, existing and proposed dams in India are mostly run of river dams with a hydropower component and do not have the storage capacity to divert water from Pakistan. In addition, India will be on the losing side in terms of costs to its standing and relationships as a result of the termination of the Treaty. This is especially relevant in India where the additional upper riparian issues have to be tackled such as the Brahmaputra. Thirdly, both countries have nuclear weapons, and world powers such as the United States, China, and others with an interest in maintaining regional balance are very interested in avoiding further escalation. This can offer Pakistan an opportunity to play a more influential role than what the Treaty allows for.

Likewise, it is important to record that the grievance of Pakistan is not just an issue of an over trusted aggressive Indian army. This is something that needs to be done. Even though India's underlying grievances regarding the Treaty's grievance mechanism and its arguments of the disparity between an allocation from the 1960s and pressures in the present day are not without technical merit, even if they were expressed at an appropriate time and for an inappropriate reason when India was dealing with a security event (ICWA, 2025), they are not without technical merit. Pakistan has typically resisted efforts to significantly amend the Treaty, demonstrating its apprehension regarding the safeguarding of its established water rights and the current treaty structure. The lack of trust between the two Indus Commissions is attributed to the national situation of Pakistan (ClingendaelInstitute et al., 2025). But if the 2015 agreement (or future agreements) are going to be sustainable for the next 50 years of uncertainty brought by climate change, Pakistan may contemplate diplomatic flexibility and increased cooperation on data-

sharing, drought management, and dispute-resolution procedures if its treaty rights and water-security concerns are maintained.

Implications for Pakistan: Risks and Policy Options

The subsequent conclusion regarding Pakistan's circumstances could be inferred by drawing inspiration from the hydrological and political patterns that are described in this essay. This will be followed by a wide decrease in reliable water availability after the mid-century due to glacier thaws and glacial depletion. From a hydrological point of view, the nation will see steadily increasing peak flow that is increasingly unpredictable in the following decades. The political context of the 2025 suspension makes it clear that the co-operative element of the Treaty, which includes a clause in which Pakistan is given prior notice of flooding and the opportunity to leave if they face a threat of security perhaps not of their own creating –for which they may be partly or even controversially responsible can be unilaterally withdrawn, and that no one in the international system has yet been eager to extend that magnanimity to India (ClingendaellInstitute et al., 2025).

This mix makes Pakistan have very limited alternatives, putting most of the costs of adaptation on its shoulders, and to address long-term water-security problems, Pakistan may need to further enhance its current policy measures, which are struggling with implementation and capacity issues. The weak enforcement of groundwater extraction regulations, the use of poor irrigation practices wastes water and strains resources, the high level of groundwater domestic subsidies for extraction and use and the lack of adequate metering of urban water consumption have always been identified as internal deficiencies, which have increased external hydro-political pressure on the water sector (Ishaque et al., 2023). Even if it could offer space for large dams and smaller check dams; establish water management arrangements that would be more efficient, extracting 74 percent instead of 77 percent of surface water; provide some buffer for Pakistan's groundwater management, given the current intra-Pakistan conflicts over the distribution of the nation's treaty allocation; and even with the progress made with India, this would certainly support the reduction of Pakistan's susceptibility.

Pakistan has sought diplomatic and international legal channels, engaging with global institutions, while also utilising mechanisms linked to the Indus Waters Treaty. The extension of inherent dispute resolution processes in the Treaty may seem more promising, as might be the regional climate adaptation dialogue that would increasingly bring the bilateral political issue into play; and even though a new agreement on access to data, occurrences of drought, and decision-making procedures may be unpopular at home there appears to be a willingness to discuss new rules. In an alternative scenario, India fails to de-escalate and stops cooperating; at the same time, Population expansion, water demand, and climate threats may increase Pakistan's resource challenges without long-term policy solutions.

Along with optimizing storage and irrigation system, there is a need for investment in independent hydrological monitoring, which will enhance Pakistan's negotiating position. Pakistan's independent hydrological monitoring and early-warning skills were tested during the 2025 crisis due to the disruption of cooperative data-sharing. These conditions were used to monitor river conditions from upstream in the Western Rivers but subsequently ceased to

provide this information. Pakistan should improve its monitoring and forecasting systems to avoid relying on bilateral collaboration for flood warnings and hydrological data. This depends on better satellite observations, measurements upstream with the cooperation of third countries and meteorological cooperation in the region. Whether Pakistan's political and diplomatic relations with India extend to cooperation or confrontation, this is the case. Increased adoption of alternative crops, rather than rice and sugarcane grown for export value as water scarcity in Pakistan has resulted in pressure on the irrigation system, may reduce the demand for the irrigation system while not adding any financial burden on India (Ishaque et al. 2023).

There are no political factors involved in these actions. The expansion of storage has been thwarted in the past by conflict over water distribution between the provinces of Pakistan. Such conflicts mostly a reflection of the divisions between those who can benefit from the dams and those who depend on them have caused major delays in the implementation of important dam projects such as Diamer-Bhasha and Dasu. The reforms of the water tariffs for agriculture are a political dilemma that provides an explicit risk in a country where farmers still have significant electoral weight. However, if the IWT is indeed the core issue that needs to be managed during Pakistan's current water governance crisis, whether from New Delhi, weather changes, population growth, or some combination of these, then the country will be vulnerable to future crises.

Conclusion

It has been recognised that implementation of the Indus Waters Treaty is one of the best examples of water cooperation between two countries in the past six decades. Furthermore, the history of water conflict suggests that Pakistan and India are unlikely to engage in a "river war" as has happened in other places in the past (Wolf, 1998). The historical background provided after April 2025, however, makes it obvious that the 'endurance' the Treaty enjoyed was not just due to the structure of the legal document, but depended upon some Indian 'restraint' that was not afforded as a matter of privilege. In nearly all the stress indicators which could be used to compare the two states, Pakistan was more vulnerable in downstream dependency, water-storage capacity, and per-capita water supply. It was the state in which least control was vested over the timing of water flows as compared to the other states, least per capita water availability, in case of water crisis in 2025, it was the state which had lost cooperative and conflict resolution mechanism provided by the treaty with no alternative mechanism available for Pakistan to restore the same. Making the claim that Pakistan has no power is a claim that cannot be substantiated and India's action may have legal and diplomatic ramifications. However, it's important to acknowledge the location of the weakness. Climate change is not the cause of the water crisis in Pakistan but it has aggravated the problems which were already at the brink of collapse over the past couple of decades due to inadequate investments in water storage and poor utilization of water resources. But this crisis has come at a time when the political hurdles that have since set water-sharing conflicts apart from the more volatile ones between India and Pakistan have proven to be far less sturdy than anticipated. The viability of the Indus Waters Treaty for the coming ten years would depend on the willingness of the governments,

particularly Pakistan, to make water security a top priority in the discussion of the conflict involving Kashmir and the Indus's hydrology, instead of giving it secondary importance.

References

Aaron Wolf on Transboundary Water Conflict and Cooperation. (2018, November 30). New Security Beat. <https://www.newsecuritybeat.org/2018/11/aaron-wolf-transboundary-water-conflict-cooperation/>

Michel, D. (2025). Can India cut off Pakistan's Indus river lifeline? Csis.Org. <https://www.csis.org/analysis/can-india-cut-pakistans-indus-river-lifeline>

Wolf, A. (1998). Conflict and cooperation along international waterways. Water Policy, 1(2), 251–265. [https://doi.org/10.1016/s1366-7017\(98\)00019-1](https://doi.org/10.1016/s1366-7017(98)00019-1)

The World Bank. (2018, June 11). Fact sheet: The Indus waters treaty 1960 and the role of the World Bank. World Bank. <https://www.worldbank.org/en/region/sar/brief/fact-sheet-the-indus-waters-treaty-1960-and-the-world-bank>

Hindu Kush Himalaya glaciers losing ice at double the rate since 2000, new ICIMOD report confirm - ICIMOD. (2026, March 18). ICIMOD - International Centre for Integrated Mountain Development. <https://www.icimod.org/press-releases/hindu-kush-himalaya-glaciers-losing-ice-at-double-the-rate-since-2000-new-icimod-report-confirm/>

ICIMOD responds to UN study finding 'Food, Water, Energy and Livelihood security in jeopardy in the Hindu Kush Himalaya' - ICIMOD. (2025a, March 21). ICIMOD - International Centre for Integrated Mountain Development. <https://www.icimod.org/press-release/icimod-responds-to-un-study-finding-food-water-energy-and-livelihood-security-in-jeopardy-in-the-hindu-kush-himalaya/>

New Delhi, O. C. (2026). India suspends Indus waters treaty. The Daily Star. <https://www.thedailystar.net/news/world/news/india-suspends-indus-waters-treaty-3879326>

ClingendaellInstitute, Clingendaelorg, & clingendael-institute. (2025). Indus water treaty 2025: A pause of cooperation, not an end. Clingendael. <https://www.clingendael.org/publication/indus-water-treaty-2025-pause-cooperation-not-end>

Puri, R. (2026, April 14). Indus waters treaty 1960: Provisions, suspension & India-Pakistan water dispute - anantam IAS. Anantam IAS. <https://anantamias.com/indus-waters-treaty/>

Editor. (2025, October 3). Indus waters treaty: A legal perspective. SCC Times. <https://www.sconline.com/blog/post/2025/10/03/indus-waters-treaty-a-legal-perspective/>

Staff, A. J. (2025, April 24). Kashmir attack: Does India's indus waters treaty freeze threaten Pakistan? Al Jazeera. <https://www.aljazeera.com/news/2025/4/24/kashmir-attack-does-indias-indus-waters-treaty-freeze-threaten-pakistan>

Landmark report on impacts of disappearing snow and ice in the Hindu Kush Himalaya – current emissions path threatens two billion people and is accelerating species extinction - ICIMOD. (2023, June 20). ICIMOD - International Centre for Integrated Mountain Development. <https://www.icimod.org/press-release/landmark-report-on-impacts-of-disappearing-snow-and-ice-in-the-hindu-kush-himalaya-current-emissions-path-threatens-two-billion-people-and-is-accelerating-species-extinction/>

Krishnamurthy, R. (2023, June 20). Melting Hindu Kush Himalayas will decrease water in river basins By 2100, warns ICIMOD. Down To Earth. <https://www.downtoearth.org.in/climate-change/melting-hindu-kush-himalayas-will-decrease-water-in-river-basins-by-2100-warns-icimod-90129>

PTI. (2025, April 24). Pahalgam terror attack | India informs Pakistan of its decision to keep indus waters treaty in abeyance. Deccan Herald. <https://www.deccanherald.com/india/pahalgam-terror-attack-india-informs-pakistan-of-its-decision-to-keep-indus-waters-treaty-in-abeyance-3509539>

Correspondent, S. J. (2017, September 25). Pakistan is likely to face a water crisis By 2025. Gulf News: Latest UAE News, Dubai News, Business, Travel News, Dubai Gold Rate, Prayer Time, Cinema. <https://gulfnews.com/world/asia/pakistan/pakistan-is-likely-to-face-a-water-crisis-by-2025-1.2095640>

INP. (2023, July 20). Pakistan's per-capita surface water to decrease to 860 cubic meters By 2025. The Nation. <https://www.nation.com.pk/20-Jul-2023/pakistan-s-per-capita-surface-water-to-decrease-to-860-cubic-meters-by-2025>

Ishaque, W., Mukhtar, M., & Tanvir, R. (2023). Pakistan's water resource management: Ensuring water security for sustainable development. *Frontiers in Environmental Science*, 11. <https://doi.org/10.3389/fenvs.2023.1096747>

Chen, S. L. (2026, February 7). The 'abeyance' of the indus water treaty: A strategic interpretative ploy or a recipe for disaster? – American review of international arbitration. Columbia.Edu. <https://aria.law.columbia.edu/the-abeyance-of-the-indus-water-treaty-a-strategic-interpretative-ploy-or-a-recipe-for-disaster/>

ICWA. (2025). The suspension of the indus water treaty: Its implications for India - Indian Council of World Affairs (government of India). Icwa.In. https://www.icwa.in/show_content.php?lang=1&level=3&ls_id=13109&lid=8004

Union home minister Amit Shah chairs high | akashvani news. (2025b). Newsonair.Gov.In. <https://newsonair.gov.in/union-home-minister-amit-shah-chairs-high-level-meet-on-indus-water-treaty>

Water – the lifeblood of tomorrow. (2020). UNDP. <https://www.undp.org/pakistan/blog/water-lifeblood-tomorrow>

News Agencies. (2007, February 13). World Bank rules on Kashmir dam. Al Jazeera. <https://www.aljazeera.com/news/2007/2/13/world-bank-rules-on-kashmir-dam>