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The Interplay between the Indus Waters Treaty and Nuclear Deterrence Stability in South Asia

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ABSTRACT

The relationship between water security and nuclear deterrence has become increasingly significant in South Asia, where India and Pakistan remain engaged in one of the world's most enduring strategic rivalries. The Indus Waters Treaty (IWT), signed in 1960 under the mediation of the World Bank, has historically functioned as one of the few successful confidence-building mechanisms between the two nuclear-armed neighbors. Despite wars, border crises, and diplomatic breakdowns, the treaty survived for over six decades. However, recent political developments, including India's 2025 decision to suspend its participation in the treaty following renewed bilateral tensions, have raised serious concerns regarding the future of regional stability. This article examines the relationship between the Indus Waters Treaty and nuclear deterrence stability by exploring how water disputes interact with strategic deterrence, security dilemmas, and crisis escalation. Using qualitative analysis based on international relations theories, the study argues that the weakening of the treaty not only threatens water security but also increases strategic uncertainty, thereby undermining deterrence stability. The article concludes that preserving institutional cooperation over shared water resources is essential for maintaining strategic stability and preventing future conflicts in South Asia.

1. Introduction

South Asia remains one of the most strategically sensitive and conflict-prone regions in the world because of the enduring rivalry between India and Pakistan, unresolved territorial disputes, conventional military competition, and deep-rooted political mistrust. The nuclearization of the region in May 1998 fundamentally transformed the security environment by introducing nuclear deterrence into an already complex rivalry. Nuclear weapons have generally been viewed as a mechanism for preventing full-scale war by imposing exceptionally high costs on both sides.

However, the presence of nuclear weapons has not eliminated the possibility of conflict; rather, it has encouraged the emergence of limited military confrontations, crises, and escalation risks below the nuclear threshold. This creates what scholars often describe as the stability–instability paradox, whereby strategic stability at the nuclear level may coexist with instability and conflict at lower levels (Krepon, 2005; Narang, 2014). Within this broader security environment, non-traditional security challenges, particularly water scarcity, climate change, environmental degradation, and resource insecurity, have acquired increasing strategic significance. Among these challenges, the Indus Waters Treaty (IWT) occupies a central position in India–Pakistan relations. Signed in 1960 under the facilitation of the World Bank, the treaty established a detailed framework for the management and utilization of the Indus river system. It allocated the eastern rivers—Ravi, Beas, and Sutlej—primarily to India, while Pakistan received the principal rights over the western rivers—Indus, Jhelum, and Chenab, subject to specified provisions permitting India certain uses of the western rivers. Despite wars in 1965, 1971, and 1999, as well as repeated diplomatic crises, the treaty demonstrated considerable institutional resilience and continued to provide a framework for bilateral water cooperation (Alam, 2002; Salman & Uprety, 2002). Nevertheless, its future resilience has increasingly been questioned because of growing water demand, population pressures, climate variability, glacier and snowmelt changes, expanding hydropower infrastructure, and deteriorating India–Pakistan relations. Climate change is particularly important because it may alter the timing, quantity, and predictability of water flows across the Indus Basin, thereby increasing uncertainty and competition between the two states (World Bank, 2018). The strategic importance of water is further heightened by Pakistan's substantial dependence on the Indus Basin for agriculture, food security, livelihoods, and economic activity. Consequently, disruptions or perceptions of threats to water availability can generate national-security concerns beyond conventional environmental policy. In an environment already characterized by nuclear deterrence, even a water-related dispute can contribute to threat perceptions, political mobilization, and crisis instability. The central research concern, therefore, is not simply whether water can directly cause a nuclear conflict, but whether increasing water insecurity and disputes surrounding treaty implementation can intensify strategic mistrust and indirectly affect the stability of nuclear deterrence. Examining the relationship between the IWT and nuclear deterrence is thus essential for understanding contemporary security dynamics in South Asia. A comprehensive assessment can help determine whether existing water-management institutions continue to function as confidence-building mechanisms or whether growing environmental and geopolitical pressures are transforming water into an additional source of strategic competition between India and Pakistan.

2. Literature Review

Existing scholarship on the Indus Waters Treaty (IWT) has largely developed around three interconnected perspectives: international water law, environmental security, and hydropolitics. A significant body of research considers the treaty an exceptional example of institutional resilience because it continued to operate despite the deeply adversarial relationship between India and Pakistan. The treaty survived major wars, military crises, and prolonged periods of diplomatic hostility, demonstrating that institutionalized arrangements can create channels of cooperation even between rival states. Alam (2002) argues that the IWT has provided an important framework for managing competing interests over the Indus Basin and challenges the assumption that water scarcity inevitably produces violent conflict. Similarly, Salman and Uprety (2002) emphasize that the treaty's detailed allocation of river waters, technical procedures, and dispute-settlement mechanisms have contributed to the management of disagreements between the two countries. The World Bank (2018) also highlights the continuing importance of cooperative water governance in the Indus Basin, particularly as population growth, increasing demand, environmental degradation,

and climate variability place additional pressure on existing water resources. The treaty's Permanent Indus Commission, Neutral Expert mechanism, and Court of Arbitration provide institutionalized procedures through which disagreements can be addressed without immediately becoming broader political or military disputes. Nevertheless, scholars have increasingly questioned whether the institutional resilience demonstrated during the twentieth century can be maintained under contemporary geopolitical and environmental pressures. India's expanding hydropower development on the western rivers, Pakistan's concerns regarding water availability, and the growing effects of climate change have created new areas of disagreement. These developments suggest that the durability of the treaty depends not only on its legal provisions but also on the broader political relationship between the two states.

A parallel body of literature examines nuclear deterrence and strategic stability in South Asia. Scholars generally agree that the acquisition of nuclear weapons by India and Pakistan has significantly altered their strategic calculations and contributed to the prevention of sustained, large-scale conventional war. However, nuclear deterrence has not eliminated the possibility of military confrontation. Instead, the region has experienced repeated crises in which both states have attempted to pursue limited objectives while remaining below the perceived nuclear threshold. Krepon (2005) describes this relationship through the stability–instability paradox, whereby nuclear weapons may discourage major war while simultaneously creating incentives for lower-level military challenges. Narang (2014) further demonstrates that regional nuclear strategies are shaped by differences in doctrine, force posture, escalation preferences, and perceptions of vulnerability. In the India–Pakistan context, deterrence stability is affected by doctrinal uncertainty, asymmetric conventional capabilities, tactical nuclear weapons, missile developments, technological modernization, and weaknesses in crisis communication. These factors can make it difficult for decision-makers to accurately interpret an adversary's intentions during periods of heightened tension. Consequently, nuclear deterrence should not be understood simply as the existence of nuclear weapons but as a broader system involving communication, strategic signaling, command and control, military doctrines, and political decision-making.

More recent scholarship has expanded the concept of security by examining the relationship between environmental stress and strategic stability. Climate change, changing precipitation patterns, glacier and snowmelt dynamics, population growth, and increasing demand for freshwater have the potential to intensify competition over shared river systems. In the Indus Basin, these challenges are particularly important because water resources are closely connected with agriculture, food security, energy production, livelihoods, and national economic stability. The World Bank (2018) notes that Pakistan faces substantial water-management challenges, including declining per-capita water availability and increasing pressure on the country's water resources. Environmental insecurity does not automatically produce military conflict, but it can interact with existing political tensions and reinforce perceptions of vulnerability. In the India–Pakistan context, therefore, water disputes may acquire strategic significance when they occur alongside territorial disputes, military competition, and nuclear deterrence. The securitization of water can transform technical disagreements into politically sensitive national-security issues. This is particularly important when one state perceives the other's infrastructure development or water-management policies as potentially threatening its long-term security. Despite the growing literature on water security, climate change, and nuclear stability, comparatively limited research directly examines the interrelationship between the Indus Waters Treaty and nuclear deterrence stability in South Asia. Existing studies tend to analyze water governance and nuclear strategy as separate fields rather than examining how changes in one domain may influence perceptions and calculations in the other. This study addresses this gap by integrating hydropolitics, environmental

security, and nuclear deterrence theory to investigate whether increasing water insecurity and institutional stress surrounding the IWT can affect strategic stability between India and Pakistan.

3. Theoretical Framework

This study employs three complementary theoretical approaches—Deterrence Theory, Security Dilemma Theory, and Complex Interdependence Theory—to explain the relationship between water governance and nuclear deterrence stability in South Asia. These perspectives are useful because the India–Pakistan relationship cannot be adequately understood through a single security framework. The interaction between nuclear weapons, mutual threat perceptions, and cooperation over shared water resources requires an approach that connects traditional military security with institutional and non-traditional security concerns.

Deterrence Theory provides the primary foundation for understanding nuclear stability between India and Pakistan. The central assumption of deterrence is that states can prevent aggression by maintaining the capability and willingness to impose unacceptable costs on an adversary. In the nuclear context, deterrence is primarily based on the expectation that any major attack would generate devastating retaliation, thereby making large-scale war irrational (Schelling, 1966; Morgan, 2003). The existence of nuclear weapons in South Asia has therefore contributed to strategic caution and has raised the costs of initiating a full-scale war. However, deterrence stability depends on more than the possession of nuclear capabilities. It also requires credible signaling, effective command and control, rational decision-making, reliable communication, and mechanisms for managing crises. Misperceptions or uncertainty can weaken deterrence by increasing the possibility that one state misinterprets the intentions of the other. From this perspective, tensions surrounding the Indus Waters Treaty can become strategically relevant if they contribute to broader threat perceptions between India and Pakistan.

Security Dilemma Theory provides a second important perspective. According to Herz (1950) and Jervis (1978), the security dilemma occurs when measures adopted by one state to improve its security are interpreted by another state as threatening. Because states cannot be completely certain about each other's intentions, defensive actions may generate fear, mistrust, and countermeasures. This dynamic is particularly significant in the India–Pakistan relationship, where military modernization and strategic infrastructure are frequently viewed through the lens of rivalry. The same logic can potentially apply to water infrastructure. Hydropower projects, dams, river-management activities, or changes in water-use patterns may be presented as developmental or defensive measures by one side but interpreted as strategic leverage by the other. Such perceptions can intensify insecurity even when the original action was not intended as an offensive measure. In a nuclearized environment, this dilemma becomes particularly significant because heightened conventional or resource-related tensions may interact with nuclear signaling and escalation calculations.

The third perspective, Complex Interdependence Theory, highlights the potential stabilizing role of institutions and cooperation. Keohane and Nye (2012) argue that relations among states involve multiple channels of interaction, including governmental institutions, technical agencies, economic actors, and transnational organizations, rather than being determined exclusively by military power. Under conditions of complex interdependence, institutions can facilitate communication, transparency, information exchange, and mutually beneficial cooperation. The Indus Waters Treaty represents an important example because it established permanent institutional mechanisms through which India and Pakistan can address technical disagreements without immediately converting them into political or military confrontations. The treaty's institutional arrangements

therefore have significance beyond water allocation; they can also function as confidence-building mechanisms by maintaining communication between rival states.

Taken together, these three theoretical approaches provide an integrated explanation of the relationship between water governance and nuclear stability. Deterrence Theory explains the role of nuclear capabilities in preventing large-scale conflict; Security Dilemma Theory explains how water-related and military actions can generate mutual suspicion; and Complex Interdependence Theory explains how institutions such as the Indus Waters Treaty can reduce tensions through sustained cooperation and communication. The weakening of such institutions may therefore have consequences beyond water management. If cooperative mechanisms deteriorate, technical disagreements may increasingly become securitized, reducing transparency and increasing uncertainty between the two nuclear-armed states. The study consequently argues that the resilience of the Indus Waters Treaty may indirectly contribute to nuclear stability by preserving communication, reducing misperception, and providing institutional alternatives to confrontation. Conversely, persistent institutional deterioration could reinforce the security dilemma and complicate crisis management, thereby creating additional pressures on strategic stability. This integrated theoretical framework allows the study to examine the IWT not merely as a water-sharing agreement but as a potentially significant component of the wider security architecture of South Asia.

4. The Strategic Importance of the Indus Waters Treaty

The Indus Waters Treaty (IWT) holds exceptional strategic importance in South Asia because the Indus River system is fundamental to Pakistan's agricultural economy, food security, energy production, industrial activity, and rural livelihoods. Pakistan is a predominantly arid and semi-arid country, and its agricultural productivity depends heavily on irrigation from the Indus Basin. Consequently, the availability, timing, and reliability of river flows have implications that extend beyond environmental management and directly affect national economic and strategic security. The World Bank (2018) identifies water scarcity, inefficient water use, population growth, climate variability, and increasing demand as major challenges for Pakistan's water sector. The strategic significance of the Indus Basin is further reinforced by the scale of its irrigation network, which constitutes one of the world's largest contiguous irrigation systems. Approximately four-fifths of Pakistan's irrigated agriculture is dependent on the Indus river system, making the protection of these water resources an essential national priority (Briscoe & Qamar, 2005). Any substantial disruption in water availability could potentially affect crop production, food prices, rural employment, hydropower generation, and overall economic stability.

The IWT, signed in 1960 between India and Pakistan with the facilitation of the World Bank, was designed to provide a stable institutional framework for managing the waters of the Indus river system. One of its most important achievements was the clear allocation of the six major rivers between the two countries. India received primary rights over the eastern rivers—Ravi, Beas, and Sutlej—while Pakistan received primary rights over the western rivers—Indus, Jhelum, and Chenab, subject to specific provisions concerning India's permitted uses. This allocation significantly reduced ambiguity concerning the basic rights of both states and established a legal framework for managing competing interests (Salman & Uprety, 2002). The treaty also established the Permanent Indus Commission, which provides a regular institutional channel for communication between Indian and Pakistani water officials. This mechanism is strategically important because it enables technical issues to be discussed through established procedures rather than allowing every disagreement to become a political or security crisis.

Another important feature of the treaty is its emphasis on information and data sharing. Regular exchange of hydrological and technical information can reduce uncertainty concerning river flows, infrastructure, and water utilization. In a relationship characterized by persistent political mistrust, such transparency is particularly valuable because uncertainty itself can contribute to threat perceptions. The treaty also provides mechanisms for inspections and the exchange of information regarding projects and river management activities. These provisions create opportunities for verification and clarification, thereby reducing the possibility that infrastructure developments will automatically be interpreted as hostile actions. From a security perspective, such institutionalized transparency can contribute to confidence building between two nuclear-armed states.

The treaty's multi-stage dispute-resolution mechanism is perhaps its most significant strategic feature. Disagreements can initially be addressed through the Permanent Indus Commission, while differences and disputes may, under specified circumstances, be referred to a Neutral Expert or a Court of Arbitration. This layered mechanism provides alternatives to unilateral action and military pressure. Alam (2002) argues that the treaty's institutional design has helped prevent water disputes from becoming direct sources of violent conflict, while Salman and Uprety (2002) emphasize the importance of its legal and procedural arrangements in maintaining cooperation. The treaty therefore transforms potentially sensitive disputes into structured technical and legal negotiations.

The strategic value of the IWT consequently extends beyond the physical distribution of water. It functions as a confidence-building and conflict-management institution within a highly militarized and nuclearized regional environment. By maintaining communication, facilitating information exchange, establishing predictable rules, and providing peaceful mechanisms for dispute settlement, the treaty reduces uncertainty between India and Pakistan. Its continued functioning can therefore contribute indirectly to strategic stability by preventing water-related disagreements from becoming additional triggers of military confrontation. Conversely, deterioration of these institutional mechanisms could increase mistrust and securitization of water resources, particularly as climate change and growing water demand place additional pressure on the Indus Basin. The IWT should thus be understood not merely as a water-sharing agreement but as an important component of the broader strategic and institutional architecture supporting stability in South Asia.

5. Nuclear Deterrence Stability in South Asia

Nuclear deterrence stability in South Asia is shaped by a complex interaction of political, military, technological, and psychological factors. Since India and Pakistan conducted nuclear tests in 1998, the strategic relationship between the two countries has increasingly been governed by the logic of nuclear deterrence. The basic premise is that the destructive consequences of nuclear war create strong incentives for both states to avoid full-scale conflict. However, nuclear deterrence has not removed the underlying sources of rivalry. Instead, it has produced a strategic environment in which states attempt to pursue limited political and military objectives while remaining below the threshold of large-scale nuclear escalation (Krepon, 2005; Narang, 2014). Consequently, deterrence stability in South Asia remains fragile and highly dependent on perceptions, signaling, communication, and the ability of political and military leaders to control crises.

The first major factor affecting strategic stability is the persistence of unresolved territorial disputes, particularly the Kashmir conflict. Kashmir remains one of the most sensitive issues in India–Pakistan relations and has repeatedly contributed to military confrontation and political crises. The 1999 Kargil conflict, the 2001–2002 military standoff, the 2016 Uri-related crisis, and the 2019 Pulwama–Balakot confrontation demonstrate that nuclear weapons have not prevented serious military escalation. Rather, both states have developed strategies for conducting limited

actions while attempting to avoid crossing perceived nuclear thresholds. This situation illustrates the stability–instability paradox, in which nuclear weapons may reduce the likelihood of total war while simultaneously allowing greater confidence in undertaking limited conventional operations (Krepon, 2005).

A second factor is the modernization of conventional and nuclear capabilities. Both India and Pakistan continue to develop more sophisticated missile systems, delivery platforms, surveillance capabilities, and nuclear force structures. Such developments can strengthen deterrence by improving survivability and retaliatory capabilities, but they can also increase uncertainty regarding escalation. Technological improvements may reduce warning times and create pressure on decision-makers to respond rapidly during a crisis. According to Narang (2014), differences in nuclear postures and strategic doctrines can significantly influence the stability of regional deterrence relationships. The development of tactical or battlefield nuclear capabilities by Pakistan has further complicated calculations because it potentially lowers the perceived threshold between conventional and nuclear conflict.

A third factor concerns evolving military doctrines and strategic signaling. India's development of concepts associated with rapid and limited conventional operations, often discussed in relation to the Cold Start doctrine, has generated concerns in Pakistan about the possibility of limited conventional attacks under the nuclear umbrella. Pakistan's development of short-range nuclear delivery systems has been interpreted partly as an effort to strengthen deterrence against such scenarios. These reciprocal developments illustrate the security dilemma: measures adopted by one state to increase its security may be perceived by the other as threatening, prompting countermeasures and reinforcing strategic competition (Jervis, 1978). The result is a complex deterrence relationship in which intentions are difficult to distinguish from capabilities.

6. Interplay Between Water Security and Nuclear Deterrence

The relationship between water security and nuclear deterrence is indirect but strategically important. Water disputes do not automatically create nuclear confrontation, and there is no deterministic relationship between water scarcity and war. However, in an already adversarial nuclear environment, water insecurity can reinforce existing threat perceptions, political mistrust, and crisis dynamics. The interaction can be understood through four major mechanisms: the strategic significance of water, crisis escalation, psychological perceptions, and climate change.

6.1 Water as a Strategic Resource

Water is an essential resource for agriculture, food production, energy generation, industrial activity, and human livelihoods. For Pakistan, the Indus Basin has particular strategic importance because a substantial proportion of agricultural production and irrigation depends on its river system. Consequently, concerns about future water availability can become associated with broader national-security considerations. When water is perceived as essential to national survival, changes in river flows, dam construction, or disagreements over treaty interpretation can acquire strategic rather than purely technical significance. This process can contribute to the securitization of water, whereby an environmental or resource issue becomes framed as a national-security threat. In the context of India–Pakistan relations, such perceptions may strengthen existing suspicions and influence wider strategic calculations (Alam, 2002; World Bank, 2018).

6.2 Crisis Escalation

Water-related disputes can potentially contribute to crisis escalation when they occur simultaneously with broader political or military tensions. A disagreement over a hydroelectric

project or interpretation of treaty provisions may initially involve technical and legal questions, but deteriorating bilateral relations can transform such disagreements into politically charged disputes. If political leaders or security institutions perceive water management activities as deliberate attempts to increase strategic vulnerability, the issue may become linked with broader military planning. This does not mean that water disputes directly lead to nuclear conflict; rather, they can add another layer of tension to an already fragile deterrence relationship. The existence of institutional mechanisms within the Indus Waters Treaty is therefore important because they provide alternative channels through which disagreements can be addressed before they become securitized.

6.3 Psychological Dimensions

The psychological dimension of water security is particularly important because perceptions of insecurity may be more consequential than immediate physical shortages. Even when actual river flows have not significantly declined, uncertainty about future water availability, upstream infrastructure, or treaty implementation can generate anxiety and mistrust. In security dilemma terms, uncertainty about another state's intentions encourages worst-case assumptions (Jervis, 1978). Consequently, perceptions that water could potentially be used as strategic leverage may influence public opinion, political rhetoric, and national-security planning. Maintaining transparent information-sharing mechanisms and regular communication is therefore essential for preventing technical disagreements from becoming broader security crises.

6.4 Climate Change

Climate change represents a long-term factor connecting water security with strategic stability. Changes in temperature, glacier and snow dynamics, precipitation patterns, droughts, floods, and extreme weather events may alter the availability and timing of water within the Indus Basin. The World Bank (2018) emphasizes that Pakistan faces significant water-management challenges associated with growing demand, climate variability, and declining per-capita water availability. These pressures make cooperation increasingly important. Climate-induced uncertainty may also increase the value attached to reliable water institutions because both countries will require greater predictability in managing shared river systems. Thus, rather than treating climate change solely as an environmental issue, it is important to examine its implications for regional security and strategic stability.

Overall, the relationship between water security and nuclear deterrence should be understood as a risk-amplification relationship rather than a direct causal relationship. Water disputes may become strategically significant when they interact with territorial rivalry, military competition, political mistrust, and weak crisis-management mechanisms. The Indus Waters Treaty can therefore serve an important stabilizing function by maintaining institutional communication and providing peaceful mechanisms for resolving disagreements. Preserving such cooperative arrangements is particularly significant in a nuclearized region where seemingly limited disputes can become more dangerous when combined with existing strategic tensions.

7. India's Suspension of Participation and Strategic Implications

India's announcement in April 2025 that it was placing the Indus Waters Treaty (IWT) in abeyance represented a major disruption to one of the most durable institutional arrangements in India–Pakistan relations. The decision followed the April 22, 2025, Pahalgam terrorist attack in Indian-administered Jammu and Kashmir and the subsequent deterioration of bilateral relations. India announced that the treaty would remain in abeyance until, among other conditions, Pakistan took

what India described as credible and irreversible action against cross-border terrorism. Pakistan rejected India's position and maintained that the treaty contains no provision allowing one party to unilaterally suspend or terminate its obligations in this manner.

The importance of this development lies not only in its immediate legal and diplomatic implications but also in its potential effect on the broader security environment of South Asia. The IWT had survived the wars of 1965, 1971, and 1999 and continued to provide institutional channels for communication even when political relations were severely strained. Its suspension therefore represents a significant departure from the established pattern in which water cooperation was kept relatively separate from wider bilateral disputes. The interruption of treaty-related cooperation can weaken established procedures for data exchange, technical consultations, inspections, and the management of disagreements. In a relationship already characterized by nuclear competition and limited strategic trust, the loss of regular institutional communication may increase uncertainty about the intentions and future actions of the other side.

The first major strategic implication is reduced institutional communication. The Permanent Indus Commission has historically provided a structured mechanism through which Indian and Pakistani officials could discuss technical water issues without requiring high-level political negotiations. If these channels remain inactive or become significantly weakened, relatively technical disagreements may have fewer opportunities for early clarification. This is important because uncertainty is itself a major source of instability in security relationships. When information is incomplete, governments may rely increasingly on worst-case assumptions about an adversary's intentions. The weakening of established water institutions can therefore indirectly reinforce the security dilemma between India and Pakistan.

Second, the development creates greater uncertainty during political and military crises. India's immediate physical ability to substantially change Pakistan's water availability remains constrained by the geography of the Indus Basin, existing infrastructure, storage limitations, seasonal river flows, and the technical provisions governing water use. Analysts have therefore cautioned against interpreting the suspension as an immediate capacity to "turn off" Pakistan's water supply. Nevertheless, the political signaling associated with the decision can have strategic consequences even when immediate physical effects are limited. Pakistan may become more concerned about future upstream infrastructure development, while India may view its control over upstream water infrastructure as an increasingly important component of its strategic leverage.

Third, the suspension can contribute to the securitization of water resources. Historically, many disagreements under the IWT were addressed through legal, technical, and institutional procedures. If water becomes increasingly connected with terrorism, national sovereignty, military security, and bilateral retaliation, technical questions may become interpreted through a national-security lens. This transformation is particularly significant for Pakistan because the Indus Basin is central to its agricultural production, food security, and economic activity. Consequently, perceptions of potential water insecurity may generate political pressure even when actual short-term water availability has not substantially changed.

Fourth, the development may increase diplomatic confrontation and misperception. In an already hostile bilateral environment, statements concerning water can be interpreted as signals of broader strategic intentions. Such perceptions can produce reciprocal responses, increasing the possibility of an action-reaction cycle. Security dilemma theory is particularly relevant here: a measure presented by one state as defensive or retaliatory may be interpreted by the other as preparation for coercion. The danger is not necessarily that water competition will directly produce nuclear

conflict, but that it can add another contentious issue to a relationship already affected by territorial disputes, military competition, and nuclear deterrence.

8. Policy Recommendations

To strengthen regional stability, several policy measures are recommended:

1. Restore structured bilateral dialogue on water governance.
2. Reactivate technical cooperation through the Permanent Indus Commission.
3. Expand real-time hydrological data sharing.
4. Modernize treaty provisions to incorporate climate adaptation.
5. Strengthen crisis communication mechanisms between military and civilian leadership.
6. Encourage third-party technical facilitation where mutually acceptable.
7. Integrate environmental security into broader confidence-building measures.
8. Promote Track-II and Track-1.5 dialogues among experts and former officials.
9. Enhance joint flood forecasting and disaster management cooperation.
10. Separate humanitarian water issues from broader political disputes wherever possible.

9. Conclusion

The Indus Waters Treaty has historically served as far more than a technical water-sharing agreement. It has functioned as an important stabilizing institution within one of the world's most dangerous nuclear rivalries. While nuclear deterrence has contributed to preventing full-scale war, its effectiveness depends upon communication, predictability, and institutional confidence. Weakening the treaty increases uncertainty and may intensify existing security dilemmas, especially when combined with climate change, political mistrust, and recurring crises.

The future of strategic stability in South Asia therefore depends not only upon military doctrines and nuclear capabilities but also upon effective management of shared natural resources. Sustainable peace requires preserving cooperative institutions, strengthening crisis-management mechanisms, and recognizing that environmental security and strategic security are increasingly interconnected. The preservation and modernization of the Indus Waters Treaty should thus be viewed as an essential component of long-term regional peace and nuclear stability.

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