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## **Impact of Climate Change on Border Disputes: A Case Study of Pakistan-India Conflict Hinna Rustam**

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### **ABSTRACT**

*In international system, states have been facing another form of security threats which is commonly known as non-traditional/non-conventional security threats. One of the attentions seeking non-traditional security threat is climate change. This phenomenon has been deteriorating the relations amongst/between states. Climate change can not be cured by efforts of just one or group of states. All the states should pay equal attention to eradicate such menace. There are certain regional and international forums, which particularly have been working on the mitigation of affects of climate change on state's relations. Climate change has been escalating the conflict between Pakistan and India. Due to climate change, irregularity in glacier melting, construction of dams, violation of treaty of world bank (water crisis treaty) further adding fuel to border disputes between both states. Pakistan and India also joined the conference of party (COP) on climate change but still needs attention to resolve the issues caused by climate change. This study investigates that how climate change impact border disputes between Pakistan and India? To find out answer to this question the scholar has used qualitative method and it is found that climate change has intensified the relations between both neighboring countries by provoking treaty violations, dams' politics and water scarcity, in this manner deteriorating mutual skirmish in spite of international mitigation efforts.*

**Keywords:** Climate Change, Border Disputes, India and Pakistan.

### **Introduction**

The evolution of International Relations in the post-Cold War era has showed that, alongside conventional military concerns, non-traditional security challenges now play a crucial role in shaping the overall strength and security of states. Among all the looming problems, non-traditional security threats are most emerging problem at global and regional level. Non-traditional security threats those that undermine human survival and societal well-being through non-military means. It encompasses challenges such as climate change, resource depletion, infectious diseases, natural disasters, irregular migration, food insecurity, human smuggling, drug trafficking, and other forms of transnational crime. Due to their transboundary nature, these threats are difficult for individual states to manage independently and require coordinated political, economic, and social responses, alongside limited humanitarian military interventions when necessary (Ul Hassan, Hussain, Ul Haq, Ali,

& Ismail, 2024). Similar to other South Asian states, Pakistan continues to confront numerous non-traditional security challenges that impede its socio-economic development, undermine financial stability, and disrupt political balance. The country is particularly susceptible to environmental degradation, with climate change posing serious implications for its economy and global trade linkages. Overall, non-traditional security threats significantly hinder human development in developing states such as Pakistan.

Pakistan ranks among the countries most severely affected by climate change, despite contributing minimally to its global causes. The country's rapidly expanding population and accelerated development pressures have intensified environmental degradation, while simultaneously exacerbating economic vulnerabilities and social challenges (Javid & Magsi, 2022). Climate change has emerged as a significant global environmental security threat. Rising global temperatures, driven by the emission of harmful greenhouse gases such as chlorofluorocarbons, carbon dioxide, nitrous oxide, and methane, are altering the earth's climate system. These emissions not only endanger human health but also disrupt ecosystems, biodiversity, and marine life. The consequences include increasing average temperatures, rising sea levels, the accelerated melting of glaciers and polar ice sheets, shifts in rainfall patterns, prolonged droughts, and the rapid loss of species. Given its scale and complexity, climate change now constitutes one of the most severe security challenges facing states and regions worldwide and is widely regarded as a major indirect threat to national security (V. K. Sivakumar & Stefanski, 2010).

The discourse on climate change has evolved from viewing it merely as a "threat multiplier" to recognizing it as a "potential threat" in its own right, particularly in highly vulnerable regions such as South Asia. Earlier U.S. assessments highlighted water scarcity as a driver of intrastate tensions, especially along ethnic and communal lines. However, more recent analyses have shifted attention toward the strategic use of shared river systems, warning that states may employ transboundary water resources as tools of political leverage to secure their national interests. The National Intelligence Estimate has warned of a "medium risk" of cross-border water disputes and related instability up to 2030, escalating to a "high risk" by 2040. Within this context, Pakistan, India, and Afghanistan have been identified as among the most at-risk states, given their acute vulnerabilities to climate-induced water stress and geopolitical tensions (Hussain, 2022).

The climate crisis is exerting profound impacts across South Asia, with Pakistan among the region's most vulnerable states. Both Pakistan and India rely heavily on the Himalayan mountain system and its extensive network of glaciers, the largest outside the polar zones. These glaciers, however, are melting at an accelerated rate, leading to the formation of thousands of glacial lakes, several of which present significant risks of downstream flooding. The continued loss of glacial mass threatens long-term water availability in both countries. Additionally, rising temperatures in the Indian Ocean are altering weather systems and endangering fisheries. Across the region, increasing heat levels are projected to adversely affect diverse sectors, disrupt ecological stability, and pose serious risks to human health (Ali, 2025).

### Theoretical Framework

In international relations, theories play significant part in explaining and justifying the certain issues. Theories provide intellectual foundations for the elaboration of events. Among all the theories, the most suitable theory for the research topic "*Impacts of Climate Change on Borders Disputes: Case Study of Pakistan-India Conflict*" is constructivism. During the 1980s, the central focus of what became known as the Third Great Debate in International Relations revolved around a theoretical divide between rationalist scholars and early critical theorists. Within this context, Robert Keohane acknowledged the growing prominence and legitimacy of an alternative perspective in his 1988 address to the International Studies Association, which he described as "reflectivist." This intervention signaled an important shift in theoretical discussions within the discipline. Over the decades, debates between rationalist and constructivist scholars increasingly came to dominate theoretical discourse, particularly as the constructivist approach gained substantial traction throughout the 1990s. As a result, constructivism emerged as a key framework shaping contemporary analyses in International Relations (Jung, 2019).

Nicholas Greenwood Onuf is widely recognized as the first scholar to formally introduce the concept of constructivism into International Relations theory in 1989. He argued that states, much like individuals, operate within a "world of our own making," emphasizing that many aspects of international politics are socially produced rather than naturally given. In this perspective, phenomena such as norms, rules, and institutions constitute "social facts" that come into existence through human interaction, in contrast to "brute facts," which exist independently of social recognition and are rooted in the material conditions of human life. Because constructivism initially developed as a broader metatheoretical framework concerned with the nature of social reality and knowledge production (Searle, 1995). Constructivism conceptualizes the international system as a social structure and advances several foundational propositions.

First, it treats states as the primary actors within international political analysis. Second, it emphasizes that the most significant structures shaping international politics are social and intersubjective in nature, rather than purely material. Third, constructivism argues that state identities and interests are not fixed or predetermined; instead, they are shaped and continually reshaped through interaction within these social structures. This position contrasts with neorealist assumptions that attribute state interests to human nature and with neoliberal perspectives that locate their origins primarily in domestic political processes (Behraves, 2011). According to constructivism, Climate change as a security threat is socially constructed. Every state has been tackling with this menace with different policy frameworks. Their approach and agenda to deal with climate as security threat is different. It varies from state to state. As according to constructivism, social behavior, historical context, identity, cultural values and norms determine the policies of states. Similarly, in case of climate change, each state has been formulating policy according to their social behavior. In case impact of Climate change on Pakistan-India conflict, environmental challenges have been considered differently by both states. Different political responses have been made from both sides. In this case study, the historical context and ideological difference shape, how climate change affects the relations between both states. Worth-mentioning, impacts of climate change are

closely linked with water and territorial disputes between Pakistan and India. Here, the climate change does not directly deteriorate the relations between Pakistan and India, but their identity and threat perception create the link between climate change and border dispute.

### **Climate Change and Environmental Transformation in South Asia**

Climate change has become a defining challenge for communities across South Asia. Home to roughly one-fifth of the world's population, the region is increasingly experiencing climate-induced disasters, including floods, droughts, heatwaves, and cyclones. South Asia also contains some of the world's poorest populations, many of whom lack the resources needed to cope with rapidly shifting climatic conditions. Agriculture still a major source of employment in the region remains one of the most severely affected sectors. In several areas, climate change threatens to render agricultural activities unsustainable. Altered monsoon patterns have further undermined agricultural reliability, making it difficult for farmers to secure stable incomes. In response, various climate adaptation initiatives have been launched across the region to address the growing risks posed by climate change (Garimella, 2023). Climate change is likely to intensify instability across South Asia, with border regions expected to face heightened vulnerabilities and security pressures ( Malji, Obana, & Hopkins, 2022). Climate change is significantly accelerating glacier retreat across South Asia by altering regional temperature and precipitation patterns. Rising concentrations of greenhouse gases are disrupting the hydrological cycle, reshaping both thermal conditions and rainfall distribution across the region. According to projections by the World Bank, increasing temperatures and shifting monsoon dynamics could reduce the living standards of nearly half of South Asia's population by 2050 ( Mani , 2018). Consequently, stabilizing glacier loss and ensuring long-term water security in the region cannot be achieved without coordinated global efforts to mitigate climate change. Beyond rising temperatures, however, climate change is not the sole contributor to rapid ice loss in the Hindu Kush-Himalayan region. Emerging research indicates that anthropogenic black carbon accounts for more than half of the observed acceleration in glacier and snow melt. Black carbon originates from incomplete combustion associated with industrial activity, vehicle emissions, biomass burning, and forest fires. When deposited on glacier surfaces, it reduces surface reflectivity, enhances solar absorption, and increases atmospheric warming, thereby intensifying ice melt. Unlike long-lived greenhouse gases, black carbon can be rapidly removed from the atmosphere once emissions cease, highlighting the potential of targeted local pollution-control policies to slow glacier retreat.

### **Historical Perspective: Pakistan-India Border Disputes**

#### **Kashmir Conflict: Bone of Contention between Pakistan and India**

Conflicts between states often draw in external powers seeking either to manage the dispute or advance their own strategic interests. Although war is one of the earliest forms of conflict resolution, it persists due to the strategic importance of certain geopolitical regions. Political disputes that escalate into armed conflict seriously undermine national and global security by damaging health systems, economies, education, energy security, and food supply chains, with developing countries suffering the most. When such conflicts involve nuclear-armed states, they become a major concern for the international community. The Kashmir region

represents one of the world's most critical geopolitical flashpoints, located at the intersection of three nuclear powers India, Pakistan, and China and adjacent to Afghanistan, which links South and Central Asia with the broader Eurasian region ( Imširović , 2021).

Kashmir holds a distinct geopolitical significance, further reinforced by Pakistan's and India's access to the Arabian Sea, which connects both states directly to major maritime trade routes and the Persian Gulf. The rapid expansion of globalization has further enhanced the strategic value of both sea and land corridors linked to this region. The Kashmir dispute between India and Pakistan dates back to 1947 and has resulted in three major wars, with both states asserting full sovereignty over the territory (Narasiman, 2025). The first war ended through a United Nations-brokered ceasefire that established a temporary demarcation known as the Line of Ceasefire. Subsequent conflicts in 1965 and 1971 led to the Simla Agreement, which formally defined the Line of Control between the two sides. Although limited fighting again occurred during the Kargil conflict in 1999, it did not alter the territorial status quo. Pakistan's emergence as a nuclear power in the mid-1990s further reshaped the strategic balance between the two rivals (Gilmartin, 2015).

Moreover, Kashmir is well-defined by the towering Himalayan landscape, situated at the intersection of the Hindu Kush and Tibetan mountain systems, and is renowned for its striking natural beauty. The region's high-altitude mountains and glaciers feed major rivers, including the Jhelum, Chenab, and Indus, which sustain fertile agricultural lands within Kashmir and far downstream. These river systems serve as a critical source of freshwater for both India and Pakistan, making them indispensable to human life, food production, and ecological stability across the subcontinent (Narasiman, 2025).

### **Siachen Glacier Dispute**

The Siachen Glacier, recognized as the world's highest battlefield, has remained a zone of confrontation between India and Pakistan for over two decades, resulting in hundreds of fatalities primarily due to extreme weather conditions and the harsh mountainous environment rather than direct combat. Beyond human losses, the prolonged deployment has imposed a substantial financial burden on both states. Despite repeated acknowledgments by both sides of the heavy costs in terms of lives and resources, multiple rounds of negotiations have failed to produce a lasting resolution, largely due to deep-rooted mistrust and enduring political hostility ( Misra , 2010).

Although some scholars have dismissed the Siachen dispute as trivial, a closer analysis reveals its profound geopolitical importance. As the world's largest glacier outside the polar regions, Siachen supplies vast volumes of meltwater to the Indus River system, making it strategically vital for Pakistan, which depends on the Indus for the majority of its irrigation and drinking water needs. For India, control of Siachen serves as a critical strategic buffer against potential Sino-Pakistani coordination, as dominance over the glacier provides leverage over the China-Pakistan Economic Corridor and Pakistan-administered Kashmir. This position restricts further Chinese expansion into the Kashmir region and strengthens India's northern defensive posture, while also granting India diplomatic leverage linked to Pakistan's water security (Shajan, 2025). China's strategic involvement intensified after Pakistan transferred the Shaksgam Valley to Beijing under the 1963 China-Pakistan Agreement, placing Chinese interests in close proximity to Siachen. Indian control of the glacier consequently places

strategic pressure on China's position in Aksai Chin, its investments under the Belt and Road Initiative, and its military presence in Tibet. As a result, Siachen's importance now extends well beyond South Asia, symbolizing the balance of power among three nuclear-armed rivals (Liaqat, 2018).

### **Transboundary Water Disputes: Water Dispute between India and Pakistan**

Water is the foundation of life on Earth, sustaining all ecosystems, economies, and human societies, yet it does not conform to political boundaries. Flowing freely across borders, shared water resources increasingly lie at the center of international relationships and regional stability. As global interconnectedness deepens, competition over water has intensified, generating tensions among neighboring states. Transboundary water disputes have thus emerged as a major contemporary challenge, shaped by intertwined geopolitical, economic, and environmental pressures. The governance of shared water systems is further complicated by competing national interests, the tension between conflict and cooperation, socio-economic disparities, climate change impacts, unequal power relations, stakeholder participation, and the need for integrated management approaches (Azizi & Leandro, 2025). Water-related tensions between India and Pakistan have mirrored the broader political relationship between the two states since the partition of British India in 1947, which fragmented an otherwise interconnected hydraulic system. In the decades that followed, recurring political and strategic rivalries gave rise to strong forms of "water nationalism" in both countries. At various points, political groups and public actors in each state have called for the termination of the IWT of 1960; however, neither government has taken concrete steps in that direction. Notably, the IWT has endured despite two major wars in 1965 and 1971, a limited conflict in 1999, and several periods of intense political and military confrontation, including those in 1987, 1989–90, 2002, and 2008 (Ranjan, 2016).

The Indus River, one of the world's largest rivers, plays a vital role in Pakistan's economy and agriculture. Originating from Mansarovar Lake in Tibet and fed by Himalayan glaciers, it flows through Jammu and Kashmir before entering Pakistan's Gilgit-Baltistan region and eventually draining into the Arabian Sea. The river's extensive network of tributaries includes the Kabul and Kurram rivers on the right bank, and the Jhelum, Chenab, Ravi, Beas, and Sutlej rivers on the left bank. While the heads of the Jhelum and Chenab rivers lie in the disputed territory of Kashmir, the Sutlej, Ravi, and most of the Beas originate in India. The Indus system not only supports irrigation and agriculture but also enhances the ecological and scenic value of the regions it traverses (Bashir, 2024). For over seven decades since their separation, Pakistan and India have struggled to establish a cooperative relationship, particularly amid growing concerns over water scarcity. The management of shared river resources poses a potential flashpoint for future conflicts, highlighting the need for sustained peace initiatives to reduce tensions. Water disputes have fostered mistrust between the two nations, and negotiating a more effective and mutually beneficial agreement could help ease these pressures. Historically, disagreements over Kashmir and water have contributed to four wars between the countries. Pakistan contends that India exercises control over upstream water sources to its detriment, while India rejects these claims and continues to affirm its commitment to the IWT (Azizi & Leandro, 2025).

### **Climate Change as a Catalyst in Pakistan-India Border Disputes**

Environmental security has emerged as a crucial dimension in the analysis of contemporary conflicts, as it highlights the interaction between ecological challenges, natural resource governance, and regional stability. Its relevance has grown significantly as climate change increasingly intersects with the Pakistan-India water dispute. Variations in the availability and quality of shared water resources have the capacity to alter regional environmental security dynamics, potentially deepening existing tensions and increasing the risk of conflict. South Asia's interconnected river systems, fragile institutional mechanisms for water sharing, and growing vulnerability to climate change, environmental security has become a critical factor in the broader strategic conflict between Pakistan and India. This perspective recognizes human activities, climate change impacts, and the rapid depletion of natural resources as potential drivers of future tensions and conflict ( Zahoor & Huma, 2024).

The relationship between climate change and conflict is highly complex and context-specific, with water frequently employed as a strategic instrument within broader political and military confrontations. Historical cases demonstrate how states have used the control of water flows as a tool of pressure, including disruptions along the Euphrates River, freshwater cut-offs to Gaza, and India's suspension of water supplies to Pakistan in 1948 during the Kashmir conflict. Within the Indus River Basin, climate change is intensifying inconsistency and volatility in river flows. Such unpredictability rather than absolute scarcity poses a greater risk for water-related conflict, as existing institutions struggle to manage increasing uncertainty ( Shidore, 2020). A major climate-related disaster within the Indus River Basin, such as extreme flooding combined with upstream dam releases in Indian-administered Kashmir, represents one of the most probable environmental triggers of Indo-Pakistani tension.

Particularly, if Pakistan perceives intentional manipulation of water flows. However, water and climate change primarily act as force multipliers rather than root causes of the rivalry, which is fundamentally shaped by historical, ideological, and territorial disputes. While shared water resources often encourage cooperation, climate-induced uncertainty and variability, when combined with deep political hostility, can heighten the risk of confrontation (Shread-Hewitt, 2025). Current regional dynamics suggest that any major escalation is more likely to be triggered by a terrorist attack or a border incident in Kashmir potentially targeting military assets, civilians, or hydropower infrastructure rather than by climate change alone. However, climate-driven pressures on the Indus Waters Treaty further strain an already fragile peace and increase the probability of conflict (Irfan, Aftab , & Yaqoob, 2025).

### **Glacier Melt and Its Implications for the Siachen and Kashmir Sectors**

The Siachen Glacier, once a flourishing valley, has been transformed into a vast frozen battlefield. Stretching over approximately seventy-six kilometers at an elevation of nearly 5,000 meters above sea level, it is the longest glacier in the Karakoram range and among the largest outside the polar regions. Owing to its size and strategic location, Siachen plays a significant role in regional and global climatic processes. However, the glacier has become one of the world's most hostile and costly military zones, where extreme weather conditions pose constant risks to deployed forces. Beneath the strategic confrontation lies a severe environmental crisis, as prolonged military presence has caused extensive ecological damage. Waste accumulation, particularly non-biodegradable material, along with the use of heavy

machinery and explosives, has accelerated glacial melting, destroyed vegetation, and disrupted wildlife habitats, thereby intensifying climate-related risks (Ayaz, 2024).

For Pakistan, the degradation of the Siachen Glacier is not only an environmental threat but also a warning of grave human consequences. The Nubra River originates from the glacier and flows through the Ladakh region before merging with the Shyok River, ultimately contributing to the Indus River system. These waters are essential for sustaining agriculture, industry, and daily life for millions of people downstream in Pakistan. Any significant reduction in water availability due to accelerated glacial melt threatens to trigger severe water shortages and a potential humanitarian crisis, placing millions of lives and livelihoods at risk (Shidore, 2020). The Indus River Basin relies heavily on water generated from snowmelt and glacial runoff in its upper reaches. The influence of global warming on water availability has intensified debates centered on “rights versus needs” among downstream users. Climate change has already contributed to declining river flows, with projections suggesting that several rivers in the basin could become increasingly seasonal by the 2040s. Rising temperatures have accelerated glacial melting, while the increased sediment load carried by meltwater has reduced the storage capacity of reservoirs on both sides of the basin, further constraining water availability (Chaturvedi, 2018).

#### **Altered River Systems and Transboundary Water Insecurity**

Rivers naturally transcend political boundaries as they flow through their physical channels, often giving rise to transboundary water disputes between states. To manage such tensions, countries rely on treaties and cooperative water-sharing arrangements. In the Indian subcontinent, Pakistan has growing concerns regarding the volume of water in the western rivers, particularly due to the increasing number of dams constructed or planned by India on these shared waterways (Ul Haq, Ahmad, & Khan, 2024). Water-sharing disputes emerge when access to water is neither equitable nor sufficient to meet collective needs. In Pakistan, water scarcity has been a persistent challenge since independence, driven by a combination of economic pressures, rapid population growth, weak policy implementation, inefficient resource management, and growing environmental stress. While population increase contributes to water stress, climate change has further intensified the problem through reduced snowfall and accelerated glacier melt in the Himalayan region, leading to a decline in annual water inflows to the Indus River System. This reduction has directly affected the availability of water for both drinking and agricultural use (Imran & Asif, 2023).

As an agrarian economy, Pakistan relies heavily on irrigation, yet only about 54.4 million acres of its 77.1 million acres of cultivable land are currently farmed, leaving a significant portion unused due to inadequate water availability and storage capacity. Although Pakistan has developed one of the world’s largest irrigation networks, including multipurpose dams, barrages, and an extensive canal system, the persistent imbalance between water demand and supply has resulted in competition over scarce resources. This strain has contributed to environmental degradation and a continuous decline in groundwater levels across the country (Munir, Khalid, & Shahrukh, 2021). Under the provisions of the Indus Waters Treaty, India is permitted to construct run-of-the-river hydropower projects, which generate electricity without large dams or extensive water storage by utilizing the natural flow and elevation of rivers.

Most of India's hydropower structures on the Indus, Chenab, and Jhelum rivers fall within this category. However, from Pakistan's perspective, these projects carry serious downstream implications. Pakistani authorities have repeatedly expressed concerns that such infrastructure could enable India to regulate water flows entering Pakistan and, in extreme circumstances, store water during dry periods and release it during wet seasons. Analysts argue that if all planned Indian projects were completed, India could acquire the capacity to temporarily withhold a significant volume of river water during Pakistan's critical agricultural season, potentially disrupting crop cycles (Salik, 2016). These projections reinforce Pakistan's fears that upstream control over water resources could, in the future, be used as a strategic tool affecting its agricultural heartland.

Worth-mentioning, it has been observed that Pakistan's objections to India's run-of-the-river projects are primarily based on alleged violations of the design standards specified in the IWT, as well as the construction of storage structures on the western rivers. While Pakistan remains open to technically sound justifications from the Indian side, it maintains that it will not compromise on the legal rights guaranteed under the treaty. In addition to legal concerns, several Indian projects have produced adverse transboundary consequences for Pakistan by affecting river ecology and reducing hydropower generation potential, as illustrated by the challenges faced by the Neelum-Jhelum hydropower project (Imran & Asif, 2023). Contemporary, growing demographic pressures, economic stress, and environmental challenges have further deepened mistrust between the two countries, heightening tensions and posing serious risks to regional stability.

#### **Natural Disasters and their Impacts on Pakistan-India Relations**

Pakistan and India share similar geographic, climatic, and environmental characteristics, which makes both countries equally vulnerable to natural disasters. Cross-border hydro-climatic hazards and seismic activities have repeatedly caused significant losses on both sides. While political tensions restrict the movement of people, goods, and transport across their borders, climate-related risks transcend political boundaries and affect both nations alike. Pakistan is particularly exposed to flash floods and earthquakes, whereas India faces a wider range of hazards, including earthquakes, tsunamis, floods, droughts, and cyclones. Across South Asia, intensified monsoon rainfall and recurrent flooding in recent years have caused widespread destruction, reversing development gains and worsening challenges related to poverty and food security (Ahmad, 2018).

In June 2023, Cyclone Biparjoy struck the coastlines of India and Pakistan, but timely disaster preparedness measures in both countries helped reduce casualties and damage. While the effective response highlighted the importance of mitigation strategies, it also exposed the absence of meaningful bilateral cooperation despite shared climate risks. Although platforms such as the Permanent Indus Commission demonstrate limited collaboration, similar mechanisms for climate change and disaster management remain underdeveloped. The largely isolated response to the cyclone reflected persistent political mistrust, underscoring the need for future joint action to address escalating climate-related threats (Banerji & Qazi, 2023). South Asia is an ecologically fragile region increasingly exposed to climate-induced disasters such as flash floods, landslides, cloudbursts, and Glacial Lake Outburst Floods (GLOFs) caused by accelerated glacier melt. Pakistan and India lie at the center of these risks,

which intensify existing environmental and security challenges. These threats can be better managed through stronger use of existing bilateral frameworks such as the Indus Waters Treaty and the Rann of Kutch Agreement. Establishing a shared environmental data-sharing mechanism for real-time warnings on floods, heatwaves, droughts, cyclones, and GLOFs would significantly enhance disaster preparedness. In addition to this, cooperation through international platforms such as COP, IPCC, SAARC, and third-party institutions could strengthen regional climate resilience ( Mukherjee, 2025).

### **Climate Change: Driver of Border Militarization**

Many scholars contend that climate change may intensify armed conflicts by exacerbating resource scarcity and triggering mass migration, potentially leading to disputes over resource-rich territories and weakening state stability. Homer-Dixon, a prominent scholar in this field, has argued that such environmental stressors could contribute to insurgencies, genocides, guerrilla warfare, organized crime, and global terrorism ( Homer-Dixon, 2007). This risk is particularly pronounced in the world's poorest and most vulnerable countries, which are expected to bear the brunt of climate change impacts. Consequently, militaries worldwide are increasingly recognizing climate change as a critical national security concern. Robert Kaplan, renowned scholar once said "Future conflicts are likely to revolve around the struggle for communal survival, often intensified or driven by environmental resource scarcity. Such conflicts will predominantly be subnational, making it increasingly difficult for states and local authorities to ensure the physical protection of their populations. In many cases, this vulnerability may contribute to the eventual weakening or collapse of state structures" ( D. Kaplan, 1994).

Moreover, Climate change acts as a "threat multiplier," intensifying existing stresses and increasing the likelihood of conflict. Its impacts including natural disasters, rising sea levels, and resource scarcity can undermine livelihoods, weaken economies, heighten competition for limited resources, and drive forced migration. These pressures often exacerbate poverty, social unrest, and political instability, prompting heavy-handed government responses and creating conditions conducive to violence. Armed conflict, therefore, can be seen as a secondary consequence of climate change, with the risk particularly pronounced in fragile states with weak governance ( Malik, 2020).

In May, 2025, tensions between nuclear-armed neighbors India and Pakistan briefly eased after both sides agreed to halt days of aerial and artillery exchanges triggered by a militant attack on tourists in disputed Kashmir. However, while the military escalation subsided, the longstanding conflict over shared water resources quickly resurfaced. After the April 22<sup>nd</sup>, attack that claimed 26 lives, India announced the suspension of its participation in the IWT. It is decades-old agreement regulating water distribution between the two countries. In response, Pakistan warned that any attempt to restrict Indus water flows on which the majority of its agriculture depends would be regarded as an act of war. Analysts argue that this episode underscores not only the treaty's political sensitivity but also the urgent necessity of updating it in light of climate change pressures and rapid population growth ( Pathak, 2025).

### **Climate-Induced Displacement and Security Pressures**

There exists a strong causal linkage between climate change, rapid urbanization, forced migration, and violent conflict, which ultimately undermines the rule of law. Environmental stress and social fragmentation are being intensified by large-scale displacement, particularly among rural populations and marginalized communities, alongside rapid population growth. The devastating floods of 2022 alone displaced approximately 7.9 million individuals, while in Sindh province more than 88,000 people remained displaced by March 2023. The destruction of rural livelihoods and lack of basic services continue to force affected populations toward urban centers in search of shelter and employment (Khan, 2023). Moreover, Pakistan is experiencing one of the fastest urbanization rates in South Asia, driven not only by economic aspirations but increasingly by climate-induced disasters and chronic water and food insecurity. This unplanned urban influx places immense pressure on already overstretched city infrastructures.

During national emergencies, the state's focus often shifts from governance and law enforcement toward immediate relief operations, creating vulnerabilities that can be exploited by violent non-state actors. Influxes of displaced populations into urban slums complicate intelligence gathering, as extremist groups can conceal themselves among vulnerable migrant communities and exploit their socio-economic grievances. Overpopulation, combined with resource depletion, further accelerates urbanization and exacerbates ethnic, sectarian, and linguistic tensions (Khan M. , 2019). Some studies show a direct connection between rapid urban growth and the rise in sectarian violence in cities such as Karachi. At the same time, rural-urban divides have deepened perceptions of state failure: rural communities feel abandoned due to inadequate post-disaster assistance, while urban residents perceive displaced populations as competitors for scarce resources.

Furthermore, In Sindh, frustrations over ineffective flood relief have heightened political discontent, while in Balochistan, longstanding fears of demographic change have intensified ethnic resistance and unrest. The continued inability of political institutions to address these interconnected challenges has contributed to widespread public anger, political instability, and an expanding national security threat (Babar, Waleed, & Younas, 2024).

Climate change poses a serious challenge to Pakistan's national security due to the country's unique geophysical and topographical conditions, which increase its exposure to recurring and intensifying extreme weather events. This threat is compounded by Pakistan's heavy economic dependence on climate-sensitive natural resources, making environmental disruption a direct risk to economic stability. Scholars argue that shifting climate patterns can trigger social and political instability by intensifying environmental scarcity, thereby weakening the foundations of national security. As natural resources deteriorate and become more difficult to access, competition over land, water, and food increases, raising the likelihood of conflict and, in some cases, violence. The strategic importance of these risks is further amplified by the fact that the Indus Basin provides more than 70 percent of Pakistan's surface water supply, placing climate change at the core of the country's security and survival framework (Aman, Hanif, & Choudhary, 2025).

### **Climate Dimensions of the Kashmir Dispute**

Debates over broadening the notion of security to include the environmental context in which human societies exist have persisted among scholars for decades. Critics of the conventional security framework, such as Johan Galtung, challenged the rigid separation between environmental and military dimensions of security. He emphasized that ecological stability, socio-economic development, and the prevention of armed conflict are interconnected systems that collectively underpin genuine security rather than contradict it. From this perspective, human survival and progress are fundamentally dependent on the natural environment, as the continuity of human societies cannot be sustained in the absence of a functioning biosphere. A renowned scholar, Renner accentuated that environmental deterioration and resource depletion rarely operate in isolation; instead, they often function as compounding stressors that, through complex causal pathways, can provoke violent conflict or intensify existing disputes (Renner, 1999).

Similarly, in case study of India-Pakistan, water crisis is the main reason behind the escalation of tensions. As both states have been the part of Indus water treaty, which was signed to settle down water clashes. Now it has been observed that IWT has been violated by both states. The violation led towards the escalation of territorial conflict (Kashmir issue). The IWT has increasingly come under pressure as bilateral cooperation on water governance between India and Pakistan. The two states differ markedly in their approaches to implementing the treaty. India generally advances water infrastructure projects independently, while Pakistan closely scrutinizes these initiatives to safeguard its allocated water rights and frequently resorts to the treaty's dispute-resolution mechanisms. Both countries continue to construct dams and hydropower facilities along the Indus river system. Although the IWT mandates the exchange of information concerning water flows and development projects, the data-sharing process remains inadequate, relying on outdated methodologies and often providing information that is incomplete or insufficiently transparent (Malik, 2020).

#### **Pakistan**

These developments represent only the most recent episodes in the long-standing rivalry between India and Pakistan. However, an additional and increasingly decisive factor is likely to shape the trajectory of their bilateral relations in the years ahead: water security. India occupies an upstream position that affords it substantial control over the water resources upon which Pakistan heavily depends. At the same time, climate change is reducing overall water availability in both countries, thereby intensifying competition over an already scarce resource. The governance of transboundary water sharing between the two states is primarily regulated by the IWT, which allocates control over three eastern tributaries of the Indus River to India, while assigning the Indus main stem and two western tributaries to Pakistan (Gordon, 2020). Despite its durability, the treaty remains fragile, as political and security crises particularly those linked to Kashmir frequently provoke unilateral actions, including the construction or acceleration of upstream infrastructure projects by India.

This dynamic was evident in 2018, when India signaled its intention to suspend aspects of the treaty following a militant attack that resulted in the deaths of 18 Indian soldiers. In response, Pakistan's then Foreign Affairs Adviser, Sartaj Aziz, warned that any unilateral violation or suspension of the agreement would be interpreted as an act of war. Tensions escalated

further in 2019, when renewed conflict in Kashmir coincided with India diverting water allocated to Pakistan toward its own regions, including Jammu, Kashmir, and Punjab (Roberts, 2025). Pre-existing water scarcity amplifies the destabilizing potential of these disputes. Pakistan ranks among the world's most water-stressed states, and its largely agrarian economy depends heavily on reliable water supplies to sustain livelihoods, food security, and economic stability. India, meanwhile, faces mounting water pressures of its own, driven by rapid population growth and rising domestic demand. Climate change is expected to compound these challenges by simultaneously affecting water supply and consumption patterns. On the supply side, rising temperatures and shifting precipitation regimes in the Hindu Kush Karakoram Himalaya region which feeds the Indus River system are altering hydrological flows. It also increases uncertainty, and heightening the risk of future water-related tensions between the two nuclear-armed neighbors ( Zahoor & Huma, 2024).

Pakistan contends that India has breached the IWT by modifying natural water flows through excessive storage and by surpassing the limits prescribed for reservoir capacity, particularly in relation to the Kishanganga and Baglihar dam projects. According to Pakistan, these upstream developments enhance India's control over the western rivers. It effectively allowing it to appropriate water that is legally allocated downstream. Pakistan has consistently objected to hydropower projects of India. Pakistan has been arguing that their cumulative downstream impacts threaten water availability in Pakistan. Such developments have been linked to water shortages, especially in Sindh province (Shams, 2025). According to analysts, it has been analyzed that the Kishanganga project alone could reduce Pakistan's water inflows by approximately 8-9 percent. Beyond storage concerns, Pakistan also alleges that India has used sudden, unannounced water releases as a coercive instrument, resulting in damaging floods. These dynamics have intensified apprehensions that India could employ water as a means of political leverage in the future a risk likely to grow as climate change places additional stress on regional water resources and as India seeks to meet the rising water demands of its own population ( Saxena, 2025).

### **India**

India maintains that the development of dams and hydropower facilities is essential to satisfy its expanding energy requirements and has argued that the IWT should be revised to better accommodate the interests of the upper riparian state. It further asserts that climate change has altered hydrological patterns, thereby affecting the volume and timing of river flows. Amid heightened bilateral tensions in 2016, India temporarily halted its participation in joint institutional mechanisms established for river management under the treaty. This position was reinforced by statements from Prime Minister Narendra Modi in 2019, in which he emphasized that waters originating in India had historically flowed into Pakistan and pledged to redirect them for domestic use (Ethirajan & Wertheimer, 2025). More recently, leaders of the Bharatiya Janata Party (BJP) have threatened to withdraw from the IWT entirely and to retain what they describe as unutilized water currently flowing downstream to Pakistan. India has sought to justify this stance by invoking the controversial and widely criticized Harmon Doctrine, which asserts absolute territorial sovereignty over transboundary water resources by upstream states.

In 2003, the Legislative Assembly of Jammu and Kashmir adopted a resolution calling for a reassessment of the Indus Waters Treaty with the objective of potentially ending India's participation in it (Banerji & Qazi, 2023). Pakistan has consistently argued that India strategically employs the treaty as a political instrument, particularly by using hydropower development to gain favor among energy-scarce populations in Kashmir and to weaken ties between Kashmiris and Pakistan. In response to such narratives, Pakistani officials have asserted their willingness to use force if necessary to protect the country's water entitlements. During renewed tensions in September 2016, statements by Indian officials questioning the treaty's relevance prompted Pakistan to warn that any unilateral withdrawal would be treated as an act of war. More recently, Pakistan's Senate has passed a resolution advocating a review of the treaty with the aim of securing a greater share of water resources (Malik, 2020).

### **Conference of Party (COP): Pakistan and India**

#### **Overview**

The Conference of the Parties (COP) functions as the supreme decision-making authority under the United Nations Framework Convention on Climate Change (UNFCCC). It comprises representatives from all Parties sovereign states and regional entities that have formally committed to the Convention and are bound by its provisions. Convened on an annual basis, the COP serves as the primary forum for negotiating new climate-related commitments. It also works as an evaluating collective and individual progress toward the UNFCCC's overarching objective of addressing global climate change. Each COP typically culminates in the adoption of a political declaration or a legally binding outcome document that outlines agreed-upon actions and policy directions. The UNFCCC itself encompasses 198 Parties, including 197 countries and the European Union (United Nations Climate Change, n.d.). It is guided by the core aim of stabilizing greenhouse gas concentrations at a level that prevents dangerous human-induced interference with the climate system. As an overarching framework, the UNFCCC provides the institutional foundation for subsequent agreements and decisions. Most probably the Paris Agreement, which was adopted at COP21 in 2015 to strengthen global mitigation and adaptation efforts.

Recent COP meetings have underscored both continuity and evolution in global climate governance (United Nations Framework Convention on Climate Change (UNFCCC), 2025). COP26, hosted by the United Kingdom in Glasgow in 2021 with preparatory events organized by Italy in Milan, was followed by COP27 in Sharm El-Sheikh, Egypt, in 2022, and COP28 in Dubai, United Arab Emirates, in 2023. COP28 marked a historic moment, as Parties collectively agreed for the first time to explicitly reference fossil fuels in a COP decision. It was committing to a gradual transition away from their use in energy systems in a just and equitable manner. Additionally, the operationalization of the Loss and Damage Fund initially agreed upon at COP27 was finalized on the opening day of COP28. It was representing a significant step toward providing financial support to climate-vulnerable countries, particularly in the Global South. Furthermore, COP29 is scheduled to take place in Baku, Azerbaijan, in 2024, continuing the ongoing efforts to strengthen international climate action (COP30: Your Guide to the 2025 UN Climate Conference, 2025).

**COP29: Role of Pakistan**

Pakistan ranks among the world's most climate-vulnerable states, experiencing accelerating temperature increases, a growing frequency of extreme weather events, and rapid glacial retreat. The catastrophic floods of 2022 exposed the scale of this vulnerability, devastating vast areas of the country and displacing millions of people, thereby highlighting the severe human and economic costs of climate-induced disasters. Such events underscore the urgent risks climate change poses to Pakistan's long-term development and resilience. Climate change now constitutes a direct threat to Pakistan's national security, economic sustainability, and social cohesion. The country has already recorded a notable rise in average temperatures, intensifying heatwaves and exacerbating food insecurity and water stress (Baig, 2024). In this context, Pakistan's engagement at COP29 is expected to emphasize the urgent need for enhanced climate finance and strengthened international cooperation, aimed at supporting both immediate adaptation efforts and long-term climate resilience strategies. Despite contributing less than one percent of global carbon emissions, Pakistan remains among the countries most acutely impacted by climate change. The devastating floods of 2022 illustrated this imbalance, causing widespread destruction and economic losses estimated at over PKR 24 billion. Such events highlight the disproportionate burden faced by countries with minimal responsibility for global emissions (Salik & Khetran, 2024). At COP29, Pakistan is expected to strongly emphasize the urgency of enhanced international assistance, particularly in the form of climate finance, technical capacity-building, and cooperative adaptation initiatives. In collaboration with Azerbaijan, Pakistan is advancing shared climate priorities aimed at strengthening bilateral relations and promoting long-term resilience. This partnership is reflected in the planned launch of a joint climate transparency report at COP29, intended to support evidence-based policymaking and coordinated responses to climate-induced challenges (Khan L., 2024). Pakistan is expected to call for a greater allocation of global resources toward adaptation-focused initiatives, particularly in strengthening water governance, improving the resilience of agricultural systems, and developing climate-resilient infrastructure. In the absence of substantial investment in adaptation, the impacts of climate-related hazards will continue to fall disproportionately on Pakistan and other developing nations, intensifying existing vulnerabilities and constraining sustainable development (Barbarà & Hadap, 2024).

**Conference of Parties on Climate Change and India's Role**

India has yet to submit its updated climate commitment, a mandatory requirement under the UNFCCC that must be revised every five years. This delay persists despite international evaluations characterizing India's current climate efforts as significantly insufficient. These commitments, formally referred to as Nationally Determined Contributions (NDCs), are expected to reflect enhanced mitigation ambitions, particularly in light of the global failure to achieve emission reductions necessary to prevent severe climate impacts. To date, approximately 120 out of the 196 UNFCCC member states have already communicated their revised NDCs, while India remains among the countries that have not yet fulfilled this obligation (Khadka, 2025). Indian policymakers, echoing concerns widely expressed across the developing world, contend that enhanced climate commitments with stricter emission-

reduction targets are ineffective without corresponding financial and technological assistance from advanced economies.

Although the Paris Agreement obliges developed countries to support developing states in addressing climate change, the issue of climate finance continues to generate significant disagreement. At the most recent COP held in Baku, Azerbaijan, proposed financial pledges of approximately \$300 billion annually by 2035 from developed countries provoked strong dissatisfaction among developing nations, which had called for commitments exceeding \$1 trillion. Furthermore, developing countries have highlighted the absence of transparency regarding the delivery mechanisms of the proposed funds and have raised concerns that an increased reliance on private financing would exacerbate debt burdens through loan-based instruments. Several developed countries argue that rapidly growing economies, including India and China, should also assume greater responsibility in contributing to global climate finance (Singh & Singh, 2025).

### Conclusion

To encapsulate the whole writings, it has been observed that climate change is emerging cause of strained relations between states. It has been deteriorating the relations between Pakistan and India. Behind that, there are certain reasons which directly linked with climate change. Both states have been facing water crisis issues. There was war between both states due to water but interference of world bank protects them from further escalation. Climate change further escalating the conflicts between Pakistan and India. Due to irregular melting of glaciers, India has violated the treaty of world bank and inaugurated the construction of dams. Every year during the monsoon, India opens dams to Pakistan which destroyed the agriculture, livestock and cause migration of people from one place to another. All these actions of India strained the relations between both states. At international level, certain awareness programs have been initiated by developed states to mitigate the menace of climate change. One of them is COP on climate change. Pakistan and India had joined COP but did not abide by legal bindings of COP.

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