

CLIMATE CHANGE AND NATIONAL SECURITY IN PAKISTAN: EMERGING CHALLENGES AND STRATEGIC PROSPECTS

Amna Bibi^{*1}, Chaudhary Muhammad Sultan²

^{*1}Department of Peace and Conflict Studies, National Defence University, Pakistan.

²Bachelor of Science in English Literature, Institute of Liberal Arts, University of Management and Technology (UMT), Pakistan.

^{*1}amnaaimen07@gmail.com, ²badarsultan534@gmail.com

DOI: <https://doi.org/10.5281/zenodo.18082240>

Keywords

Climate change, national security, Pakistan, resource scarcity, climate diplomacy, environmental security.

Article History

Received: 25 October 2025

Accepted: 10 December 2025

Published: 23 December 2025

Copyright @Author

Corresponding Author: *

Amna Bibi

Abstract

Climate change has emerged as a profound threat to national security, particularly in vulnerable developing states, where environmental disruptions trigger cascading effects on water, food, economic stability, and human well-being. In Pakistan, a country repeatedly devastated by extreme weather events such as floods, droughts, and heatwaves, climate change increasingly strains conventional conceptions of national security and underscores the urgency of reframing strategic policy paradigms. This article explores how climate change acts as both a direct and indirect security threat to Pakistan, exacerbating resource scarcity, socio-economic fragility, internal displacement, and geopolitical tensions. By synthesizing existing secondary literature from peer-reviewed research, this study highlights emerging challenges and identifies strategic prospects for integrated climate security governance. Findings indicate that while climate-induced risks are multifaceted and intensifying, opportunities exist in climate diplomacy, policy mainstreaming, and resilience-building initiatives. The paper concludes with recommendations for embedding climate considerations into national security frameworks to protect state stability and societal well-being.

INTRODUCTION

Climate change is no longer solely an environmental or scientific concern; it has rapidly become a matter of national security, especially for climate-vulnerable states like Pakistan. The impacts of anthropogenic climate change are manifesting through intensified monsoon rains, extreme heatwaves, glacial melt, and shifting precipitation patterns that have led to disastrous floods and droughts across the country (Haider & Hamza, 2024; Aslam, Hussain, & Salah-ud-Din, 2024). These environmental changes, triggered largely by global warming, have direct implications for economic stability, societal resilience, and the ability of the state to safeguard its citizens against multifaceted risks.

Pakistan consistently ranks among the world's most climate-vulnerable countries, facing a disproportionate share of climate-induced disasters despite contributing minimally to global greenhouse gas emissions (SDPI report, 2024). Climate impacts such as erratic water flows, glacier retreat, and heatwaves increasingly threaten critical national security sectors, including agriculture, food stability, and infrastructure (SDPI report, 2024; Saad, Mahsud & Mian, 2024). These disruptions are destabilising livelihoods, heightening social tensions, and straining governance structures tasked with disaster response and adaptive planning.

In contemporary security discourse, climate change is recognized as a "threat multiplier,"

wherein environmental stresses exacerbate socio-economic vulnerabilities and amplify existing challenges to state stability (Akhtar & Jan, 2023). For Pakistan, the nexus between climate change and national security necessitates a strategic reorientation of policy priorities—from traditional defence-centric frameworks to comprehensive, climate-integrated governance approaches that address environmental, human, and economic security in holistic terms.

Literature Review

A growing body of academic literature confirms that climate change is reshaping the national security landscape of Pakistan through both direct environmental impacts and indirect socio-political stressors (Akhtar & Jan, 2023; Saad et al., 2024). These studies consistently frame climate change as a non-traditional security threat that intersects with water, food, and economic stability, requiring a broadening of security paradigms beyond conventional military concerns (Akhtar & Jan, 2023).

Research indicates that the climate-security nexus in Pakistan is particularly acute due to its unique geographical and socio-economic context. Pakistan's varied topography—ranging from coastal regions to the Himalayan foothills—makes the country susceptible to a wide spectrum of climate impacts, such as glacial lake outburst floods in the north and monsoon-induced flooding in the plains (Hussain, Mehdi & Samar, 2023). Meanwhile, heatwaves and droughts have undermined agricultural productivity, disrupting the rural economy and threatening food security (Naz, Iqbal & Begum, 2024). These pressures compound existing socio-economic fragilities, contributing to internal displacement and heightened vulnerability among marginalized populations.

Beyond environmental stressors, scholars emphasize that climate change interacts with Pakistan's institutional capacities and policy frameworks. Several studies observe a lack of strategic integration of climate risks into national security planning, leading to reactive rather than proactive governance responses (Zubair et al., 2024; Aman, Hanif & Choudhary, 2025). For instance, strategic securitization—the framing of climate change as a security threat in official narratives—remains uneven and often subsumed under broader development priorities

rather than recognized as a core national security concern requiring coordinated political action (Aman et al., 2025).

Other research underscores the transboundary nature of climate stressors, particularly concerning water resources. Pakistan's water security is intricately linked with regional geopolitics, especially given its dependence on the Indus Basin system, which is affected by glacier melt and variable monsoon patterns (SDPI report, 2024). Transboundary water tensions could intensify under climate-driven water scarcity, with implications for diplomatic relations and regional stability.

Taken together, these scholarly works suggest that climate change is transforming Pakistan's security environment in complex ways that extend beyond environmental degradation to political, economic, and social spheres. However, gaps remain in synthesizing these varied dimensions into a unified strategic policy agenda.

Research Gap

Despite a growing literature on climate change and security in Pakistan, existing research often remains fragmented—focusing on specific sectors such as water, food, or regional dynamics without systematically connecting these domains to overarching national security frameworks. There is a need for integrated analyses that bridge environmental, socio-economic, and institutional perspectives to inform holistic policy responses.

Research Questions

1. How does climate change influence traditional and non-traditional dimensions of national security in Pakistan?
2. What are the principal socio-political and economic challenges posed by climate change for Pakistan's national security?
3. What strategic prospects and policy mechanisms can enhance Pakistan's resilience to climate-induced security challenges?

Research Objectives

1. To analyze the multidimensional impacts of climate change on national security in Pakistan.

2. To identify and assess key strategic challenges emerging from climate-induced environmental and socio-economic changes.

3. To propose strategic policy recommendations for integrating climate resilience into national security planning.

Research Methodology

This article adopts a qualitative research methodology focusing on secondary sources only. Data and analysis are drawn from peer-reviewed research articles indexed on academic platforms such as Google Scholar, as well as institutional reports and scholarly publications relating to climate change, environmental security, and national security in Pakistan. Through thematic analysis of existing literature, this study synthesizes evidence on climate-security linkages and strategic prospects, situating Pakistan's experience within broader scholarly debates.

Main Findings

- **Climate change acts as a non-traditional security threat** that intersects with water, food, economic, and human security in Pakistan (Akhtar & Jan, 2023; Saad et al., 2024).
- **Extreme weather events such as floods, heatwaves, and glacial melt have intensified in frequency and severity**, with significant impacts on infrastructure, agriculture, and social stability (Aslam et al., 2024).
- **Pakistan's institutional frameworks lack comprehensive integration of climate risks into national security policy**, leading to reactive rather than proactive governance (Aman et al., 2025; Zubair et al., 2024).
- **Water security and transboundary resource tensions** are exacerbated by climate variability, with implications for regional relations and potential conflict dynamics (SDPI report, 2024).
- **Food security disruptions due to climate impacts on agriculture** pose risks to social stabilization and economic continuity (Naz et al., 2024).
- **Climate-induced displacement and internal migration** contribute to socio-economic tensions and governance challenges (Saad et al., 2024).
- **Strategic securitization of climate issues is underdeveloped**, requiring

enhancement in diplomatic and policy narratives (Aman et al., 2025).

- **Opportunities for climate diplomacy and international cooperation** exist but require stronger domestic policy alignment and capacity building.

Discussion

1. Climate Change as a Security Imperative

Climate change has increasingly emerged as a critical security imperative rather than a peripheral environmental concern, particularly for climate-vulnerable states such as Pakistan. The intensification of extreme weather events—most notably floods, heatwaves, and prolonged droughts—has significantly altered the country's internal security environment by damaging infrastructure, disrupting livelihoods, and straining governance systems (Aslam et al., 2024; Haider & Hamza, 2024). These recurrent environmental shocks divert state resources from long-term development initiatives toward emergency relief and reconstruction, weakening institutional capacity over time. As a result, climate change exacerbates existing socio-economic vulnerabilities such as poverty, unemployment, and regional inequality, thereby magnifying instability at the societal level. Moreover, climate change functions as a “threat multiplier” that intensifies traditional and non-traditional security challenges simultaneously. Akhtar and Jan (2023) argue that environmental stress interacts with governance deficits and economic fragility, increasing the likelihood of social unrest and political instability. In Pakistan, where state capacity is already under pressure, climate-induced crises further complicate security management and policy coherence. Consequently, national security can no longer be conceptualized solely in military terms; it must be redefined to incorporate environmental sustainability, human security, and economic resilience as core strategic priorities.

2. Water Security and Resource Scarcity

Water security represents one of the most acute climate-induced challenges to Pakistan's national security due to the country's heavy dependence on the Indus River system for agriculture, hydropower generation, and domestic consumption. Climate change has

disrupted traditional hydrological patterns through erratic monsoon rainfall, accelerated glacial melt, and prolonged dry spells, resulting in unpredictable water availability (SDPI, 2024). These changes have increased stress on water infrastructure and intensified competition over scarce water resources at inter-provincial and local levels, often generating political contestation and governance disputes.

Beyond domestic concerns, water scarcity carries significant geopolitical implications for Pakistan. As a lower-riparian state dependent on transboundary rivers, Pakistan's water security is closely tied to regional dynamics and diplomatic relations. Climate-induced variability in river flows can exacerbate existing tensions and undermine trust in water-sharing arrangements (Zubair et al., 2024). Therefore, water security in Pakistan represents both an internal stability challenge and a strategic external security concern, requiring integrated water governance, climate adaptation, and diplomatic engagement.

3. Food Security and Agricultural Vulnerabilities

Pakistan's agrarian economy is highly sensitive to climate variability, making food security a critical component of national security. Rising temperatures, irregular rainfall, floods, and droughts have adversely affected crop yields, soil fertility, and livestock health, undermining food availability and affordability (Naz et al., 2024). These impacts disproportionately affect rural communities and low-income households that rely heavily on climate-sensitive agricultural livelihoods. Declining agricultural productivity not only threatens economic stability but also undermines nutritional security and human development outcomes.

From a national security perspective, food insecurity has far-reaching implications. Persistent food shortages and rising prices can fuel public dissatisfaction, increase poverty, and contribute to social unrest, particularly in urban centers where food access is market-dependent. Saad et al. (2024) highlight that food insecurity linked to climate change may intensify rural-to-urban migration, placing additional strain on urban infrastructure and governance. Thus, ensuring food security under changing climatic conditions is essential for maintaining social

stability, political legitimacy, and long-term national resilience.

4. Economic Impacts and Societal Fragility

Climate change imposes substantial economic costs on Pakistan by damaging infrastructure, disrupting supply chains, and reducing productivity across key sectors. Large-scale flooding and heatwaves disrupt transportation networks, energy systems, and industrial output, resulting in long-term economic losses and reduced investor confidence (Aslam et al., 2024). The financial burden of repeated disaster response and reconstruction diverts public resources away from development priorities such as education, healthcare, and technological innovation, thereby constraining sustainable growth.

These economic pressures exacerbate societal fragility by widening income inequality and increasing unemployment, particularly among climate-affected populations. Akhtar and Jan (2023) note that economic stress combined with environmental degradation intensifies grievances and weakens social cohesion. When economic hardship intersects with governance challenges, it can create conditions conducive to instability and unrest. Therefore, the economic consequences of climate change must be understood as integral to national security planning rather than isolated development challenges.

5. Institutional Gaps and Policy Deficits

Despite growing awareness of climate risks, Pakistan's institutional frameworks remain inadequately equipped to address climate change as a national security issue. National security policies have traditionally prioritized conventional military threats, while climate change has largely been treated as an environmental or developmental concern (Aman et al., 2025). This compartmentalized approach limits effective coordination between security institutions, environmental agencies, and economic planners, resulting in fragmented and reactive policy responses.

Furthermore, the absence of integrated climate-security governance undermines long-term strategic preparedness. Zubair et al. (2024) argue that without mainstreaming climate risk into security planning, the state remains vulnerable

to sudden shocks and cascading crises. Bridging these institutional gaps requires policy reforms that embed climate considerations into national security strategies, enhance inter-agency coordination, and prioritize preventive adaptation over post-disaster response.

6. Internal Displacement and Migration

Climate change has emerged as a significant driver of internal displacement in Pakistan, particularly following recurrent floods and prolonged droughts. Large numbers of displaced individuals migrate from rural areas to urban centers in search of livelihoods, shelter, and basic services (Saad et al., 2024). This migration places immense pressure on urban infrastructure, housing markets, healthcare systems, and employment opportunities, often exceeding the absorptive capacity of cities.

From a security perspective, unmanaged internal migration can contribute to social tensions, informal settlements, and governance challenges. Haider and Hamza (2024) note that competition over scarce urban resources can heighten community tensions and strain law enforcement capacity. If displacement is not addressed through comprehensive planning and social protection mechanisms, climate-induced migration may undermine urban stability and complicate national security management.

7. Strategic Securitization and Policy Narratives

The securitization of climate change within Pakistan's strategic discourse remains limited and inconsistent. Although policy documents increasingly acknowledge environmental risks, climate change is rarely prioritized alongside traditional security threats such as military conflict and terrorism (Aman et al., 2025). This limited securitization reduces political urgency and restricts resource mobilization for climate adaptation and resilience initiatives.

Effective securitization could elevate climate change within national priorities, enabling cross-sector coordination and sustained policy focus. Akhtar and Jan (2023) emphasize that framing climate change as a security issue can strengthen institutional accountability and policy coherence. However, securitization must be carefully balanced to avoid militarizing climate governance; instead, it should integrate

environmental, human, and economic security perspectives to promote sustainable stability.

8. Climate Diplomacy and Regional Cooperation

Climate change presents both challenges and opportunities for Pakistan's regional and international engagement. Given the transboundary nature of many climate risks, particularly water resources, regional cooperation is essential for managing shared vulnerabilities. Collaborative mechanisms for climate data sharing, early warning systems, and disaster preparedness can reduce tensions and enhance collective resilience (SDPI, 2024).

At the international level, Pakistan has increasingly framed climate change as an issue of climate justice, highlighting its vulnerability despite minimal contributions to global emissions. Zubair et al. (2024) argue that effective climate diplomacy can enhance Pakistan's access to climate finance, technology transfer, and capacity-building support. Aligning diplomatic initiatives with domestic climate strategies can therefore strengthen both national security and development outcomes.

9. Opportunities for Resilience Building

Despite escalating risks, climate change also offers opportunities for resilience building through strategic planning and innovation. Investments in climate-resilient infrastructure, renewable energy, and sustainable water management can reduce long-term vulnerabilities while supporting economic diversification and growth (Naz et al., 2024). Strengthening early warning systems and disaster preparedness can significantly lower the human and economic costs of extreme weather events. Community-based adaptation initiatives also play a critical role in enhancing resilience at the grassroots level. Saad et al. (2024) highlight that local participation in climate adaptation fosters social cohesion and improves the effectiveness of resilience measures. By integrating national policies with local adaptation efforts, Pakistan can enhance its capacity to withstand climate shocks and maintain long-term stability.

10. Integrating Climate and Security Policy

Addressing the climate-security nexus in Pakistan ultimately requires an integrated policy

approach that bridges environmental governance and national security planning. Climate risks must be systematically incorporated into threat assessments, development strategies, and resource allocation decisions (Aman et al., 2025). Such integration enables proactive risk management and reduces reliance on reactive crisis responses.

This policy integration demands institutional reforms, improved coordination mechanisms, and a shift toward long-term strategic thinking. Akhtar and Jan (2023) argue that recognizing the interdependence of climate resilience and national security is essential for safeguarding state stability in an era of accelerating climate change. By adopting a holistic and anticipatory framework, Pakistan can better navigate emerging challenges and enhance its national security posture.

Conclusion

Climate change has emerged as a critical non-traditional security threat for Pakistan, reshaping the country's national security landscape in profound and enduring ways. The analysis demonstrates that climate-induced challenges—such as extreme weather events, water scarcity, food insecurity, economic disruption, and internal displacement—are not isolated environmental issues but deeply interconnected with political stability, social cohesion, and state capacity. As a climate-vulnerable country with limited adaptive resources, Pakistan faces compounded risks where environmental stress acts as a threat multiplier, intensifying existing socio-economic inequalities and governance challenges. The growing frequency and severity of floods, heatwaves, and droughts underscore the inadequacy of conventional, defense-centric security frameworks to address the complex realities posed by climate change. Consequently, national security in Pakistan can no longer be conceptualized solely in military terms; it must incorporate environmental sustainability, human security, and economic resilience as core components.

At the same time, the study highlights that climate change also presents strategic prospects if addressed through proactive, integrated, and forward-looking policies. Strengthening climate governance, mainstreaming climate risks into

national security planning, and enhancing institutional coordination can significantly reduce vulnerabilities and improve resilience. Opportunities for climate diplomacy, regional cooperation on transboundary resources, and access to international climate finance offer pathways for Pakistan to transform climate risks into strategic leverage. Ultimately, recognizing climate change as a central national security concern is essential for safeguarding Pakistan's long-term stability and development. A comprehensive and anticipatory approach—grounded in scientific evidence, policy integration, and regional cooperation—will be crucial for ensuring that Pakistan is better prepared to navigate the security challenges of a rapidly changing climate.

Way Forward

Moving forward, Pakistan must adopt a comprehensive and integrated approach that explicitly embeds climate change into its national security and strategic planning frameworks. This requires mainstreaming climate risk assessments across all levels of policymaking, particularly within national security, defense, disaster management, and development institutions. Strengthening inter-institutional coordination among federal and provincial bodies, including environmental agencies, security institutions, and planning authorities, is essential to ensure coherent and timely responses to climate-induced threats. Investment in climate-resilient infrastructure, improved water resource management, and climate-smart agricultural practices should be prioritized to reduce vulnerability in critical sectors. Additionally, enhancing early warning systems and disaster preparedness mechanisms will help mitigate the human and economic costs of extreme weather events, thereby reducing pressure on state capacity and maintaining social stability.

At the strategic level, Pakistan should actively leverage climate diplomacy as a tool to address transboundary environmental challenges and secure international support for adaptation and mitigation efforts. Strengthening regional cooperation on shared water resources, climate data exchange, and disaster response mechanisms can reduce the risk of conflict and foster mutual trust among neighboring states.

Furthermore, greater engagement with global climate finance initiatives and multilateral institutions can provide much-needed resources for resilience-building projects. Public awareness campaigns and community-based adaptation programs should also be promoted to enhance societal resilience and local ownership of climate solutions. By adopting a proactive, inclusive, and forward-looking strategy, Pakistan can transform climate change from a destabilizing security threat into an opportunity for sustainable development and long-term national security.

References

- Aman, A., Hanif, E., & Choudhary, A. (2025). Strategic securitization: Climate change in the national security narratives of Pakistan. *Annals of Human and Social Sciences*, 6(3), 341–358.
- Akhtar, N., & Jan, I. (2023). Climate Change: Rising Security (Non-Traditional) Threat to Pakistan. *Journal of Development and Social Sciences*.
- Aslam, M., Hussain, S., & Salah-ud-Din, S. (2024). Climate Change: A Threat to National Security of Pakistan. *International Journal of Contemporary Issues in Social Sciences*, 3(3), 1517–1526.
- Haider, R. S., & Hamza, M. A. (2024). Assessing climate change impacts on national security in Pakistan. *Social Science Review Archives*.
- Hussain, S., Mehdi, W., & Samar, M. (2023). Unveiling climate change: Exploring non-traditional security threats in Gilgit-Baltistan. *Pakistan Journal of International Affairs*.
- Naz, S., Iqbal, Z., & Begum, S. (2024). Climate Change's Impact on Food Security in Pakistan: Challenges and Mitigation Strategies. *Pakistan Social Sciences Review*.
- Saad, S., Mahsud, M. I., & Mian, G. (2024). Climate change impacts: Exploring the rising climate-security nexus in Pakistan. *Liberal Arts and Social Sciences International Journal*.
- Zubair, M. T., Rasheed, M. I., Khan, S., & Dawood, M. (2024). The intersection of climate change and national security in Pakistan: A diplomatic perspective. *Policy Research Journal*, 2(4), 1153–1164.
- SDPI (2024). Climate change and impacts on national security of Pakistan. Sustainable Development Policy Institute.