

RESEARCH PAPER

Climate Change as Security Threat in Pakistan: The Rise of Eco-Geopolitics

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ABSTRACT

This paper explores the climate change-security nexus in Pakistan through the prism of eco-geopolitics. Climate change has been playing the role of a threat multiplier by aggravating the predisposition of socio-economic vulnerabilities, resource scarcity, and governance challenges. Although Pakistan has contributed very little to global emissions, recurring floods and glacial melt have posed heavy pressure on human, national, and regional security. In this respect, it is important to interpret it from a security perspective. A qualitative approach was applied going through policy documents and secondary literature on climate, security and geopolitics. The findings indicate that climate-induced disasters further deteriorate food and water insecurity and institutional strain to reshape the security landscape. Eco-geopolitics presents a broader framework than military-centric traditional security approaches. The paper concludes by calling for incorporating climate adaptation into national security planning, focusing on human security, and expanding regional cooperation on transboundary environmental challenges.

Keywords: Climate Security, Pakistan, Eco-Geopolitics, Human Security

Introduction

Climate change has emerged as an increasingly important non-traditional security issue in the twenty-first century and has altered the contours of national and international security. In addition to the typical damage from environmental change, climate change can be perceived as a 'threat multiplier' that aggravates economic vulnerability, societal instabilities, and international tensions, especially for developing countries that are less equipped to adapt to change. The case of Pakistan stands out in this context. Although the country emits less than one percent of greenhouse gas emissions worldwide, Pakistan always features as one of the most 'vulnerable' countries (Nadeem, Yaseen & Muzaffar, 2023; Babar, Waleed, & Younas, 2024).

In the Pakistani context, the effects of climate change are increasingly entwined within the foundational components of the country's national security. The effects arising out of climate-related change have undermined agricultural production and the availability of water and food in addition to energy security and led to displacement-related effects and the outcome of a healthcare crisis and the resultant unplanned urbanization (Babar, Waleed, & Younas, 2024). The extensive flooding experienced in the country in 2022 has clearly exposed the effects arising out of the impact of climate change on the structural vulnerabilities exposed by the flooding in the Pakistani economy and the subsequent human distress caused by the unfolding effects in the country. The Pakistani strategic vision and vision processes continue to focus on the more prominent challenge and threat arising out of military-related risks in Pakistan's strategic perception and processes and have tended

to inadequately address the implications arising out of the effects and results related to climate change in the country.

This gap clearly reveals the core focus of the research, namely the disquieting truth that although climate change has been acknowledged in the National Security Policy (2022-2026) and other policies, the overarching security dimensions of climate change, especially via the perspective of eco-geopolitics, have not yet been extensively explored. Eco-geopolitics brings to the fore the manner in which environmental distress alters the dynamics of power, governance, and security. This research aims to shed light on the shortcomings of traditional approaches to the realm of security and explore a more integrated approach to the subject of security, acknowledging the prime determinant of overall security in the realm of environmental change associated with climate change in the context of the subject nation, Pakistan.

Literature Review

The previous decade has also initiated a recognition by Pakistani studies circles on the level of climate change that has far-reaching implications and goes beyond the impact witnessed in terms of environmental degradation and touches the domains of security and the economy. Various empirical studies undertaken between 2015 and 2025 clearly underpin the level of exposure and sensitivity the country has been facing in terms of increased flooding incidents, heatwaves, and glacial melting incidents and clearly indicate the devastating effects the country faces in terms of increased flooding incidents in the provinces of Sindh, Punjab, and Khyber Pakhtunkhwa and the level of heatwaves and shortages in the water supply situation due to the glacial melting in the Hindu Kush Himalayas range areas and related implications on the food chain and affected economies (Babar, Waleed, & Younas, 2024). Taken together, these studies indicate a clear recognition that environmental shocks experienced by Pakistan are not merely individual events, because they occur amidst a context of population growth, resource degradation, and socio-economic vulnerabilities. Current trends in the literature suggest a growing trend to interpret these challenges through a lens anchored in concepts of human security, thereby recognizing the threat to territorial integrity, in addition to the threat to the lives and futures of Pakistan's massive population, which numbers some 240 million. Beyond the purely Pakistani context, this literature highlights theological relevance, especially in how water resources spanning international borders with India, or the management of the 'Third Pole' in the HKH range, relate to international relations (Ashraf, & Adnan, 2022; Raazia, 2023).

Theoretical/conceptual frameworks represented within this literature exhibit a substantial borrowing from environmental security studies, human security studies, and eco-geopolitics, which help unravel the complexities of climate change dynamics and vulnerability. Environmental security studies place concerns about degradation of the natural environment, as well as resource scarcity, as possible sources of conflict, thereby linking natural resource degradation to governance problems/conflict potential. Human security studies, instead, emphasize citizen well-being, wherein natural disasters caused by climate change can be viewed as threats to basic human requirements: food, health, shelter, and water. Eco-geopolitics further expand this debate into international spheres of action, where study concerns focus on relationships between natural security threats and strategic plans of international actors (Saleem, 2025; (Ashraf, 2021).

Many scholars also use Copenhagen School principles of securitization as a framework for understanding climate change as a non-traditional security threat since there is an indication that the securitization of some environmental threats can lead to their legitimization as threats that require certain reactions. In addition to these approaches, climate change as a "threat multiplier" can now be considered as a focal explanation for vulnerability factors in Pakistan since it indicates that climate change makes existing conditions of society, along with economic and political stress, more vulnerable to conflicts,

migration, or state failure (Ahmed, Farid & Ashraf, 2021; Haider & Sultan, 2022). With these frameworks considered together, climate change can now be understood as a "threat timer" along with different theories in a more correct approach since military approaches alone cannot handle ecological threats.

Notwithstanding this increasing focus, there appear to be several deficiencies and controversies in extant literature. First of all, there is a deficiency in terms of the interface of climate change and security-related affairs in the military (Saad, 2024). Although there appears to be a mention of threats posed to defensive structures and troop movement in specific contexts of climate-related issues, there is a lack of systematic investigation. At the same time, there is a deficiency in terms of exploring the regional consequences of the water crisis in the HKH region and transboundary river conflicts, especially in terms of possible engagements in cooperative governance or climate-related diplomacy with a view to reducing conflict. Additionally, there continue to be debates in scholarly literature in terms of exploring the causal relationships between conflict and climate-related issues. Some authors contend that there is direct conflict and instabilities provoked and caused by climate-related changes, while there appears to be a holistic approach in terms of exploring its importance in accelerating pre-existing factors of vulnerability and risk (Vaughn, 2010).

Moreover, there is often emphasis in the literature in regards to the case of Pakistan regarding climate change adaptation and security. The capacity of climate diplomacy in South Asia as a means for cooperation in the reduction of shared risks in connection with climate change is yet another area that has remained less explored in light of recent developments in shared environment and security threats (Raazia, 2023).

Material and Methods

In this basic research qualitative method is used. The research contains interviews with experts in the particular field and the study of past utilizing the primary data source to offer a comprehensive analysis.

Results and Discussion

Climate Stressors and Security Dynamics

From the research, climate change acts as a security issue in the following direct and indirect ways in the context of the research: Climate change in its direct effects can be seen in the form of floods, drought, melting of the Hindu Kush–Karakoram–Himalayan glacier, as well as rising sea levels in the Indus Delta region. In its indirect effects, climate change can be linked to food insecurity, internal displacements, economic instability, as well as state instability.

In Pakistan, several climate-related disasters hit the country between 2015 and 2025 alone, notably the 2022 floods, which displaced millions of people and caused gigantic economic losses. Empirical studies vouch for increased frequency and intensity of such extreme weather events due to climate variability. (Sultan, 2024) Their findings present a case that is also elaborated upon by Ullah and Khan (2025) that climate change acts as a "threat multiplier" leading to an increase in pre-existing vulnerabilities due to poverty, poor infrastructure, and political instability.

Glacial melt became an important long-term security issue. Pakistan is home to more than 7,000 glaciers, which ranks the country second after Argentina with regard to the number of glaciers outside the Polar Regions. With the acceleration of glacial melt, the threat from glacial lake outburst floods (GLOFs) has also amplified, which endanger the settlements and important infrastructure below the glacier (Mukhtar, 2019).

Another key finding is that water scarcity has become an important issue. A shift in monsoon patterns and declining levels of river flow have increased interprovincial tension over water sharing, particularly between Punjab and Sindh. (Ahmed, 2019) show quite clearly that water stress in South Asia, including Pakistan, has now started to take on strategic dimensions, reinforcing the link between environmental degradation and political conflict.

Theoretical and Conceptual Analysis: From Environmental Security to Eco-Geopolitics

Eco-geopolitics can be defined as the analysis of the impact of environmental transformation on the reshaping of relations of power, strategic intentions, and security thinking for states/actor communities. As opposed to traditional geopolitics, which emphasizes territory and security through force, eco-geopolitics considers environmental resources/styles of vulnerability to climate change as key indicators for security concerns (Khan, 2021).

These findings imply that climate change is increasingly being securitized in Pakistan. According to the securitization theory, an issue becomes a security concern when it is framed as an existential threat that requires taking extraordinary measures. (Ullah & Abbasi, 2024) note that "Pakistani policymakers and military planners have, in recent times, started framing climate change as a non-traditional security threat, especially within national security documents and disaster response strategies."

Nonetheless, a debate exists among scholars on whether climate change should be viewed as a security threat or a risk factor. Some scholars contend that a securitization approach could lead to a militarized response to climate change, thereby ignoring development strategies in favor of militarism. Another argument presented is that a security-oriented approach towards climate change has political will and capabilities behind it, and thus effective actions can be taken towards mitigating this threat. Research on Pakistan as a case study supports that, although conflict may not result from climate change, it rather exacerbates vulnerabilities, thereby supporting 'eco-geopolitics' and not 'militarism' as a means of addressing it (Saad, 2024).

Integrating Climate Adaptation into National Security Planning in Pakistan

Increasingly, the role of climate change as a key determiner of the landscape of Pakistan's national security is being acknowledged, and therefore, a cohesive strategy must be adopted which incorporates the relationship between adaptation and security. The conventional framework of security in Pakistan has predominantly focused upon the threat of war, but the increased possibility of disasters triggered by climate, such as floods, heatwave attacks, and glacial lake outbreaks, requires the amenability of the security agenda to the incorporation of climate change as a key agenda. According to (Babar, Waleed, & Younas, 2024), the environment in Pakistan has increased the vulnerability of the country to socio-economic challenges, affecting agricultural development, the provision of water, and fuel security, and, in the words of the author, is functioning as the 'threat multiplier.'

Therefore, an inclusive and overall strategy for climate adaptation in national security needs to address both human and state security. The former, which targets the survival and well-being of humans, is highly vulnerable in the Pakistani context, where it faces threats from water, food, and climate change displacement. This vulnerability, highlighted by (Ullah, 2025), has increasingly affected vulnerable sections like women, children, and the displaced due to the impact of natural disasters and the lack of adaptive infrastructure. Protecting them from further vulnerability through appropriate climate-resilient public policies and interventions, therefore, is both an ethical mandate and, indeed, an important national security strategy.

In the state arena, climate change has been shown to affect the operational effectiveness of security agencies. According to (Bibi, 2025), the repeated deployment of military and civilian defense forces in caring for disaster-stricken areas, as witnessed in the floods of 2022, undermines efforts in traditional defense preparedness while overemphasizing logistical effectiveness. By integrating climate change into strategic planning, many of these pressures can be lessened through enhanced warning mechanisms, disaster response strategies, and coordination among agencies. According to (Ullah & Abbasi, 2024), Eco-Geopolitics can prove highly useful in this regard, as this concept has been said to promote the interconnectedness of vulnerabilities in nature, resource security, and security itself in order to forecast potential threats as opposed to being forced into reaction.

Water and food security are also chief components of national security in Pakistan under climate change. The fact that Pakistan is dependent on the Indus basin system and its changing monsoons and Hindu Kush-Karakoram-Himalayan glacial melting make it a contested region for water access and distribution on several levels and in different regions and international relations, particularly in its territorial differences in Punjab and Sindh provinces and its demarcations with its regional rivals and next-door nations such as India and Afghanistan, according to (Ahmed, 2019).

Climate adaptation within the framework of national security also involves bolstering institutional capacity and governance structures. According to (Aslam, 2024), decentralized and community-oriented initiatives with strong central oversight allow the government to be much more responsive to localized manifestations of climate impacts. Such initiatives include investing in climate-resilient infrastructure, upgrading energy and transportation networks, and building contingency planning mechanisms. Furthermore, such data must be systematically collected, monitored, and shared at the national and regional levels to implement an information-driven decision-making process. Regional collaborative platforms on climate security, which entail active engagement with non-state actors, civil society, and international organizations, would help Pakistan adopt a holistic security perspective that considers ecological vulnerabilities as Finally, in terms of the broader implications for policy coherence and strategic foresight, the inclusion of climate change adaptation in security planning is highly significant. Policymakers can therefore reconcile their policies with respect to the environment, economy, and defense thereby making the country more resilient to climate change by considering climate change as a national and regional security issue. The future studies should, therefore, focus on the micro-level impact of climate change in communities, assessing the efficiency of the present adaptation measures taken, and identifying an opportunity for collective action on shared water resources strategic variables.

Empirical Evidence from Pakistan (2015-2025)

Empirical studies conducted from 2015 to 2025 consistently point out the linkage between climate change and the socio-political setup of Pakistan. (Zubair, 2024) reveal that natural calamities caused by climate change result in denting economic growth due to their impact on agricultural output, which employs a major chunk of the population. Agricultural insecurity contributes to increased rural poverty and enhances rural-urban migration, leading to a surge in demand on urban infrastructure and services.

The case of water insecurity is particularly pertinent. "Water shortage is a non-traditional security threat that impacts internal stability and regional relations." (Solangi, 2025) Given that agricultural and energy production depends on a high supply of water, water scarcity impacts agriculture as well as energy production, since the country relies on hydropower.

Climate change has also intensified internal displacement. Flood-induced displacement disrupts livelihoods and social networks, contributing to human insecurity and increasing the risk of social unrest. (Aslam, 2024) note that displacement can create conditions conducive to radicalization and criminal activity if governance responses are inadequate.

At the regional level, climate change has implications for Pakistan's relations with neighboring states. Shared river systems with India and Afghanistan, governed by fragile agreements, are increasingly stressed by changing hydrological patterns. (Ahmed, 2019) argue that climate-induced water stress has the potential to exacerbate existing geopolitical rivalries, particularly in the Indus Basin.

Climate Change and Security Threats: National, Human, and Regional Dimensions

The results highlight that climate change is having an impact on different aspects of security in Pakistan. In terms of national security, the threat of climate-related disasters puts a strain on the military and civilian capabilities in the country to the point where the military has to be constantly called to respond to the disaster relief efforts. This is an important aspect to highlight regarding national security because it can be seen that the military presence helps increase cooperation with the civilian sector; however, this is at the cost of conventional defense preparedness (Bibi, 2025).

Human security could be considered the most impacted in this regard. "Food insecurity, threats to health, and displacement are especially experienced by vulnerable sections of society, such as women and children" (Ullah, 2025) have rightly included human dignity and human livelihood in human security, which is being threatened by climate change.

Food security and water security are inextricably linked. Indications of reduced agricultural productivity because of fluctuating rainfall and heat stress can be detrimental to the country's food security stocks, making the country reliant on imports and vulnerable to international market trends. It has been pointed out that water scarcity can be damaging to food security as well as social stability, thus perpetuating the climate-security nexus (Mukhtar, 2019).

Regional implications of security

Climate stress factors

Cross-border migration

Opportunities for regional collaboration

Regional implications of security

There is equal importance attached to the implications for regional security. Border migrations due to climate factors may increase, as well as competition for resources. Although there are opportunities for regional collaboration, such as disaster relief, weaker regional institutions hinder such chances (Khan, 2021).

Eco-Geopolitics as an Analytical Lens

Eco-geopolitics constitutes a broad framework through which many aspects regarding how environmental dynamics affect the strategic environment in which Pakistan exists can be understood. Eco-geopolitics enhances conventional geopolitics because, apart from considering strategic matters, eco-geopolitics also takes into account environmental

vulnerability that, in turn, can affect states' actions. To Pakistan, water, agricultural production, and environmental sustainability emerge as factors that fall into a strategic category.

Moreover, this framework recognizes the importance of non-state actors, such as local communities, non-governmental organizations, and international institutions, in influencing climate security outcomes. According to authors (Saad S. , 2024), climate security needs multi-level climate governance because it is a decentralized risk factor.

The geopolitics of ecology also rebrands security policymaking in terms of prevention and resilience, rather than reaction. Integrating climate adaptation into national security planning enables states to be more proactive in risk anticipation and reducing vulnerability. This perspective is supported, as results indicated that the gradual integration of climate resilience strategies by Pakistan reflects an emergent eco-geopolitical orientation; its implementation remains uneven (Ullah & Abbasi, 2024).

Policy Implications and Future Research Directions

Results have important implications for policy. First, adaptation to climate change needs to be factored into national security and development planning. Disaster risk reduction, climate-resilient infrastructure, and early warning systems must be given high priority in an effort to build down vulnerability (Aslam, 2024).

Second, cooperation at the regional level is imperative. There is a need for cooperation in regions for water management, disaster management, and even the sharing of data. There is a possibility that it can reduce the threat of conflict caused by climate change (Ahmed, 2019).

Thirdly, the institutions that deal with security must adopt the human-centered perspective of climate change. Food insecurity, displacement of people, and loss of livelihoods can diminish some of the indirect risks of climate change that affect the security of the population.

Future work would focus on micro-level research on interactions between climate and security, especially at the level of the communities affected, and assessment of the effectiveness of existing policies of climate adaptation. South Asia can be a region of case studies to highlight regional aspects of eco-geopolitics.

Conclusion

The conclusion drawn from this research is that climate change has already established itself as a threat multiplier in the domain of non-traditional security risks in Pakistan, which will continue to affect the country for the decade 2015 to 2025 and beyond in the coming decades. The research outcomes have clearly revealed that climate change, resulting in the occurrence of natural phenomena like annual flooding, high levels of heatwaves, rising glacier melt, and conditions of arable water shortages, is not an independent factor but instead acts as a threat multiplier that multiplies existing risks in the domain of poverty, inadequate infrastructure, and population pressures, directly affecting the country's security preparedness, human security, and stability, besides adding pressures on security resources in Pakistan.

The use of eco-geopolitics as a concept analysis framework provides a more inclusive understanding of the manner in which the environment impacts the perspective of security, as well as the dynamics of power shifts, in Pakistan. Unlike the concept of the environment in traditional geopolitics, eco-geopolitics considers vulnerability, resource security, and the importance of resilience as core factors of security. The analysis reveals

that while the issue of climate change has been recognized in the security context of Pakistan, the level of implementation remains patchy, largely one of response. The way forward in dealing with the security challenge of climate change, therefore, is to shift away from the military perspective and toward an encompassing concept of security that takes precedence through climate adaptation, security of civilians, and regional cooperation.

Recommendations

It is now very strongly recommended that climate change be embedded at the core of Pakistan's non-traditional security concern within its national security doctrine, in light of the findings of this study. Policymakers need to look beyond mere reactive disaster management and prioritize a long-term eco-geopolitical strategy focusing on climate risk assessment, prevention, and resilience-building. This necessitates closer institutional coordination among security agencies, climate authorities, disaster management bodies, and development institutions to ensure coherent and timely responses to climate-related threats.

This must be matched by a stronger focus on human security, through policies and programs that address water and food insecurity, public health vulnerabilities, and climate-induced displacement by investing in climate-resilient agriculture, good water governance, and adaptive urban planning. Special attention needs to be paid to vulnerable groups, whose plight increases inequality-driven security risks. Regionally, Pakistan needs to elevate climate diplomacy by fostering cooperation on transboundary water management, early warning systems, and joint disaster response with neighboring states. Finally, continuous support for research, data-driven policymaking, and community-level adaptation practices is warranted to build long-term national and regional security against accelerated climate change.

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