



Climate Change, Migration, and National Security in Pakistan: Assessing The Emerging Nexus and Its Policy Implications

Dr. Muhammad Waqas Gondal¹, Mohammad Saleem², Alam Nawaz³, Azra Soomro⁴

¹ University of the Punjab.

Email: drwaqasgondal@gmail.com

² Assistant Professor, Shangla College of Nursing and Health Sciences, Alpuri, District Shangla.

Email: saleemscn@gmail.com

³ MPhil Scholar, National Institute of Intelligence and Security Studies, Quaid-i-Azam University, Islamabad.

Email: alamshukara512@gmail.com

⁴ PhD Scholar, Management Science and Engineering, School of Business, Qingdao University, Qingdao 266071, P.R. China.

Email: azrasoomro@hotmail.com

ARTICLE INFO	ABSTRACT
Submission: September 03, 2026 Revised: October 02, 2026 Accepted: October 10, 2026 Available Online: October 19, 2026 Keywords: Climate Change, Migration, National Security, Climate Mobility, Displacement, Human Security, Pakistan, Adaptation. Corresponding author: Dr. Muhammad Waqas Gondal Email: drwaqasgondal@gmail.com	Climate change is increasingly affecting Pakistan's livelihoods, human mobility, economic stability, and national security. This study examines the relationship between climate change, migration, and national security in Pakistan, focusing on how climate hazards disrupt livelihoods, generate displacement, and create wider security pressures. Using qualitative analysis of secondary data from government institutions, international organizations, policy documents, and academic literature, the study finds that climate change acts primarily as a threat multiplier, intensifying existing vulnerabilities such as poverty, weak infrastructure, water and food insecurity, and institutional limitations. Migration and displacement emerge as the principal mechanisms connecting climate-related disruption with human-security and broader national-security challenges. The 2022 floods, which affected approximately 33 million people and displaced nearly 8 million, demonstrate how climate hazards can generate interconnected humanitarian, economic, livelihood, and governance crises. The study further finds that climate-induced migration can increase pressure on housing, employment, water, public services, and urban infrastructure, although migration can also serve as an adaptation strategy when adequately managed. While Pakistan has developed important climate, adaptation, disaster-management, and security policies, gaps remain in coordination, financing, implementation, data, and institutional capacity. The study concludes that Pakistan requires an integrated climate-mobility-security framework linking climate adaptation, livelihood protection, planned mobility, urban resilience, and national-security planning.

Introduction

Climate change has emerged as one of the most significant non-traditional security challenges of the twenty-first century, particularly for developing countries whose social and economic systems are highly dependent on climate-sensitive resources. Its consequences extend beyond environmental degradation to affect livelihoods, food and water security, public health, economic stability, and human mobility. The Intergovernmental Panel on Climate Change (IPCC, 2022) establishes that climate hazards such as floods, droughts, heavy rainfall and other extreme events can directly and indirectly drive migration and displacement, while the scale and nature of such movements depend on socioeconomic, political and institutional conditions. Thus, climate change should

not be understood as an isolated environmental problem but as a factor that can intensify existing vulnerabilities and generate wider human-security challenges.

Pakistan represents an important case for examining this emerging relationship. The country is highly exposed to climate-related hazards while simultaneously facing socioeconomic vulnerabilities, dependence on climate-sensitive livelihoods, water stress, rapid urbanization and institutional constraints. The devastating floods of 2022 demonstrated the scale of this vulnerability: approximately 33 million people were affected, while damage exceeded US\$14.9 billion and economic losses reached about US\$15.2 billion (Government of Pakistan et al., 2022). The disaster also produced large-scale displacement and significant losses of housing, agricultural assets, infrastructure and livelihoods. The World Bank (2022) consequently emphasized that climate change poses a substantial threat to Pakistan's development, poverty reduction and economic resilience.

The relationship between climate change and migration is particularly important because environmental shocks frequently affect human mobility through the disruption of livelihoods. Floods can destroy homes and agricultural land, droughts can reduce agricultural productivity, while extreme heat and water scarcity can undermine employment and household income. Consequently, affected populations may temporarily evacuate, migrate to other rural areas, move towards cities, or undertake longer-term relocation. However, climate change does not independently determine migration decisions. Rather, climate-related pressures interact with economic conditions, household resources, governance, social networks and adaptive capacity (IPCC, 2022). Migration may therefore represent both a consequence of climate vulnerability and, when voluntary and adequately managed, an adaptation strategy (International Organization for Migration [IOM], 2021).

The security implications emerge when climate-induced mobility interacts with existing socioeconomic and institutional pressures. Large-scale displacement can increase demand for housing, employment, water, healthcare, education and other public services in receiving areas. Where institutional capacity is inadequate, these pressures can contribute to socioeconomic insecurity, resource competition, social tensions and governance challenges. This does not imply that climate-induced migration automatically causes conflict or threatens the state. Rather, climate change can operate as a **threat multiplier**, intensifying pre-existing vulnerabilities and increasing the probability of insecurity where adaptive and governance capacities are weak.

Pakistan has increasingly recognized the importance of climate adaptation through policy initiatives including the **National Climate Change Policy 2021**, **Updated Nationally Determined Contributions 2021**, and **National Adaptation Plan 2023** (Ministry of Climate Change and Environmental Coordination, 2023). Nevertheless, climate change, migration, disaster management and national security have often been addressed through separate policy and institutional arrangements. This creates an important policy and research question concerning whether Pakistan's existing institutional framework is sufficiently prepared to manage climate-induced mobility and its potential implications for national resilience. The study therefore examines the emerging nexus between climate change, migration and national security in Pakistan, with particular attention to the pathways through which climate-related environmental stress can generate displacement and subsequently affect economic, social, human and state security.

Research Gap

Existing literature has substantially examined Pakistan's climate vulnerability, disaster risks, environmental degradation and climate-induced displacement, while separate scholars have explored migration and national security. However, there remains a need for a more integrated analysis of **climate change, migration and national security as an interconnected nexus**. In particular, insufficient attention has been given to migration as the mediating mechanism through which climate-related livelihood and environmental pressures can translate into wider security challenges. There is also a need to examine how governance capacity, urban pressures, resource insecurity and policy implementation shape this relationship. This study addresses this gap by bringing these dimensions together within a single analytical framework and assessing their implications for Pakistan's national resilience and policy response.

Research Objectives

1. To examine the relationship between climate change and migration in Pakistan, particularly the role of climate-induced livelihood and environmental pressures in generating displacement and human mobility.
2. To analyze how climate-induced migration influences human, economic, social, food and water security and contributes to the emerging national-security challenges of Pakistan.

3. To assess Pakistan's existing policy and institutional response to the climate–migration–security nexus and propose an integrated policy framework for strengthening climate resilience and national security.

Literature Review

The literature on climate change, migration, and security has increasingly moved away from treating these issues as separate policy concerns and toward understanding them as interconnected processes. Earlier scholars largely examined climate change through the lens of environmental degradation and migration through economic or social explanations. More recent research, however, argues that climate change can alter patterns of human mobility by affecting livelihoods, agricultural productivity, water availability, housing, and physical safety. The Intergovernmental Panel on Climate Change (IPCC, 2022) emphasizes that climate hazards can directly and indirectly influence migration and displacement, while also stressing that mobility outcomes depend on socioeconomic conditions, governance, livelihoods, and people's capacity to adapt. Thus, climate change should not be understood as an automatic or single cause of migration; rather, it interacts with existing vulnerabilities and acts as a factor that can increase the pressure to move. This perspective is particularly relevant to Pakistan, where environmental risks intersect with poverty, rapid population growth, livelihood dependence on agriculture, weak infrastructure, and uneven institutional capacity.

The theoretical literature on climate-induced migration has also challenged the earlier simplified idea of the “climate refugee.” Black et al. (2011) argue that migration decisions are shaped by a combination of environmental, economic, political, demographic, and social factors. Similarly, McLeman and Smit (2006) explain that environmental change influences migration through its effects on household livelihoods and adaptive capacity rather than operating as an isolated driver. This approach is important for understanding Pakistan because floods, droughts, extreme heat, water scarcity, and changing agricultural conditions may create pressures for mobility, but the decision to migrate depends on household resources, employment opportunities, social networks, land ownership, and access to state assistance. Recent scholarship on Pakistan similarly demonstrates that climate-related migration is a complex process involving both rapid-onset disasters and slower environmental changes. Migration can therefore be temporary, seasonal, circular, permanent, forced, or voluntary depending upon the nature of the climatic shock and the socioeconomic circumstances of affected communities.

A major strand of the literature focuses specifically on the relationship between climate change and internal migration in Pakistan. Research indicates that floods and droughts have become important contributors to population displacement, particularly in vulnerable rural areas. Climate-related shocks can destroy homes, crops, livestock, infrastructure, and employment opportunities, thereby weakening the economic foundations that allow households to remain in their places of origin. Kamal (2023), for example, argues that the experience of rural Pakistan demonstrates the importance of considering climate change and migration together because ecological shocks interact with historical patterns of land and water management and socioeconomic marginalization. The study also cautions against viewing affected populations simply as passive victims of environmental change because mobility may itself constitute an adaptation strategy. This finding is important for the present study because it establishes migration as a **mediating mechanism** between climate stress and broader social and security outcomes rather than treating migration merely as an outcome of climate change.

The Pakistani literature further shows that climate-induced migration is closely connected with socioeconomic vulnerability. Farah et al. (2023), in a systematic review of the literature, identify poverty, food insecurity, water shortages, agricultural decline, economic losses, health problems, and gender inequalities among the major risks associated with climate-induced migration in Pakistan. Their findings suggest that climate mobility can reproduce or deepen pre-existing inequalities because households with fewer financial and social resources have fewer options for safe adaptation. Vighio (2024) similarly identifies flooding, drought, and rising temperatures as important environmental pressures that contribute to socioeconomic vulnerability and migration in Pakistan. These studies collectively indicate that the relationship between climate change and migration is not simply environmental; it is mediated by the distribution of economic resources, access to services, livelihood opportunities, and institutional support. Consequently, climate-induced migration needs to be examined within the broader structure of vulnerability rather than as an independent demographic phenomenon.

The literature on the 2022 floods provides particularly important empirical evidence for understanding this relationship. The floods represented a major climate-related disaster that affected millions of people, disrupted livelihoods, damaged infrastructure, and generated extensive displacement. Hashmi (2023), examining Rajanpur and Taunsa Sharif, demonstrates that the floods produced interconnected problems involving damaged livelihoods, water insecurity, shelter, agricultural disruption, and human-security concerns. The study therefore provides evidence for understanding how an environmental disaster can move beyond immediate physical destruction and create longer-term socioeconomic and security vulnerabilities. Rather than considering displacement as

the endpoint of a disaster, the literature increasingly suggests that displacement can generate secondary challenges in places of destination, particularly where receiving communities already face limited employment, housing, public services, and infrastructure.

The security dimension of climate change has developed alongside this migration literature. Traditional national security approaches primarily emphasize military threats, territorial integrity, and interstate conflict, whereas the environmental and human-security literature broadens security to include threats to livelihoods, food, water, health, economic stability, and human well-being. The “threat multiplier” perspective is particularly relevant because climate change rarely creates security problems independently; instead, it can intensify pre-existing political, economic, social, and institutional weaknesses. The IPCC (2022) similarly recognizes risks to human mobility and human security but cautions against assuming that migration automatically produces conflict. Its assessment indicates that climate-related mobility can interact with existing vulnerabilities and governance problems, while evidence does not support a universal claim that human mobility itself creates a general risk of peace breakdown. This distinction is essential for an academically balanced assessment of Pakistan’s climate-security nexus.

Within Pakistan, emerging scholars increasingly connects climate change with non-traditional security challenges. Saad et al. (2024) argue that climate change can contribute to internal migration and interact with existing resource pressures and conflicts in provinces including Khyber Pakhtunkhwa, Sindh, and Balochistan. Their work demonstrates the importance of examining climate change through an environmental-security perspective because recurring floods, resource scarcity, and population movements may place additional pressure on already vulnerable communities. However, such findings should be interpreted cautiously: climate change should be considered a **threat multiplier**, not a direct or automatic cause of conflict. Political grievances, institutional weaknesses, economic inequality, resource governance, and existing social tensions remain important intervening variables.

An important development in recent literature is the increasing attention to the security implications of climate-induced displacement in urban areas. Internal migration can transfer climate-related pressures from vulnerable rural locations to cities where housing, employment, water, sanitation, transport, and public services may already be under pressure. Recent research on Karachi and Lahore argues that displacement following the 2022 floods interacted with existing urban vulnerabilities and generated concerns regarding social exclusion, competition over urban space and resources, and social cohesion. This emerging scholarship suggests that the climate-migration-security relationship cannot be understood only in rural or disaster-affected areas; cities are becoming important spaces where the consequences of climate mobility are experienced and potentially transformed into governance and security challenges.

The literature also increasingly recognizes that migration is not necessarily a negative outcome of climate change. Mobility can provide households with an adaptive mechanism through which they diversify income, reduce exposure to environmental hazards, and maintain livelihoods. Recent Pakistan-focused research identifies a shift from viewing climate migration solely as forced displacement toward understanding mobility as a potential adaptation strategy, although the benefits of mobility are distributed unevenly. Households with financial resources, social networks, education, and access to employment may be better positioned to use migration as adaptation, whereas poorer and marginalized populations may experience displacement without adequate choices or protection. This distinction is significant for the present study because national security implications depend not simply on the volume of migration but also on whether migration occurs in a planned, safe, and dignified manner or through unmanaged displacement.

Another important theme in the literature concerns institutional and policy responses. Pakistan has increasingly recognized climate change as a national policy concern, but studies continue to identify weaknesses in coordination between climate governance, disaster management, migration policy, development planning, and national security institutions. Recent research examining Pakistan’s National Security Policy argues that although climate change has gained recognition within the national-security framework, substantial gaps remain between policy recognition and practical implementation, particularly regarding displacement, food and water security, economic stability, and institutional coordination. Similarly, Khan and Shafique (2026) identify institutional fragmentation and limited implementation capacity as important barriers to integrating climate change effectively into Pakistan’s national-security planning. These findings suggest that the security implications of climate-induced migration are influenced not only by environmental pressures but also by the capacity of the state to anticipate, manage, and respond to population movements.

Therefore, the present study builds on the existing literature while addressing this conceptual and empirical gap by examining climate change, migration, and national security as interconnected components of a single process. Its central analytical proposition is that **climate change does not directly and automatically produce national-security threats; rather, climatic hazards**

interact with socioeconomic vulnerability and institutional weaknesses, generate livelihood and human-security pressures, encourage or compel migration, and may subsequently place additional pressure on resources, urban systems, governance, and social stability. In this framework, migration represents the critical transmission mechanism connecting climate vulnerability with wider security consequences. This approach allows the study to move beyond the simple question of whether climate change causes migration and instead examine how climate-induced mobility can influence Pakistan's broader security environment and what policy measures can reduce these risks.

Research Methodology

This study adopts a **qualitative and exploratory research design** based on **secondary data** to examine the relationship between climate change, migration, and national security in Pakistan. The study specifically analyzes how climate-related hazards affect livelihoods and socioeconomic conditions, how these pressures contribute to migration and displacement, and how resulting population movements may create wider human, economic, social, governance, and national-security challenges.

The study uses secondary data from **official government institutions, international organizations, and peer-reviewed academic literature**. Major sources include the Government of Pakistan, Ministry of Climate Change and Environmental Coordination, National Disaster Management Authority (NDMA), Pakistan Meteorological Department (PMD), Pakistan Bureau of Statistics (PBS), World Bank, International Organization for Migration (IOM), United Nations Development Programme (UNDP), International Labour Organization (ILO), Food and Agriculture Organization (FAO), and Intergovernmental Panel on Climate Change (IPCC). Relevant national policies, including the **National Climate Change Policy, National Adaptation Plan, and Updated Nationally Determined Contributions**, are also examined. Pakistan's National Adaptation Plan specifically emphasizes evidence-based adaptation and coordination among federal and provincial institutions, making it relevant to the policy dimension of this study.

The study primarily examines the period **2010–2026**, while earlier academic literature is used to establish the theoretical foundation. Particular attention is given to the **2022 floods as a case study** because they provide significant evidence of the climate–migration–security relationship. The floods affected approximately 33 million people, displaced more than 8 million, and caused damages and economic losses exceeding US\$30 billion, demonstrating how climate-related disasters can simultaneously affect population mobility, livelihoods, infrastructure, and economic stability (World Bank, 2022).

The collected material is analyzed through **qualitative thematic analysis**. Evidence is organized around five major themes: **(1) climate vulnerability, (2) livelihood and socioeconomic impacts, (3) migration and displacement, (4) human and national-security implications, and (5) policy responses**. The study uses comparative evidence from different provinces and climate-vulnerable regions where relevant. Quantitative statistics from secondary sources are used to support the qualitative analysis rather than to conduct primary statistical testing.

To ensure reliability, the study applies **source triangulation** by comparing information from government reports, international organizations, academic studies, and policy documents. The research recognizes that climate-induced migration is influenced by multiple factors and therefore does not assume that climate change automatically causes migration or conflict. Instead, it examines climate change as a **threat multiplier** whose security consequences depend on socioeconomic vulnerability, migration patterns, governance capacity, and institutional responses. This methodology enables the study to systematically assess the emerging **climate change–migration–national security nexus in Pakistan** and develop evidence-based policy implications.

Climate Change and Pakistan's Vulnerability

Pakistan's vulnerability to climate change is not determined by exposure to environmental hazards alone. It results from the interaction between **geographic exposure, socioeconomic deprivation, dependence on climate-sensitive sectors, water stress, rapid urbanization, disaster risk, and institutional weaknesses**. Although Pakistan contributes less than 1% of global greenhouse-gas emissions, it faces recurrent floods, droughts, heatwaves, glacial hazards, changing rainfall patterns, and sea-level rise. The World Bank and Asian Development Bank identify Pakistan as highly exposed to both rapid-onset and slow-onset climate risks, with significant consequences for livelihoods, infrastructure, poverty, and economic development (Asian Development Bank [ADB] & World Bank, 2021). More recently, the World Bank has continued to identify climate change as a major risk to Pakistan's poverty reduction, livelihoods, and macroeconomic stability (World Bank, 2026).

Geographic Vulnerability

Pakistan's geography creates multiple and overlapping forms of climate exposure. The country contains high mountain regions, glaciers, river plains, arid and semi-arid zones, deserts, and a long Arabian Sea coastline. The Indus River system supports much of the country's population and economy but also creates significant flood exposure. Northern areas face risks associated with glacier melt, glacial lake outburst floods, landslides, and changing precipitation, while southern and coastal areas face heatwaves, drought, flooding, cyclones, and sea-level rise. The World Bank and ADB identify floods, droughts, extreme heat, changing monsoon patterns, and glacier-related hazards as major climate risks for Pakistan (ADB & World Bank, 2021). Recent assessments further indicate that continued warming, changing precipitation, glacier melt, and sea-level rise are likely to increase the country's exposure to multiple hazards (World Bank, 2025).

Socioeconomic Vulnerability

Climate hazards become more damaging when they affect populations with limited economic resources and weak social protection. Poverty, unemployment, informal employment, inadequate housing, and unequal access to health and public services reduce households' ability to prepare for and recover from climate shocks. The 2022 floods demonstrated this relationship clearly: more than **33 million people were affected**, while more than **8 million were displaced**. The disaster caused more than **US\$30 billion in damages and economic losses**, severely affecting livelihoods and household assets (World Bank, 2022).

The socioeconomic dimension is particularly important for the migration-security nexus. Poor households often have fewer resources to adapt in place and may therefore be more likely to adopt distress migration following repeated climate shocks. Loss of income, livestock, crops, homes, and employment can transform a temporary environmental disaster into longer-term socioeconomic insecurity. Consequently, climate change can deepen existing inequalities and increase pressure on households to migrate. This demonstrates that vulnerability is produced through the interaction of **environmental exposure and socioeconomic capacity**, rather than climate exposure alone.

Agricultural Vulnerability

Agriculture represents one of the most climate-sensitive components of Pakistan's economy and rural livelihoods. Agricultural production depends heavily on water availability and predictable temperature and rainfall patterns. Increasing temperatures, irregular monsoon rainfall, droughts, floods, and water shortages can reduce crop yields and damage livestock. The 2022 floods illustrate the scale of this vulnerability: agriculture and livestock suffered approximately **US\$3.7 billion in direct damages**, making it one of the three most severely damaged sectors alongside housing and transport and communications (Government of Pakistan et al., 2022).

Agricultural vulnerability has direct implications for migration. When crops, livestock, agricultural land, and rural infrastructure are repeatedly damaged, households may lose their primary sources of income and food security. Over time, this can encourage seasonal, rural-to-urban, or permanent migration. Agriculture therefore represents an important pathway through which **climate change can generate livelihood insecurity and subsequently increase mobility pressures**.

Water Vulnerability

Pakistan's climate-security vulnerability is also strongly connected with water. The country depends heavily on the Indus River system for agriculture, domestic consumption, energy generation, and economic activity. Climate change creates a paradox: Pakistan can simultaneously experience destructive floods and increasing long-term water stress. Changing precipitation, rising temperatures, glacier dynamics, droughts, and increasing demand can make water availability increasingly uncertain. The World Bank and ADB identify water resources as one of Pakistan's major climate-vulnerable sectors (ADB & World Bank, 2021). Pakistan's National Climate Change Policy likewise identifies water resources as a priority area for adaptation (Government of Pakistan, 2021).

Water insecurity can contribute to agricultural losses, food insecurity, livelihood decline, and competition over scarce resources. In areas where rural livelihoods depend heavily on irrigation and livestock, prolonged water stress can increase the incentive to migrate. Therefore, water vulnerability provides another important link between climate change and population mobility and may become a wider governance and security concern where institutional capacity to manage competing demands is limited.

Urban Vulnerability

Rapid and poorly planned urbanization increases Pakistan's exposure to climate-related risks. Cities face rising temperatures, urban flooding, inadequate drainage, water shortages, air pollution, infrastructure stress, and the expansion of informal settlements. Climate-induced migration can further intensify these pressures by increasing demand for housing, employment, healthcare, sanitation, transport, and other public services. The 2022 floods demonstrated the wider consequences of infrastructure and housing vulnerability, with **housing recording approximately US\$5.6 billion in damages**, the largest sectoral damage in the PDNA (Government of Pakistan et al., 2022).

This creates an important connection with the subsequent migration discussion: when displaced rural populations move toward urban centres, climate vulnerability can be transferred rather than eliminated. Receiving cities may therefore become new sites of socioeconomic and human-security pressure if population movements are not accompanied by adequate planning, employment opportunities, housing, and public services.

Disaster Vulnerability

Pakistan's exposure to recurring natural hazards demonstrates its high disaster vulnerability. Floods, droughts, heatwaves, landslides, and other hazards repeatedly affect communities and infrastructure. The **2022 floods alone caused more than US\$14.9 billion in damages and approximately US\$15.2 billion in economic losses**, while resilient rehabilitation and reconstruction requirements were estimated at at least **US\$16.3 billion** (Government of Pakistan et al., 2022).

The significance of these figures extends beyond immediate disaster management. Repeated disasters can destroy household assets, interrupt education and employment, increase poverty, and weaken the capacity of communities to recover before the next shock occurs. Such cumulative vulnerability can transform temporary displacement into longer-term migration. Disaster vulnerability therefore provides a crucial bridge between **climate hazards, displacement, livelihood insecurity, and national resilience**.

Institutional Vulnerability

Finally, Pakistan's climate vulnerability is influenced by institutional capacity. Effective climate adaptation requires coordination among federal and provincial governments, disaster-management institutions, local authorities, water and agriculture agencies, and development organizations. Pakistan has established important policy frameworks, including the **Updated National Climate Change Policy 2021, Nationally Determined Contribution 2021, and National Adaptation Plan 2023**, demonstrating growing recognition of climate risks at the policy level (Ministry of Climate Change and Environmental Coordination, 2026).

However, policy recognition does not automatically translate into effective implementation. Limited resources, institutional fragmentation, weak local-level capacity, inadequate infrastructure, and difficulties in coordinating climate adaptation and disaster management can increase vulnerability. The 2022 floods exposed the enormous scale of recovery and reconstruction requirements and led to the development of the **Resilient, Recovery, Rehabilitation and Reconstruction (4RF) framework**, illustrating both the importance of institutional coordination and the scale of the challenge (Government of Pakistan, 2023).

Overall, Pakistan's climate-security vulnerability is best understood as the product of **environmental exposure multiplied by socioeconomic and institutional weakness**. Climate hazards become security-relevant when they destroy livelihoods, intensify poverty and food or water insecurity, displace populations, place pressure on urban areas and public services, and challenge the capacity of institutions to respond. This provides the essential foundation for examining the next dimension of the study: **how climate-related environmental and livelihood pressures translate into migration and displacement, and how those movements may subsequently generate broader security implications for Pakistan**.

Climate Change and Migration in Pakistan

Climate change is increasingly influencing patterns of human mobility in Pakistan through sudden disasters as well as gradual changes in livelihoods and living conditions. Migration, however, should not be understood as an automatic consequence of climate change. Rather, climatic pressures interact with poverty, agricultural dependence, water insecurity, employment conditions, infrastructure, and institutional capacity to shape whether people remain, move temporarily, or migrate permanently. The **Intergovernmental Panel on Climate Change (IPCC, 2022)** emphasizes that climate-related mobility is context-specific and that most climate-related movement occurs within national borders. In Pakistan, this makes internal migration particularly important for understanding the connection between climate change and national security.

Climate-Induced Displacement

Climate-induced displacement occurs when people are forced to leave their homes because of floods, droughts, extreme heat, landslides, sea-level rise, or other environmental pressures. Pakistan's 2022 floods provide the clearest recent example. The disaster affected approximately **33 million people and displaced more than 8 million**, while more than 1,700 people lost their lives. The floods also damaged homes, agricultural land, livestock, roads, schools, and health facilities (World Bank, 2022). These figures demonstrate that climate-related displacement is not simply a humanitarian issue; it can disrupt livelihoods, increase poverty, and create prolonged pressure on receiving communities.

Flood-Induced Migration

Flooding represents one of the most significant immediate drivers of climate-related displacement in Pakistan. The 2022 floods submerged approximately one-third of the country and destroyed or damaged millions of homes and large areas of agricultural land. The Post-Disaster Needs Assessment estimated damages of more than **US\$14.9 billion**, economic losses of approximately **US\$15.2 billion**, and reconstruction needs of at least **US\$16.3 billion** (Government of Pakistan et al., 2022). The destruction of houses and livelihoods forced many affected populations into temporary shelters, camps, higher ground, or nearby towns and cities. Importantly, flood displacement can continue after floodwaters recede because destroyed livelihoods and infrastructure may prevent households from returning. IOM reported that a substantial number of flood-affected people remained displaced beyond the immediate emergency period, illustrating how temporary disaster displacement can evolve into prolonged mobility (IOM, 2024).

Drought and Livelihood Migration

Unlike floods, drought usually generates **slow-onset migration** by gradually weakening rural livelihoods. Drought reduces water availability, agricultural productivity, livestock health, and household income. This is particularly significant in arid and semi-arid regions such as **Tharparkar in Sindh and parts of Balochistan**, where communities depend heavily on agriculture and livestock. Research on the Thar Desert indicates that people undertake both seasonal and permanent migration in response to drought and livelihood deterioration, demonstrating that mobility can become a household adaptation strategy (Khan et al., 2024). The important point is that drought may not immediately displace a population; instead, repeated livelihood losses can progressively reduce the economic viability of remaining in the place of origin.

Heat and Labour Mobility

Rising temperatures also influence migration by affecting the ability of workers to maintain livelihoods. Agricultural workers, construction labourers, and other outdoor workers are particularly exposed to heat stress. Evidence from a **21-year longitudinal study of rural Pakistan covering 1991–2012** found that heat stress was associated with increased long-term migration, providing important empirical evidence that extreme temperature can influence permanent mobility rather than merely temporary movement (Mueller et al., 2014). Heat therefore represents an indirect migration driver: rather than destroying a home, it can reduce labour productivity, agricultural returns, and household income, thereby encouraging workers to seek employment in less climate-exposed locations.

Water Scarcity and Migration

Water insecurity provides another important pathway between climate change and migration. Pakistan's dependence on the Indus River system makes changes in water availability particularly significant for agriculture and rural livelihoods. Increasing temperatures, changing precipitation patterns, drought, glacier-related changes, and rising demand can create pressure on already stressed water systems. When water becomes insufficient for crops, livestock, and household needs, rural households may diversify their livelihoods or move toward areas offering better economic and water-security opportunities. Thus, water scarcity can function as a **slow-onset migration driver**, particularly when combined with poverty and declining agricultural productivity. Climate and water pressures may consequently transform environmental stress into socioeconomic insecurity and mobility.

Rural-to-Urban Climate Migration

A major consequence of climate-induced mobility is the movement of rural populations toward urban centres. Floods, droughts, agricultural losses, and declining rural employment can encourage households to seek alternative income opportunities in cities. However, migration to cities does not necessarily remove climate vulnerability. Migrants may settle in informal or poorly serviced areas where they face inadequate housing, sanitation, drainage, healthcare, and employment opportunities. The result can be a **transfer of vulnerability from rural areas to urban areas**. This is particularly important for national security because unmanaged

population concentration can place additional pressure on public services, employment markets, infrastructure, and local governance. The 2022 floods demonstrated this process on a large scale, with millions of people experiencing displacement and livelihood disruption. (World Bank, 2022).

Temporary versus Permanent Migration

Climate-related mobility in Pakistan occurs along a continuum rather than through a simple distinction between “migration” and “displacement.” Some people temporarily relocate during floods and return after reconstruction, while others remain away because their homes, farmland, employment, or community infrastructure have been permanently damaged. Seasonal migration can also become permanent when repeated environmental shocks make recovery increasingly difficult. Evidence from rural Pakistan demonstrates that climate stress can contribute to long-term migration, while the 2022 floods showed how sudden disasters can initially produce mass temporary displacement (Mueller et al., 2014; IOM, 2024).

Climate Migration as Adaptation

Migration should not always be interpreted as a failure of climate adaptation. Under certain circumstances, mobility can be a rational household strategy for reducing exposure to environmental risks and diversifying income. A household may send one or more members to another location for employment while maintaining residence in the area of origin. Similarly, seasonal migration can provide income during periods of drought or agricultural decline. Research on Pakistan's Thar region shows that migration can function as an adaptation mechanism in response to drought (Khan et al., 2024). However, migration becomes problematic when it is **forced, unmanaged, unsafe, or unsupported**, particularly when displaced populations lack housing, employment, healthcare, and social protection.

Vulnerability of Displaced Populations

Displacement can create new forms of vulnerability even after people escape the original environmental hazard. Displaced populations may lose homes, employment, land, livestock, documentation, education, and social networks. Women, children, older persons, persons with disabilities, and poor households are particularly vulnerable. During the 2022 floods, approximately **4.3 million workers were affected**, while estimates suggested that **8.4–9.1 million people could be pushed into poverty** without effective recovery measures (International Labour Organization [ILO], 2022). Such socioeconomic deterioration demonstrates why climate-induced migration can become a security concern: displacement may increase poverty, unemployment, food insecurity, health risks, and dependence on already limited public resources.

Major Climate-Migration Hotspots

Climate-related mobility pressures are particularly significant in **Sindh, southern Punjab, Balochistan, Khyber Pakhtunkhwa, and parts of northern Pakistan**. Sindh faces major flood, drought, water, and coastal risks; southern Punjab is highly exposed to riverine and monsoon flooding; Balochistan faces severe water scarcity and drought; Khyber Pakhtunkhwa faces floods, landslides, flash floods, and changing mountain conditions; while northern mountainous regions face glacier-related hazards and landslides. The 2022 floods particularly affected Sindh, Balochistan, and Khyber Pakhtunkhwa, with more than half of the districts in these provinces declared disaster-affected (Government of Pakistan, 2022).

Overall, the literature demonstrates that **migration is the connecting mechanism between environmental change and broader security consequences**. Climate change affects migration by destroying homes, reducing agricultural productivity, increasing water insecurity, reducing labour productivity, and weakening livelihoods. Migration then transfers or redistributes these pressures toward receiving communities, particularly urban areas. If adequately planned and supported, mobility can function as an adaptation strategy; if unmanaged, it can intensify poverty, unemployment, pressure on public services, resource competition, and social vulnerability. Therefore, the climate-migration relationship provides the critical pathway through which environmental vulnerability can develop into wider **human-security and potentially national-security challenges in Pakistan**.

Climate-Induced Migration and National Security in Pakistan

Climate-induced migration has become an important pathway through which environmental change can generate wider security consequences in Pakistan. Climate change does not automatically create national-security threats; rather, climatic shocks interact with poverty, livelihood dependence, weak infrastructure, resource scarcity, institutional limitations, and existing social and political tensions. Migration becomes the connecting mechanism because environmental stress can first produce livelihood and human insecurity, then displacement or mobility, and finally additional pressures on receiving communities and state institutions.

Pakistan's 2022 floods demonstrate the scale of this process: approximately **33 million people were affected, more than 8 million were displaced, and damages and economic losses exceeded US\$30 billion** (World Bank, 2022).

Climate Migration and Human Security

The most immediate security consequence of climate-induced migration is human insecurity. Displaced populations can lose homes, livelihoods, food, clean water, healthcare, education, and personal safety. The 2022 floods created precisely such interconnected vulnerabilities, with more than 8 million people displaced and millions requiring humanitarian assistance. In flood-affected areas, damaged infrastructure and prolonged stagnant water increased exposure to waterborne and vector-borne diseases. Hashmi (2023) similarly demonstrates that climate-induced displacement in southern Punjab generated interconnected problems involving shelter, livelihoods, water, health, and personal security.

The human-security perspective is therefore essential because migration is not simply a demographic movement. It represents a change in people's access to the basic conditions necessary for a secure life. If displaced populations remain without employment, housing, healthcare, or social protection, environmental displacement can develop into prolonged socioeconomic insecurity.

Climate Migration and Economic Security

Climate-induced migration also affects economic security at both household and national levels. When floods or droughts destroy agricultural land, livestock, businesses, and infrastructure, affected households lose income and productive assets. The 2022 floods damaged around **2.2 million houses, affected approximately 9.4 million acres of crops, and killed an estimated 1.2 million livestock**, severely disrupting rural livelihoods (World Bank, 2023). The resulting loss of production and employment can push households toward migration while simultaneously reducing national economic output.

The World Bank estimated that the 2022 floods could increase Pakistan's national poverty rate by **2.5–4 percentage points**, potentially pushing **5.8–9 million people into poverty** without adequate recovery measures (World Bank, 2022). Thus, climate migration can both reflect economic insecurity and intensify it by placing additional demands on employment markets and public finances.

Climate Migration and Food Security

Climate-induced mobility has important implications for food security because displacement frequently follows agricultural and livestock losses. Pakistan's rural economy is highly dependent on climate-sensitive agriculture, meaning that floods, droughts, and heat stress can simultaneously reduce food production and household incomes. Following the 2022 floods, crop and livestock losses, disrupted supply chains, and damaged agricultural infrastructure contributed to food shortages and rising food prices. The World Bank reported that food-price inflation exceeded **50%** in the flood-affected period, while millions faced heightened food insecurity (World Bank, 2023).

Consequently, migration can occur because people can no longer sustain themselves in agricultural areas, while large-scale displacement can simultaneously increase food demand in receiving areas.

Climate Migration and Water Security

Water is another critical link between climate migration and security. Pakistan's dependence on the Indus River system makes water availability fundamental to agriculture, drinking water, energy, and industry. Climate change can increase both water excess through extreme floods and water scarcity through drought, changing precipitation, and rising temperatures. When communities lose reliable access to water, agricultural productivity declines and livelihood opportunities become less secure.

Climate-induced migration can consequently redistribute water demand toward receiving locations. If migrants settle in already water-stressed towns and cities, competition for water and sanitation services may increase. However, this should not be interpreted as inevitable conflict. The security outcome depends heavily on water governance, infrastructure, allocation mechanisms, and institutional capacity. Poor governance can transform environmental scarcity into social tension, whereas effective management can reduce these risks.

Climate Migration and Health Security

Displacement can significantly increase health insecurity. Migrants and displaced populations frequently live in temporary shelters or informal settlements with inadequate sanitation, clean water, healthcare, and nutrition. During the 2022 floods, more than **8**

million displaced people faced a serious health crisis, while stagnant water contributed to the spread of waterborne and vector-borne diseases (World Bank, 2022).

Health insecurity also has broader implications. Large-scale displacement can increase demand for already limited healthcare facilities and can reduce household income needed for medical treatment. Children are particularly vulnerable because displacement can interrupt education and nutrition. World Bank evidence showed that more than **3.5 million children's education was disrupted** during the 2022 floods, demonstrating that the security effects of climate displacement extend into long-term human-capital development.

Climate Migration and Urban Security

Urban areas are increasingly becoming the destination of climate-displaced populations. Rural households affected by floods, drought, or agricultural decline may move toward cities in search of employment, shelter, healthcare, and public services. However, rapid population inflows can increase pressure on housing, transportation, water, sanitation, employment, and local government.

Recent research on Karachi and Lahore argues that climate-induced displacement following the 2022 floods interacted with pre-existing urban vulnerabilities, producing risks related to exclusion, competition over urban space, and social tension. Importantly, the study concludes that displacement functions primarily as a **stress multiplier rather than a direct trigger of violence** (2026). This finding strongly supports the central argument of this research: climate migration becomes a security problem mainly when it interacts with weak institutions and existing socioeconomic inequalities.

Climate Migration and Social Cohesion

Large-scale population movement can affect social cohesion when displaced groups compete with host communities for employment, housing, land, public services, or political representation. Differences in ethnicity, language, class, or regional identity can further complicate integration. Such pressures can generate perceptions of exclusion or unfair resource distribution.

However, migration itself should not be considered inherently destabilizing. Strong social networks, inclusive policies, employment opportunities, and equitable service provision can facilitate peaceful integration. The critical issue is therefore not simply the **number of migrants**, but the ability of receiving communities and institutions to manage population movements fairly.

Climate Migration and Governance

Climate migration places considerable demands on governance because authorities must provide emergency shelter, registration, food, healthcare, security, housing, employment assistance, and eventually durable solutions. Weak coordination among federal, provincial, and local institutions can create administrative gaps and increase the vulnerability of displaced populations.

The 2022 floods demonstrated the scale of this challenge. More than 20 million people required humanitarian assistance, while the enormous reconstruction burden placed additional pressure on government institutions and public finances. Climate migration therefore tests **state capacity**: governments capable of managing displacement can reduce insecurity, while weak institutional responses may allow humanitarian problems to develop into longer-term social and political instability.

Climate Migration and Resource Competition

Migration may increase competition over scarce resources, particularly land, water, employment, housing, and public services. This is especially significant when migrants enter areas where host communities themselves experience poverty or resource scarcity. Balochistan illustrates the importance of this relationship because climate vulnerability intersects with socioeconomic inequality, weak institutional capacity, and an already fragile security environment. Recent research identifies migration patterns and institutional weakness as important variables in the interaction between climate change and conflict in the province (Makki et al., 2025).

Nevertheless, resource competition does not automatically become violent conflict. The outcome depends upon political institutions, resource-allocation mechanisms, local power structures, and the capacity of authorities to mediate competing interests.

Climate Migration and Internal Stability

Repeated climate-related displacement can challenge internal stability by increasing poverty, unemployment, food insecurity, urban pressure, and demands on government. It can also divert public resources from long-term development toward repeated emergency

response. The World Bank estimates that Pakistan already experiences annual flood-related losses exceeding **US\$1 billion**, while extreme poverty, weak institutional frameworks, and competing fiscal priorities constrain resilience (World Bank, 2025).

This creates a cycle in which climate disasters weaken development, weakened development increases vulnerability, and greater vulnerability increases the likelihood of displacement after future disasters. Breaking this cycle is therefore important not only for climate adaptation but also for Pakistan's internal stability.

Climate Migration and Potential Conflict

The relationship between climate migration and conflict requires particular analytical caution. **Climate migration should not be presented as a direct cause of conflict.** Climate change generally operates through multiple intervening variables, including poverty, inequality, resource scarcity, weak institutions, political exclusion, and existing grievances. The IPCC (2022) similarly emphasizes that climate-related risks interact with existing socioeconomic and political conditions rather than producing a universal pathway toward conflict.

In Pakistan, however, climate migration can act as a **threat multiplier**. Where institutions are weak and social tensions already exist, sudden population movements can increase competition for resources and create opportunities for political mobilization, exclusion, or exploitation by violent actors. Research on Balochistan identifies the interaction among climate vulnerability, migration, inequality, and fragile security conditions, while research on urban Pakistan similarly finds that displacement can increase social tension without necessarily producing direct violence (Makki et al., 2025; 2026).

Thus, the appropriate argument is **not “climate migration causes conflict,” but “climate migration can amplify pre-existing vulnerabilities that increase the risk of instability where governance and conflict-management mechanisms are weak.”**

Climate Change, Migration and Pakistan's Strategic Security

At the strategic level, climate-induced migration can influence Pakistan's security through **state capacity, internal stability, economic resilience, border management, and national development**. Large-scale displacement requires considerable fiscal and administrative resources. Repeated climate emergencies can divert resources from infrastructure, education, health, poverty reduction, and security-sector priorities toward emergency relief and reconstruction. The 2022 floods, with more than US\$30 billion in damages and economic losses, demonstrate the magnitude of this challenge (World Bank, 2022).

Climate migration also has implications for **border and internal population management**. Pakistan shares borders with Afghanistan, Iran, India, and China, and climate-related livelihood stress in border regions can interact with existing cross-border mobility and security challenges. Effective border management therefore needs to distinguish between ordinary migration, disaster displacement, humanitarian movement, and potentially security-sensitive mobility without treating displaced populations themselves as security threats.

Most importantly, climate migration affects **national development and state resilience**. A state repeatedly forced to rebuild homes, infrastructure, agricultural systems, and livelihoods after climate disasters faces greater difficulty achieving long-term development objectives. Therefore, climate resilience should be treated as an element of national security rather than solely an environmental policy issue.

The critical point is that **migration is the mediating mechanism, not the security threat in itself**. Climate-induced mobility becomes strategically significant when the state lacks the capacity to manage its humanitarian, economic, urban, and political consequences. Pakistan's national-security response should therefore focus not on preventing climate migration through coercive measures, but on reducing the vulnerabilities that make migration forced and destabilizing through adaptation, livelihood protection, planned mobility, resilient urban development, social protection, and stronger institutional coordination.

Case Study: The 2022 Pakistan Floods

The 2022 floods provide a particularly important empirical case for examining the relationship between climate change, displacement, livelihood insecurity, migration, and national security in Pakistan. The floods were not merely a natural disaster; their consequences were intensified by poverty, agricultural dependence, weak infrastructure, inadequate urban planning, and limited institutional capacity. The case therefore illustrates the central argument of this study that climate hazards become security-relevant through their interaction with existing socioeconomic and institutional vulnerabilities. The Post-Disaster Needs Assessment (PDNA), jointly prepared by the Government of Pakistan, Asian Development Bank, European Union, United Nations

agencies, and World Bank, estimated damages of **US\$14.9 billion**, economic losses of **US\$15.2 billion**, and resilient reconstruction needs of approximately **US\$16.3 billion** (Government of Pakistan et al., 2022).

Background of the 2022 Floods

Between June and September 2022, Pakistan experienced exceptionally heavy monsoon rainfall combined with other hydrological and climatic factors. Large parts of the Indus basin were inundated, while flash floods and riverine flooding severely affected communities in several provinces. Approximately one-third of the country was submerged at the height of the disaster. The floods affected **33 million people**, caused more than **1,700 deaths**, and damaged critical infrastructure and livelihoods. Sindh was the worst-affected province, accounting for close to 70% of total damages and losses, followed by Balochistan, Khyber Pakhtunkhwa, and Punjab (Government of Pakistan et al., 2022).

Scale of the Disaster

The scale of destruction made the 2022 floods one of Pakistan's most severe disasters in recent decades. More than **2.2 million houses** were damaged or destroyed, approximately **9.4 million acres of crops** were affected, and an estimated **1.2 million livestock** were lost. More than **13,000 kilometres of roads** were also damaged. These figures demonstrate that the disaster simultaneously affected human settlements, productive assets, agriculture, transportation, and local economies (World Bank, 2023).

The sectoral distribution of losses further demonstrates the multidimensional nature of the disaster. Housing suffered approximately **US\$5.6 billion** in damage, agriculture, food, livestock and fisheries approximately **US\$3.7 billion**, and transport and communications approximately **US\$3.3 billion** (Government of Pakistan et al., 2022).

Population Displacement

Displacement was one of the most direct consequences of the floods. More than **8 million people were displaced**, many of whom initially moved to temporary shelters, relief camps, roadsides, higher ground, or neighbouring communities. The displacement was particularly severe because millions lost homes and access to their normal livelihoods. IOM reported that more than **7 million people had been displaced**, while approximately 589,000 were living in government-managed relief camps during October 2022 (IOM, 2023).

This displacement illustrates the first major transition in the analytical model: **flooding → destruction → displacement**. People did not move simply because water entered their communities; they moved because homes, livelihoods, infrastructure, and basic services were no longer able to support normal life.

Livelihood Destruction

The floods severely damaged the livelihood foundations of affected communities. Agriculture, livestock, small businesses, wage employment, and informal economic activities were disrupted. The International Labour Organization estimated that approximately **4.3 million workers** were affected and warned that between **8.4 and 9.1 million people could be pushed into poverty** without effective recovery measures (International Labour Organization [ILO], 2022).

Livelihood destruction is particularly significant for understanding migration because households whose productive assets are destroyed may be unable to return to their previous economic activities even after floodwaters recede. Consequently, disaster displacement can evolve into longer-term livelihood migration. The flood therefore transformed an environmental shock into an economic and demographic challenge.

Agricultural and Food-Security Consequences

Agriculture was among the sectors most severely affected. Approximately **9.4 million acres of crops were flooded**, while more than **1.2 million livestock** were lost (World Bank, 2023). These losses affected both national food availability and household food security. For rural families, destruction of crops and livestock simultaneously removed sources of income, food, and future productive capacity.

The food-security implications consequently extended beyond the directly flooded areas. Damage to agricultural production, transport networks, storage facilities, and markets disrupted food supply chains. This created additional economic pressure on already vulnerable households and strengthened the incentive for some affected populations to seek livelihoods elsewhere.

Economic Consequences

The economic consequences extended far beyond direct physical destruction. Total economic losses were estimated at approximately **US\$15.2 billion**, while reconstruction and rehabilitation needs reached at least **US\$16.3 billion** (Government of Pakistan et al., 2022). The World Bank further estimated that the floods could increase Pakistan's poverty rate by up to **4 percentage points**, potentially pushing around **9 million additional people into poverty** (World Bank, 2023).

These consequences demonstrate how climate disasters can undermine economic resilience. When the state must redirect substantial resources toward emergency relief and reconstruction, fewer resources may be available for long-term development, education, health, infrastructure, and poverty reduction. Thus, climate disasters can indirectly weaken national resilience.

Urban and Social Consequences

Although the floods initially produced massive rural displacement, their consequences also extended to urban areas as displaced populations searched for employment, shelter, healthcare, and other services. Receiving communities consequently faced additional pressure on housing, sanitation, employment, healthcare, and public infrastructure. This demonstrates that displacement can **transfer vulnerability from one geographical location to another rather than eliminate it**.

The social consequences were particularly severe for vulnerable groups. UNICEF estimated that approximately **20.6 million people, including 9.6 million children, required humanitarian assistance** during the continuing post-flood crisis (UNICEF, 2024). Disruption of education, health services, livelihoods, and community networks therefore created longer-term social vulnerabilities.

Governance and Humanitarian Response

The scale of the disaster required a response involving federal and provincial authorities, NDMA, humanitarian organizations, United Nations agencies, and international financial institutions. The humanitarian response focused initially on shelter, food, clean water, healthcare, sanitation, protection, and emergency assistance. The UN Resident Coordinator system also supported coordination between humanitarian agencies and the Government of Pakistan (United Nations Development Coordination Office, 2023).

However, the magnitude of the crisis revealed the limitations of existing institutional capacity. The enormous reconstruction requirements demonstrated that disaster response cannot rely solely on emergency relief. Pakistan subsequently required a longer-term recovery approach emphasizing resilient reconstruction, livelihood restoration, infrastructure rehabilitation, and climate adaptation. This illustrates the connection between **displacement and governance**: effective institutions can reduce the long-term security consequences of climate mobility, while weak institutional capacity can prolong displacement.

Long-Term Displacement

An important lesson from the floods is that displacement did not end when the water receded. Many households could not immediately return because their houses, agricultural land, water systems, roads, and livelihoods had been destroyed. IOM reported that approximately **1.3 million flood-affected people remained displaced as of August 2023**, almost one year after the disaster (IOM, 2024).

This persistence is analytically important because it demonstrates the transition from **temporary displacement to potentially prolonged migration**. Where reconstruction is slow and livelihood opportunities remain unavailable, displaced populations may increasingly settle elsewhere. Consequently, climate-related displacement can produce longer-term demographic and socioeconomic changes.

Security Implications

The 2022 floods provide empirical support for the study's wider climate-migration-security framework:

Flooding → destruction → displacement → livelihood insecurity → migration → pressure on receiving communities → governance challenges → national-security implications.

The floods did not directly produce a conventional national-security threat or automatically generate conflict. Instead, they created interconnected pressures on **human security, food security, economic stability, public health, infrastructure, governance, and social cohesion**. More than 8 million displaced people, US\$30 billion in combined damages and losses, millions of damaged

livelihoods, and prolonged displacement demonstrate how a climate-related disaster can place extraordinary demands on state institutions (Government of Pakistan et al., 2022).

The case therefore supports the central theoretical argument of this research: **climate change becomes a national-security concern through its interaction with existing vulnerabilities and through the mediating mechanism of human mobility**. The 2022 floods show that when environmental destruction produces mass displacement and livelihood insecurity, the consequences extend beyond the affected locality to receiving communities, public institutions, the national economy, and long-term development. Climate-induced migration should consequently be addressed through resilience, livelihood protection, planned mobility, effective disaster governance, and social protection rather than being treated simply as a population-management problem.

Findings and Analysis

The preceding sections established that climate change is not an isolated environmental problem in Pakistan. Its significance for national security emerges through its interaction with existing socioeconomic vulnerabilities, livelihood dependence, weak infrastructure, demographic pressures, institutional capacity, and patterns of human mobility. The analysis demonstrates that **climate change, migration, and national security are connected through a chain of mutually reinforcing pressures rather than through a simple cause-and-effect relationship**. Climate hazards can damage livelihoods and essential infrastructure; these disruptions can compel or encourage people to move; and poorly managed mobility can increase pressure on food, water, housing, employment, health services, and governance in receiving areas. At the same time, migration can also function as an adaptation strategy when it is voluntary, planned, and supported by adequate institutions.

The 2022 floods provide particularly strong empirical evidence for this relationship. The floods affected approximately 33 million people and displaced more than 8 million, while causing more than US\$14.9 billion in physical damage and approximately US\$15.2 billion in economic losses. The estimated recovery and reconstruction requirement exceeded US\$16.3 billion (Government of Pakistan et al., 2022; World Bank, 2022). These figures demonstrate that a climate-related disaster can move rapidly from an environmental event to a livelihood, economic, humanitarian, governance, and ultimately national-security concern.

Finding 1: Climate Change Acts as a Multiplier of Existing Vulnerabilities

The first major finding is that **climate change primarily magnifies vulnerabilities that already exist within Pakistani society and institutions**. A climate hazard does not produce the same level of insecurity in every community. Its consequences depend heavily on poverty, infrastructure quality, livelihood structures, access to public services, governance capacity, and the ability of households to recover.

For example, flooding becomes considerably more destructive when households live in vulnerable settlements, depend on agriculture or daily wage labour, lack savings, have limited access to insurance, and have poor access to healthcare and transportation. Similarly, drought becomes more dangerous when communities depend heavily on rain-fed agriculture, groundwater is poorly managed, and alternative employment opportunities are limited. Climate change therefore acts as a **threat multiplier**, rather than necessarily being an independent security threat.

The 2022 floods illustrate this clearly. Agriculture, housing, transport and communications were among the sectors suffering the largest losses. The disaster affected millions of livelihoods and was estimated to potentially push 8.4–9.1 million additional people into poverty without effective recovery measures (ILO, 2022). Thus, the security consequences were produced not simply by rainfall but by the interaction between extreme rainfall and pre-existing socioeconomic exposure.

This finding is important because it changes the policy perspective. National security cannot be protected through disaster response alone. Reducing poverty, strengthening infrastructure, improving water management, developing resilient agriculture, and strengthening local institutions are also forms of climate-security policy.

Finding 2: Migration Is the Principal Mechanism Connecting Climate Change With Security

The second and most central finding is that **migration and displacement constitute the principal mechanism through which climate pressures can be translated into wider security consequences**.

The analytical sequence identified by this research is:

Climate change → environmental hazard → livelihood disruption → displacement/migration → pressure on receiving areas → socioeconomic and governance stress → human-security challenges → potential national-security implications.

This relationship was particularly visible during the 2022 floods. Destruction of homes, agricultural land, livestock, roads and employment opportunities forced millions of people to leave affected areas. The immediate movement was primarily a humanitarian response to physical danger, but prolonged displacement created additional problems involving housing, employment, health, education and access to public services.

Migration therefore represents the **mediating variable** in the climate-security relationship. Climate change may destroy a household's livelihood, but the movement of that household into another locality can create a new set of pressures. The security issue is consequently not migration itself but the conditions under which migration occurs.

This distinction is essential. Migration can be orderly, temporary and economically beneficial, or it can be forced, unmanaged and associated with deprivation. Pakistan's climate-mobility experience demonstrates both possibilities. Recent research and IOM programming increasingly recognize the need to integrate human mobility into climate adaptation, development, urban planning and disaster-risk reduction rather than treating migration as a separate policy issue (IOM, 2026).

Finding 3: Climate-Induced Migration Primarily Creates Human-Security Challenges

The third finding is that the immediate security consequences of climate-induced migration are predominantly **human-security challenges** rather than conventional military threats. Displaced and mobile populations face interconnected problems involving food, water, shelter, employment, health and personal security.

Food security can deteriorate when floods destroy crops, livestock and agricultural infrastructure. Displacement simultaneously reduces household purchasing power, making affected populations more dependent on markets and humanitarian assistance. **Water security** is also affected because floods can contaminate drinking-water systems, while drought can reduce water availability and intensify competition over scarce resources.

Housing insecurity becomes particularly significant when displaced households move into temporary shelters, informal settlements or overcrowded urban communities. Employment insecurity follows when agricultural workers lose access to land or when displaced workers lack the skills and social networks necessary to enter urban labour markets. The 2022 floods affected approximately 4.3 million workers, demonstrating how climate disasters can transform environmental disruption into an employment and livelihood crisis (ILO, 2022). Health insecurity further reinforces these problems. Displacement can increase exposure to unsafe water, infectious diseases, inadequate sanitation, heat and overcrowding. Personal security may also deteriorate when displaced populations lack stable housing, income and access to formal institutions.

Consequently, climate-induced migration should be understood through the broader concept of **human security**. Protecting people from climate-related insecurity requires more than preventing displacement; it requires ensuring that those who move can maintain adequate access to basic necessities and social protection.

Finding 4: Urban Areas Are Emerging as Major Climate-Security Spaces

The fourth finding is that **Pakistan's cities are becoming increasingly important spaces in the climate-migration-security relationship**. Climate-induced mobility does not end when people leave hazard-prone rural areas. It frequently transfers environmental and socioeconomic pressure from vulnerable rural locations to already stressed urban areas.

Urban receiving areas may experience increased demand for affordable housing, employment, water, sanitation, healthcare, education and transportation. When migrants cannot access formal housing, they may settle in informal or poorly planned settlements that are themselves highly exposed to floods, heat and inadequate sanitation. Pakistan's disaster-management planning also recognizes that rapid urbanization and rural-to-urban migration contribute to the expansion of informal settlements and increase pressure on already limited urban resources (NDMA, 2024).

This creates a potential cycle:

Rural climate vulnerability → migration to cities → informal settlement → inadequate services → urban climate vulnerability → renewed insecurity.

The urban dimension is therefore crucial to national security. Pakistan's urban population is projected to increase substantially, while climate risks are simultaneously increasing. The World Bank has emphasized resilient and livable cities, integrated land-use planning, municipal services and stronger urban institutions as essential components of climate resilience (World Bank, 2022).

Finding 5: Climate Mobility Creates Economic-Security Pressures

The fifth finding is that climate-induced mobility generates substantial **economic-security pressures** at household, provincial and national levels.

At the household level, the destruction of crops, livestock, homes and productive assets reduces income and savings. At the local level, damaged roads, markets, irrigation systems and electricity infrastructure reduce economic activity. At the national level, reconstruction creates additional fiscal requirements at precisely the moment when government revenues and economic productivity may already be under pressure.

The 2022 floods illustrate this relationship exceptionally well. Total physical damage was estimated at more than US\$14.9 billion and economic losses at about US\$15.2 billion, while resilient reconstruction needs were estimated at at least US\$16.3 billion (Government of Pakistan et al., 2022). The disaster also increased poverty pressures and generated substantial losses in agriculture, infrastructure and employment.

Climate-induced migration can further influence economic security because receiving areas must absorb additional demand for public services while displaced households compete for limited employment. If productive integration does not occur, migration can contribute to unemployment, informal employment and persistent poverty. Conversely, if migrants gain employment and contribute to local economies, mobility can support economic recovery.

Thus, economic security depends not only on preventing climate disasters but also on ensuring that displaced populations can rapidly regain productive livelihoods.

Finding 6: Climate Migration Can Intensify Resource Competition, but Competition Does Not Automatically Become Conflict

The sixth finding concerns **resource competition**. Climate mobility can increase demand for scarce resources, particularly water, land, housing, employment and public services.

Water scarcity can become particularly sensitive where host and migrant communities depend upon the same limited water sources. Similarly, an influx of displaced households may increase demand for affordable land and housing. Competition for employment may become more visible where local labour markets are already weak. Pressure on schools, hospitals, sanitation systems and municipal services can also generate perceptions that resources are being distributed unfairly.

However, the evidence does **not** support a deterministic conclusion that climate migration automatically produces violent conflict. Competition becomes a serious security problem primarily when institutions are unable to mediate competing interests, when inequality is high, when communities perceive discrimination, or when political actors exploit existing social divisions.

This distinction prevents the climate-security debate from becoming alarmist. Strong institutions, inclusive resource management and equitable service delivery can transform potential competition into cooperation.

Finding 7: Institutional Capacity Determines Security Outcomes

The seventh finding is that **institutional capacity is the decisive factor determining whether climate mobility produces resilience or insecurity**.

Two contrasting pathways can be identified:

Strong	institutional	capacity:
Climate shock → early warning → preparedness → adaptation → managed mobility → livelihood recovery → resilience.		
Weak	institutional	capacity:
Climate shock → displacement → unmanaged migration → pressure on resources → service failure → socioeconomic insecurity → institutional stress.		

Pakistan possesses significant institutional structures, including the National Disaster Management Authority, provincial disaster-management authorities and climate-policy institutions. However, institutional effectiveness depends upon coordination, financing, local capacity, data availability and implementation.

The existence of policies alone is therefore insufficient. Climate-security resilience requires institutions capable of translating national strategies into district and community-level action. This includes anticipatory action, resilient infrastructure, mobility planning, social protection, land-use regulation and livelihood recovery.

Finding 8: Pakistan Has Policy Recognition but Significant Implementation Gaps

The eighth finding is that Pakistan has increasingly recognized climate vulnerability, adaptation and disaster risk within its policy architecture. The **National Climate Change Policy 2021**, **National Adaptation Plan 2023**, updated NDC and national disaster-management planning demonstrate substantial policy recognition. The Ministry of Climate Change identifies the NAP as a framework for strengthening resilience across sectors including water, agriculture, infrastructure and urban planning (Government of Pakistan, 2021, 2023).

However, the major weakness lies in **implementation and integration**. Climate policy, disaster management, migration governance, urban planning, water management and national-security planning are often addressed through different institutional structures. Human mobility therefore risks remaining an implicit consequence rather than an explicit component of climate adaptation.

IOM's current programming itself recognizes this gap by emphasizing the integration of climate adaptation, disaster-risk reduction and human mobility into development, urban and land-use planning (IOM, 2026).

The finding is therefore not that Pakistan lacks policies, but that **policy fragmentation, implementation capacity, financing constraints and insufficient climate-mobility data limit the effectiveness of existing frameworks**.

Finding 9: Climate Migration Can Also Be an Adaptation Mechanism

An important positive finding is that **migration should not always be understood as a security problem**. Under appropriate conditions, mobility can strengthen household resilience.

Migration can allow households to diversify income, access employment, send remittances, reduce dependence on climate-sensitive agriculture and move away from areas of repeated environmental exposure. Seasonal or temporary migration can therefore function as an adaptation strategy rather than a sign of institutional failure.

The distinction lies between **adaptive mobility and distress displacement**. Adaptive mobility generally involves choice, access to information, social networks and opportunities for productive employment. Distress migration occurs when households move because remaining has become economically or physically impossible.

This finding has major policy implications. The objective should not be to prevent all climate-related mobility. Instead, Pakistan should aim to **make necessary mobility safer, more predictable, economically productive and socially integrated**.

Finding 10: Pakistan Needs an Integrated Climate-Mobility-Security Framework

The final and principal finding is that Pakistan requires an **integrated climate-mobility-security framework** capable of connecting climate adaptation, migration governance and national-security planning.

The research demonstrates that treating these issues separately creates policy gaps. Climate institutions focus primarily on environmental risks; disaster institutions focus on emergencies; migration institutions focus on population mobility; urban authorities focus on service delivery; and national-security institutions focus on broader stability. Yet climate-induced mobility crosses all of these domains.

An integrated framework should therefore operate across the complete causal chain:

Climate risk → vulnerability assessment → livelihood protection → anticipatory action → planned mobility → safe reception → employment and social protection → urban integration → resource management → social cohesion → long-term resilience.

Such a framework would allow Pakistan to identify climate-mobility hotspots before displacement reaches crisis levels, incorporate population movement into urban and land-use planning, protect livelihoods in vulnerable rural areas, establish mechanisms for safe relocation where necessary, expand social protection for displaced households, and strengthen coordination between federal, provincial and local institutions.

The overall finding of this research is therefore that **climate change becomes a national-security concern primarily when environmental shocks interact with vulnerable livelihoods and generate unmanaged human mobility**. Migration is the principal bridge between environmental change and wider security pressures, but migration itself is neither inherently destabilizing nor inherently threatening. Its consequences depend heavily on institutional capacity, socioeconomic conditions and policy choices.

The 2022 floods demonstrate the scale of this challenge: an environmental disaster rapidly became a displacement crisis, livelihood crisis, poverty crisis, health crisis and economic crisis. The appropriate national-security response is consequently not militarization of migration but **resilience-building, institutional coordination, human-security protection and planned mobility management**. This finding provides the analytical foundation for the policy recommendations that follow.

The findings can ultimately be summarized through one integrated relationship:

Climate change does not automatically produce national insecurity. Rather, climate hazards interact with existing vulnerabilities, disrupt livelihoods, generate human mobility, place pressure on receiving communities and institutions, and can produce wider security consequences when governance and adaptive capacity are insufficient.

This makes **climate-resilient development, safe and managed mobility, urban resilience, livelihood protection, and institutional strengthening** not merely environmental or developmental priorities, but essential components of Pakistan's long-term national-security strategy.

Pakistan's Existing Policy Response

Pakistan has developed a relatively broad policy architecture for addressing climate change, disaster risk, adaptation, national security, and human mobility. The **National Climate Change Policy 2021, Updated Nationally Determined Contributions 2021, National Adaptation Plan 2023, disaster-management framework, and National Security Policy 2022–2026** collectively demonstrate that climate-related risks are increasingly recognized within national policymaking. However, when examined through the climate change–migration–national security nexus, an important weakness becomes visible: these policies are not yet fully integrated into a single framework for anticipating, managing, and reducing climate-induced mobility and its security consequences.

National Climate Change Policy 2021

The **National Climate Change Policy 2021 (NCCP)** provides the principal domestic framework for climate action. Its overall objective is to steer Pakistan toward climate-resilient and low-carbon development, with particular attention to vulnerable sectors and adaptation. The policy covers areas including water, agriculture, forestry, health, disaster preparedness, infrastructure, and institutional capacity (Government of Pakistan, 2021).

For this research, its importance lies in its recognition that climate vulnerability extends beyond environmental degradation into socioeconomic and developmental risks. Nevertheless, climate-induced migration is not sufficiently developed as a central security and planning concern. Consequently, the policy provides an important foundation but does not by itself establish a comprehensive climate-mobility-security mechanism.

Updated Nationally Determined Contributions 2021

Pakistan's **Updated NDC 2021** strengthens the country's international climate commitments while emphasizing adaptation as a central priority. It recognizes the vulnerability of agriculture, water resources, food security, ecosystems, and communities and calls for stronger resilience across national and subnational levels. It also envisages coordination between federal and provincial institutions and the development of adaptation measures and risk assessments (Government of Pakistan, 2021).

Its relevance to climate migration is indirect but significant. By protecting climate-sensitive livelihoods and improving resilience, effective NDC implementation can reduce the conditions that force households to migrate. Thus, mitigation and adaptation

measures should be understood not only as environmental interventions but also as **mobility-management and security measures**.

National Adaptation Plan 2023

The **National Adaptation Plan (NAP) 2023** represents an important step toward translating broad climate commitments into adaptation planning. It was developed through consultations involving federal and provincial stakeholders and seeks to mainstream climate adaptation into development planning.

The NAP is particularly relevant to this research because effective adaptation can reduce displacement by strengthening livelihoods, infrastructure, water management, agriculture, health systems, and urban resilience. Its implementation framework also recognizes the need for coordination across levels of government. However, the climate-migration relationship requires further operationalization through systematic identification of mobility hotspots, planned relocation mechanisms, urban receiving-area planning, and protection of displaced populations.

National Disaster Management Framework

Pakistan's disaster-management system, established principally through the National Disaster Management Act and related national and provincial plans, provides the institutional mechanism for preparedness, response, mitigation, recovery, and reconstruction. **NDMA** operates at the federal level, while **PDMAs and district-level authorities** perform corresponding functions at subnational levels.

Recent disaster-risk planning increasingly emphasizes early warning, vulnerability assessment, anticipatory action, resilient infrastructure, and risk-informed planning. This is important because effective disaster management can prevent temporary displacement from becoming prolonged displacement. However, disaster management has historically been stronger in emergency response than in long-term management of climate-induced mobility, livelihood recovery, and integration into receiving communities.

National Security Policy 2022–2026

The **National Security Policy 2022–2026** provides an important bridge between climate vulnerability and the broader concept of national security. It adopts a **citizen-centric and comprehensive national-security approach**, recognizing traditional as well as non-traditional security concerns and placing economic security at the core of national security (Government of Pakistan, 2022).

This approach is highly compatible with the argument of this research. Climate-induced migration affects economic security, food security, water security, public health, livelihoods, social cohesion, and governance. However, climate-induced human mobility requires stronger explicit incorporation into national-security risk assessment and planning. The policy framework therefore provides conceptual space for addressing climate security but requires stronger operational links with climate adaptation and migration institutions.

Migration and Displacement Governance

Pakistan does not yet have a sufficiently comprehensive, dedicated governance framework specifically addressing **climate-induced internal migration and displacement**. Migration governance remains distributed across different legal and institutional arrangements dealing with internal displacement, disaster response, refugees, labour mobility, border management, and international migration.

The growing role of climate and disaster mobility is nevertheless increasingly recognized. IOM works with Pakistani institutions to integrate human mobility and displacement into adaptation, development, urban, and land-use planning and to strengthen safe, orderly, and regular migration governance. This indicates an emerging policy direction, but greater national ownership and institutionalization are required.

Institutional Roles

Pakistan's response involves multiple levels of government. The **federal government**, particularly the Ministry of Climate Change and Environmental Coordination, provides national climate-policy direction and coordinates international climate commitments. **Provincial governments** are responsible for translating national policies into provincial development, environmental, agricultural, water, and adaptation programmes. **NDMA** provides national disaster-management coordination, while **PDMAs** undertake

provincial preparedness, vulnerability assessment, planning, and response. District and local institutions are critical because they operate closest to affected communities and are responsible for frontline implementation.

This multi-level structure is necessary because climate mobility is fundamentally local in its immediate effects but national in its cumulative consequences. Effective implementation therefore requires vertical coordination from federal to provincial and local levels and horizontal coordination among climate, disaster, planning, migration, health, water, agriculture, housing, and security institutions.

Policy Implementation Gaps

The principal weakness of Pakistan's existing policy response is therefore **not the complete absence of policies but the gap between policy recognition and effective implementation**. First, **coordination** remains difficult because climate change, disaster management, migration, urban planning, and security are administered through different institutional structures. Second, **financing** remains a major constraint, particularly for adaptation and resilient infrastructure. Third, **local institutional capacity** is uneven, although local governments and district authorities are essential for managing displacement and receiving communities.

Fourth, **data limitations** make it difficult to establish reliable relationships between specific climate hazards, migration decisions, displacement duration, and security outcomes. Fifth, **implementation** often prioritizes emergency response over long-term resilience and livelihood recovery. Finally, **monitoring and evaluation** need to be strengthened so that policymakers can assess whether adaptation investments actually reduce displacement, poverty, and insecurity.

Overall, Pakistan possesses the essential components of a climate-security policy architecture, but they remain insufficiently integrated. The central policy challenge is therefore to move from **separate climate, disaster, migration, and security policies toward an integrated climate-mobility-security framework**. Such integration would directly address the principal finding of this research: climate change becomes a broader national-security concern when environmental shocks disrupt livelihoods, generate unmanaged mobility, and overwhelm the institutions and resources of affected and receiving communities.

Conclusion

Climate change is increasingly becoming a multidimensional challenge for Pakistan, extending beyond environmental degradation to affect livelihoods, migration, economic stability, human security, governance, and national security. This study examined the emerging relationship between **climate change, migration, and national security in Pakistan** and argued that the three dimensions should not be treated as separate policy problems. The central conclusion is that climate change does not automatically produce migration, conflict, or national insecurity. Rather, climate hazards interact with existing vulnerabilities—including poverty, dependence on climate-sensitive livelihoods, inadequate infrastructure, water stress, rapid urbanization, and institutional weaknesses—to disrupt livelihoods and encourage displacement or migration. Migration then becomes the principal mechanism through which climate-related pressures can spread into wider human and national-security domains.

The analysis demonstrates that **climate change functions primarily as a threat multiplier**. Communities with stronger economic resources, resilient infrastructure, effective institutions, and access to social protection are generally better able to absorb climate shocks without experiencing prolonged displacement. Conversely, vulnerable communities can experience a chain of interconnected crises when a major flood, drought, heatwave, or other climate hazard destroys livelihoods and productive assets. The 2022 floods provide the clearest empirical illustration of this relationship. Approximately 33 million people were affected and nearly 8 million were displaced, while total damages exceeded US\$14.9 billion and economic losses reached approximately US\$15.2 billion. The disaster also created substantial poverty, health, agricultural, infrastructure, and livelihood pressures (Government of Pakistan et al., 2022; World Bank, 2022). A major finding of this research is that **migration represents the critical link between climate vulnerability and security outcomes**. Climate change can disrupt agricultural production, employment, housing, water availability, and household income, which may compel people to move temporarily or permanently. When displacement is sudden and unmanaged, receiving areas may experience additional pressure on housing, employment, water, sanitation, healthcare, education, and other public services. These pressures can deepen existing inequalities and create social and governance challenges. However, the study rejects a deterministic understanding of climate migration. Migration itself is not inherently a security threat, and climate-induced mobility does not automatically produce conflict. Its consequences depend substantially on governance, institutional capacity, resource distribution, socioeconomic conditions, and the ability of receiving communities to absorb new populations.

The findings further show that the immediate consequences of climate-induced migration are predominantly **human-security challenges**. Food insecurity can emerge from agricultural and livestock losses; water insecurity can increase because of drought, contamination, or excessive demand; housing insecurity can follow the destruction of homes; unemployment can increase when climate-sensitive livelihoods disappear; and health risks can expand because of overcrowding, inadequate sanitation, unsafe water, and disrupted healthcare. These challenges can subsequently affect broader economic and political stability. In this sense, national security should be understood not only through conventional military threats but also through the capacity of the state to protect people, maintain essential services, preserve economic stability, and manage social pressures generated by climate-related shocks.

The research also highlights the growing importance of **urban areas as climate-security spaces**. Climate-induced rural mobility can transfer pressure from environmentally vulnerable rural communities to cities that are already struggling with inadequate housing, water supply, sanitation, employment, transportation, and public services. If migration is unmanaged, informal settlements and socioeconomic exclusion may increase. Conversely, effective urban planning and economic integration can transform migration into an opportunity for livelihood diversification and resilience. Therefore, Pakistan's climate policy must increasingly connect rural adaptation with urban planning and mobility management.

Another important conclusion concerns **economic security**. Climate disasters can reduce agricultural output, destroy infrastructure, disrupt markets and supply chains, reduce labour productivity, increase poverty, and impose substantial reconstruction costs on the state. The 2022 floods demonstrated the magnitude of this problem, with resilient recovery and reconstruction needs estimated at more than US\$16.3 billion. The floods also had the potential to increase the national poverty rate by approximately 3.7–4 percentage points, potentially pushing 8.4–9.1 million additional people below the poverty line (World Bank, 2022). These consequences demonstrate that climate resilience is simultaneously an economic-security and national-security requirement.

The study further concludes that **resource competition requires careful and non-deterministic analysis**. Climate-induced migration may increase competition over water, land, housing, employment, and public services, particularly in areas already characterized by scarcity and inequality. Nevertheless, scarcity does not automatically produce conflict. Effective institutions, equitable resource distribution, inclusive local governance, and social-protection mechanisms can prevent competition from developing into serious social instability. The decisive factor is therefore not climate-induced mobility alone but the capacity of institutions to manage its consequences.

Pakistan has already developed important policy instruments, including the **National Climate Change Policy 2021, Updated Nationally Determined Contributions 2021, National Adaptation Plan 2023, disaster-management frameworks, and the National Security Policy 2022–2026**. The Ministry of Climate Change currently lists the National Adaptation Plan, Updated NDC, and updated climate policy among Pakistan's active policy instruments. These initiatives demonstrate significant policy recognition. However, the study identifies an important implementation gap: climate adaptation, disaster management, migration governance, urban planning, and national-security planning remain insufficiently integrated. Problems of coordination, financing, local institutional capacity, data availability, implementation, and monitoring continue to constrain the effectiveness of existing policies.

The study therefore concludes that Pakistan needs to move from **fragmented policy responses toward an integrated climate-mobility-security framework**. Such a framework should connect climate-risk assessment with livelihood protection, anticipatory disaster management, planned mobility, urban preparedness, social protection, employment generation, resource management, and national-security planning. Climate-induced mobility should be incorporated into adaptation and development planning rather than addressed only after displacement has occurred. At the same time, migration should be recognized as a possible adaptation mechanism when it enables households to diversify income, access employment, reduce exposure to hazards, and strengthen resilience.

Ultimately, the security implications of climate change in Pakistan will depend less on climate change alone than on **how effectively the state and society respond to it**. A climate shock can produce displacement and insecurity where institutions are weak, infrastructure is inadequate, and livelihoods are highly vulnerable. The same shock can be managed more successfully where early-warning systems, resilient infrastructure, social protection, effective governance, and planned mobility mechanisms are available. The central policy lesson is therefore clear: **preventing climate-related insecurity requires preventing vulnerability from becoming unmanaged displacement and preventing displacement from becoming prolonged human insecurity**.

Pakistan's national-security strategy must consequently expand beyond a narrow focus on conventional threats and incorporate climate resilience, human mobility, livelihood protection, urban resilience, water and food security, and institutional preparedness.

Building such resilience is not only an environmental responsibility but also a developmental and strategic necessity. If Pakistan succeeds in integrating climate adaptation with mobility governance and national-security planning, climate-induced migration can be managed as a component of adaptation rather than allowed to become a source of prolonged insecurity. The future of Pakistan's climate security will therefore depend on its ability to **anticipate climate risks, protect vulnerable livelihoods, manage human mobility, strengthen institutions, and convert climate vulnerability into resilience through coordinated and people-centred policy action.**

Policy Recommendations

The findings of this study demonstrate that Pakistan's climate-security challenge cannot be addressed through climate policy, disaster management, or migration policy in isolation. The central policy requirement is to manage the entire chain from **climate risk to livelihood disruption, mobility, and security consequences.** The following recommendations are therefore designed to be practical, institutionally feasible, and directly connected with the findings of this research.

First, Pakistan should establish an integrated Climate-Mobility-Security Framework that formally connects climate adaptation, disaster-risk reduction, migration management, urban planning, and national-security planning. The federal Ministry of Climate Change and Environmental Coordination, NDMA, provincial governments, PDMAs, planning institutions, and relevant security and migration authorities should jointly develop a mechanism for identifying areas where climate hazards are likely to generate significant displacement. Climate-mobility risk assessments should become part of national and provincial development planning. This would allow government to identify vulnerable communities before displacement occurs and prepare receiving areas for additional demand for housing, water, healthcare, education, sanitation, and employment. Such integrated planning is consistent with the wider emphasis on coordinated, risk-informed and resilient development recommended for Pakistan.

Second, Pakistan should shift from reactive disaster response toward anticipatory action and climate-resilient livelihoods. Investment should prioritize flood protection, drought-resistant agriculture, water conservation, climate-resilient roads and housing, early-warning systems, drainage, and resilient public infrastructure in highly exposed districts. At the household level, social-protection mechanisms, emergency cash assistance, crop and livestock protection, livelihood diversification, and rapid employment programmes should be expanded so that temporary climate shocks do not become permanent displacement. The experience of the 2022 floods demonstrates the economic cost of inadequate resilience, with more than US\$30 billion in combined damage and losses. Therefore, adaptation investment should be viewed not merely as environmental expenditure but as an investment in poverty reduction, economic stability, and national security.

Third, climate-induced migration should be recognized as a potential adaptation strategy and managed through safe and planned mobility rather than treated only as a humanitarian crisis. Pakistan should develop clear arrangements for temporary displacement, planned relocation where remaining in high-risk areas is no longer viable, and access to documentation, social protection, healthcare, education, housing, and employment for displaced populations. Receiving districts and cities should be identified in advance and provided with additional resources according to the population they are expected to accommodate. At the same time, policies should support voluntary labour mobility and income diversification, allowing vulnerable households to move toward safer and more economically productive areas. International evidence similarly emphasizes preparedness, planned relocation, urban planning, and safe mobility as complementary components of climate adaptation.

Fourth, Pakistan should make climate-resilient urban planning a central component of climate-security policy. Since climate-induced mobility can increase pressure on cities, federal and provincial governments should strengthen affordable housing, water supply, sanitation, drainage, public transport, healthcare, schools, and employment opportunities in major receiving areas. Informal settlements should be incorporated into urban resilience planning rather than simply treated as illegal or temporary spaces. Local governments should receive predictable financial resources and technical capacity to manage population growth and climate risks. This is particularly important because poorly planned urban expansion can convert climate mobility into prolonged insecurity, whereas well-planned urban integration can transform migrants into productive contributors to the local economy.

Fifth, Pakistan should establish a stronger climate-mobility data and monitoring system. Government institutions should systematically collect and integrate information on climate hazards, displacement, migration destinations, duration of displacement, livelihood losses, housing conditions, employment, food and water insecurity, and pressure on receiving communities. NDMA and PDMAs, in coordination with the Pakistan Bureau of Statistics and climate institutions, could develop a national **Climate Mobility Database** with standardized indicators at district level. Such data would improve early warning, resource allocation, urban planning, and evidence-based security assessment. Better data are particularly important because climate-induced

mobility is influenced by multiple factors, making it difficult to distinguish climate pressures from poverty, employment conditions, conflict, and other drivers without systematic monitoring.

Sixth, Pakistan should strengthen implementation, financing, and institutional coordination across existing policies rather than continuously creating separate policy documents. The National Climate Change Policy, Updated NDC, National Adaptation Plan, disaster-management plans, and national-security framework should be implemented through clearly defined responsibilities, measurable targets, dedicated financing, and regular monitoring. Federal and provincial governments should establish climate-resilience financing mechanisms and improve access to international climate finance while ensuring transparent allocation toward vulnerable districts. Implementation should be decentralized to the lowest appropriate level, while federal institutions provide standards, financing, technical support, and coordination. This would help transform Pakistan's existing policy recognition into practical resilience and directly address the central conclusion of this research: **the national-security consequences of climate change can be reduced when Pakistan protects livelihoods, manages mobility, strengthens receiving communities, and builds institutional capacity before climate shocks become displacement and security crises.**

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