



Climate-Induced Migration in the Sahel Region

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Introduction

The Sahel—an ecologically fragile belt stretching from the Atlantic coast of Senegal to the Red Sea in Sudan—has emerged as a global epicenter for climate-induced migration. The effects of rising temperatures, erratic rainfall, desertification, and the resultant impacts on agriculture and livelihoods are reshaping traditional patterns of mobility and introducing unprecedented humanitarian and policy challenges. This article explores the drivers, dimensions, consequences, and future directions of climate-induced migration in the Sahel, drawing on recent research and including relevant data visualizations.

Climate Change in the Sahel: Drivers and Trends

Environmental Stress and Degradation

- **Rising Temperatures:** Average temperatures in the Sahel are climbing 1.5 times faster than the global average, with projections indicating at least a 2°C increase by 2040^[1].
- **Rainfall Variability:** Erratic and shrinking wet seasons, drought, and increased frequency of floods have severely disrupted agricultural cycles^{[1][2]}.
- **Desertification and Land Degradation:** Over 80% of the Sahel’s population relies on rain-fed agriculture and pastoralism. Diminishing arable land and pasture directly undercut livelihoods^[3].

The Human Toll: Socioeconomic Vulnerabilities

- **Food Insecurity:** In 2024, over 10.5 million Sahelians are facing hunger, reflecting a threefold increase since 2019^[4].
- **Livelihood Collapse:** Both pastoral and farming systems are failing due to water scarcity, declining crop yields, and loss of livestock. In Niger alone, cereal yields continue to drop as rainfall becomes unpredictable^[3].
- **Political Fragility:** Compounding environmental risks, persistent instability and conflict drive further displacement and limit adaptation options^{[5][6]}.

Patterns and Dimensions of Migration

Internal and Cross-Border Migration Flows

- **Scale of Mobility:** The Sahel is expected to see up to 86 million internally displaced persons by 2050 due to climate-related drivers, with 32 million in West Africa alone if no climate or development action is taken^{[1][7]}.
- **Major Affected States:** Niger, Mali, Chad, Mauritania, Burkina Faso, and northern Nigeria are most affected, with millions displaced due to drought and desertification. By 2023, over 3.7 million people were internally displaced, and more than 500,000 sought refuge abroad^{[3][4]}.
- **Nature of Movement:** Traditional seasonal migration for work or livestock grazing is giving way to longer-term and sometimes permanent displacement.

Country	Climate IDPs (2023)	At Risk Population (2024)
Niger	~6.4 million	9 million+
Mali	~4.6 million	5 million+
Chad	~3.6 million	4 million+
Burkina Faso	~2.1 million	3 million+



Mauritania	700,000	900,000+
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Sources: World Bank, WFP, Econolicy Africa

Changing Migration Dynamics

- From Adaptive to Distress Migration:** While migration has historically been an adaptation strategy during seasonal hardship, climate stress now drives involuntary and sometimes unsafe movement^{[8][2]}.
- Rural-Urban Shift:** Failing agricultural economies force youth and families into rapidly growing cities, exacerbating urban poverty and straining social services^{[9][10]}.
- Pastoralist Mobility:** Traditional pastoral routes for cross-border livestock movement are being abandoned due to water scarcity and violent resource conflicts^{[9][8]}.

Consequences for Human Security and Development Conflict and Social Tensions

- Competition over dwindling land and water resources intensifies communal conflicts and violence, contributing further to displacement^{[5][11]}.
- Intercommunal and transboundary tensions are on the rise, especially where migration overlaps with pre-existing ethnic and economic grievances^{[5][10]}.

Economic Disruption

- The collapse of farming and herding directly erodes GDP, increases food import reliance, and undercuts national economies with large rural populations^[3].
- Loss of livelihood opportunities exacerbates poverty, increases vulnerability, and can prompt irregular or unsafe migration.

Vulnerable Groups

- Women, children, and marginalized communities face heightened risks. Food insecurity, disrupted school attendance, and gender-based violence disproportionately affect displaced populations^{[11][12]}.

Data Visualization: Sahel Climate Migration Indicators

Table: Drivers of Climate-Induced Migration in the Sahel

Driver	Impact on Mobility	Example
Drought/Desertification	Reduced crop/pasture, displacement	Niger, Mali, Chad
Flooding	Loss of homes, seasonal displacement	Senegal, Burkina Faso
Resource Conflict	Violence amplifies refugee flows	Northern Nigeria, Mali
Food Insecurity	Urban and cross-border migration	All Sahelian countries
Extreme Heat	Health impacts, unplanned migration	Mauritania, Niger

Key Statistics: Climate Migration and Hunger (2024 Sahel Region)

- Displaced persons up 400% since 2019^[4]
- Over 10.5 million at risk of hunger in 2024 (up from 3.6 million in 2019)^[4]
- 1.5 million children under five risk acute malnutrition due to drought and food shortages^[6]

Case Studies

Niger: Climate, Conflict, and Mass Displacement

Niger exemplifies the nexus of environmental decline and insecurity. Erratic rainfall and desertification, compounded by attacks from armed groups, have forced over 6 million people into displacement or food insecurity^{[6][4]}. The International Organization for Migration highlights a rise in both rural-urban migration and cross-border flows.

Mali and Burkina Faso: Pastoralists and Adaptation



Mali's pastoralists are abandoning traditional migration routes in favor of permanent relocation as drought and insecurity worsen. In Burkina Faso, communities increasingly move to urban centers to escape failed harvests^{[8][12]}.

The Lake Chad Basin: Environmental Collapse

The shrinking of Lake Chad, which spans Chad, Niger, Nigeria, and Cameroon, has forced millions to migrate, devastating local economies and fueling both economic and resource-based violence^[13].

Adapting to Climate Mobility: Policy Responses and Innovations

Towards Rights-Based, Resilience-Focused Solutions

- **Legal Protections:** Human rights-based migration policies are critical to protect the dignity and safety of climate migrants^{[1][12]}.
- **Investment in Resilience:** Scaling up resilient agriculture, water management, and reforestation can slow forced migration and enhance livelihoods^[4].
- **Urban Adaptation:** Supporting urban infrastructure and service delivery helps cities absorb and integrate internally displaced persons^[9].
- **Cross-Border Collaboration:** Regional initiatives, including visa-free movement within ECOWAS, facilitate safe migration but require robust humanitarian support^[11].

Strategic Recommendations

- **Strengthen Early Warning Systems:** Anticipate and mitigate the impacts of climate shocks on vulnerable communities.
- **Empower Local Adaptation:** Invest in community-led livelihood diversification, particularly for rural and pastoral populations.
- **Integrate Climate and Migration Policy:** Mainstream climate resilience in national and regional migration and development strategies.

Conclusion

Climate-induced migration in the Sahel is redefining the region's demographic, economic, and humanitarian landscape. As temperatures rise and rainfall becomes ever more unpredictable, the mobility of millions—once largely adaptive—now reflects distress, vulnerability, and growing insecurity. While the challenges are immense, opportunities exist for adaptive, resilience-building responses that can safeguard populations, stabilize economies, and preserve the Sahel's unique social fabric. The international community, regional governments, and local actors must act decisively to turn the tide from crisis toward sustainable adaptation and human dignity for climate-affected populations across the Sahel.

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