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Climate Migration: Drivers, Adaptation, and Governance Evidence

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ABSTRACT

Climate migration has emerged as one of the most significant consequences of climate change, driven by a complex interaction of environmental, economic, social, and political factors. This paper examines the key drivers of climate migration, including environmental degradation, extreme weather events, livelihood disruptions, and governance challenges. It explores the ways in which climate-induced mobility manifests through displacement, planned relocation, and adaptive migration strategies. The study further analyzes adaptation pathways aimed at enhancing resilience, reducing vulnerability, and supporting affected populations through both relocation and non-relocation measures. Particular attention is given to the governance of climate migration, highlighting the roles of international cooperation, national policy frameworks, local institutions, and community participation in managing climate-related mobility. Drawing on evidence from coastal regions, inland floodplains, and arid and drought-prone areas, the paper demonstrates that climate migration is not solely an environmental phenomenon but a multidimensional development and governance challenge. The findings underscore the need for integrated policies that combine climate adaptation, sustainable development, and human mobility management. Strengthening resilience at the local level, improving data systems, and fostering collaborative governance are essential for addressing the growing impacts of climate change on migration and ensuring the protection and well-being of vulnerable populations.

Keywords: Climate Migration, Climate Change Adaptation, Human Mobility, Environmental Governance and Resilience Building.

INTRODUCTION

Climate migration is an urgent challenge for people, nations, and the world. Migration is intrinsically involved in climate change, with too little attention paid to policy design and implementation [1]. Lethal impacts on human settlements will force individuals to uproot and relocate, but many still cling to their homes. Migration occurs in response to extreme events, gradual degradation, governmental failures, and economic fluctuations. State policies, legal frameworks, and governance capacity often exacerbate environmental degradation, interrupt livelihoods, and fail to assist communities [2]. People respond with protective adaptations to reduce vulnerability, slow down loss, and ensure safety for human and environmental health. The broad range of reactions permits analyses across multiple contexts, conditions, and systems, providing valuable empirical evidence [3]. In coastal regions, a congregating habitus emerges in parallel with physical relocation, modification of asset ownership, and safety net involvement despite seeking new locations far inland. Economic cycles trigger mixed migration trajectories through local relocation, intermediation, and international transiting [1]. Abandoned assets and repurposed physical stock extend inland floodplain occupations, where regional governance permits nondiscriminatory temporary transits. Concentration into governable communal clusters accommodates inland movement while affording certain security against resource predation for assets still held [1]. States contend against both socioeconomic and environmental shocks, choosing whether to bolster resilience or allow deterioration that may drive recourse to movement in search of new opportunities. Regional stability reinforces adaptation channels and

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governs uncertain transits in anticipation of prospective returns [2]. Stronger climate exposures diminish feasible, safe, and affordable transitions yet paradoxically stimulate flows toward large urban centers deemed resilient enough to absorb migrants. Subnational political and regulatory uncertainties fuel uncertainty over destination viability and promote transiting across territories deemed regulateable [5]. High aggregate food prices inhibit the prospective conditioning of migration efforts compatible with confirmation of persisted benefits. Intermediating measures are contingent upon regional features whose modification eludes the authority of individual states [6]. Monitoring devices and statistical transparency foster deliberations around resource allocations, contributing to the understanding of migration dynamics and the shaping of relevant interventions. Climate migration operates under conditions whereby humanitarian transfers of asset claims and obligatory supply continuities remain unfulfilled. International cooperation, national regulatory frameworks, and local oversight engage fundamental patterns and processes with far-reaching implications [1]. Initial stages of climate change directly interfere with human activities through temperature rises, precipitation variations, extreme storm intensification, and wet-dry cycle shifts. Consequences emerge in the form of agricultural yields, water availability, disaster intensities and frequency, sea level height, and other critical socioeconomic factors [3]. Disruption of activity patterns and welfare trade-offs occur via investments and expenditures on hygiene, occupation, healthcare, trade, reparation, insurance, and mobilization responses concerning property, labour, internal circulation, access, undocumented transfers, and other areas [4]. While some regions remain marginally and intermediately responsive, economic shocks stemming from interconnectivity upon dedicated activities through high-frequency transitions, raw-material occupancies, and counter-access flows still feed migration. Climate-driven, national economic contractions correspond to increments in origination flows during which migration assimilates with prevailing patterns, emphasising the interconnectedness of climatological evolutions and migration trends [5]. Environmental, economic, and governance elements jointly articulate climate migration through interconnected channels, producing systematic feedbacks that privilege inward urban migration yet can reinforce both mobility and interconnectivity of diverse trajectories[5].

Theoretical Framework

Climate migration is a multifaceted and complex phenomenon that occurs across scales, both temporally and spatially, and is affected by multiple interconnected climate change-related and non-climatic drivers [6]. Previous studies have proposed several conceptual frameworks to account for local determinants, leaks, and place-specific drivers. Nevertheless, the climate migration debate remains rife with confusion, ambiguity, and contestation regarding the immediate and underlying drivers, trajectories, and buffering mechanisms involved [7]. Distinguishing forms of climate migration and access to climate migration are further sources of conceptual ambiguity and confusion. Therefore, two complementary conceptual frameworks offer a way to synthesize fundamental issues in climate migration research and facilitate clearer understanding and communication [8]. The notion of migration as outcome, rather than as event, elevation of direct and indirect climate change drivers to the same level of abstraction, and the disaggregation of climate migration into three fundamental subforms of climate-induced displacement, climate-related mobility, and climate-connected migration broadens the conception of climate migration [9]. Attention to drivers not directly set in motion by climate change itself helps clarify which drivers can be regarded as climate migration drivers and which are fundamentally distinct. A translocal perspective is considered to complement yet not fully integrate climate-influenced and climate-connected migration research programs [6]. Climate change is expected to increase human displacement worldwide. Although the climate-migration nexus is subject to multiple interpretations and misunderstandings about units of analysis at the individual and collective levels, characterization of climate migration is crucial for advancing scientific inquiry and enhancing the efficacy of climate-related policies spanning human mobility [7]. A conceptual framework illustrating the direct influence of climate change on migratory behaviour encompasses both spatial and temporal dimensions of mobility [8]. This framework serves to clarify and synthesise heterogeneous evidence on climate-related migration from a diverse range of empirical studies spanning disparate locations, traits, and environmental phenomena. Governing migration or restricting movement in regions or places where the climate is changing rapidly locally emerges as an important policy challenge in climate governance [9].

Drivers of Climate Migration

Climate change is increasingly considered a key driver of human mobility. It directly influences future movements more than in the past [2]. It impacts the timing and nature of spatial reorganization through variations in weather patterns, including longer-term drying trends that complicate access to potable water and impact livelihoods based on agriculture, forestry, and fishing [2]. Sea-level rise and glacier melt bring about temporary inundation, making low-lying areas progressively much less habitable. Specifically, it serves as a risk-multiplier, combining with multiple pre-existing macro-driven stresses (economic, social, political, and environmental) to constrain and compel national, household, and individual movement choices [10]. The additional macro drivers interact with

climate-related stresses differently depending on household-specific attributes of vulnerability and resilience [11]. With the socio-political systemic status quo operating there is a continuum of movement-channels where out-warding domestic or trans-border migration consistently becomes massively more problematic over time. Informs of common failure to respond now build a desperate risk of a subsequently tragic flow-unhall or lock-in by vibrant non-system-migration of even larger forcibly displaced escaped isolation and subjugation [3]. Albeit such channels are activated several other modes of spatial reorganization also gain severity throughout the corresponding time-frames [1].

Environmental Degradation and Extreme Events

Climate change varies in its impact across geographical regions; it is projected to reduce the habitability of some localities while increasing their attractiveness for migration to others [4]. The location, season, and magnitude of climate hazards such as landslides, floods, heat stress, and storms [11] are highly heterogeneous, both on a global scale and within individual countries. The trend towards increased mobility reinforces the need for integrated livelihood, environmental, urban, and population policies spanning the migratory continuum from origin to destination locations [2]. Environmental changes, both gradual and abrupt, act as driver of human mobility through different channels: they reduce access to resources such as food, water, and energy; threaten housing and human safety; and weaken the socio-economic framework for comprehensive well-being [4]. Vulnerabilities determine the extent of mobility in response to environmental changes, while location attractiveness shapes the choice of destinations [5]. People exposed to similar climatic hazards can follow dissimilar trajectories based on their livelihoods, socio-economic endowments, ethnic affiliations, or political influence [11]. Non-event or chronic environmental changes may remain unnoticed for years, and thus it is not uncommon for climatic changes to elapse before shaping relocation considerations [12].

Economic and Livelihood Shocks

Climate migration can be triggered by economic shocks, compounding the adverse effects of climate on the environment and migration [13]. Shocks affecting economic activity and livelihoods can be drought, floods or the degradation of freshwater resources [14]. These can lead to job loss and other adverse livelihood impacts. The links between economic shocks and climate migration can be seen in countries of the Middle East and North Africa, where water scarcity and the over-exploitation of groundwater have led to livelihood shocks in many rural areas [5]. Migration can offer a strategy to cope with these shocks, allowing households displaced by climate events to continue engaging in temporary migration for remittances or to avoid loss of human-capital investments. In some areas, climate change affects non-farm employment such as construction and services [15]. The 2010 heat wave and droughts in Kazakhstan severely curtailed agricultural production and farmer incomes. Internal migration surged after complementing national subsidies for erosion-prone areas [16]. Rural employment opportunities were curbed by the crisis, leading to large departures of rural youth to urban regions in Central Asia, evincing that economic shocks pushing people into temporary or permanent migration also operate in responses to climate shocks [17].

Social, Political, and Demographic Moderators

Armed conflict, political repression, and demographic pressure interact with climate-related impacts to shape mobility decisions [18]. Social discontent and ineffective political institutions increase both out-migration and in-region settlement, while government consistency and trust drive the relocation of economic activities within a region rather than out-migration [19]. Adverse climate shocks reduce the probability of leaving, reportedly through deteriorating economic conditions. Such conditionality varies across regions: for example, in South Asia, climate impacts indirectly foster out-migration through discontent and political instability, while in Sub-Saharan Africa, conflicts often emerge after climate events [17]. Population density and economic advancement facilitate internal mobility but constrain external migration due to the opportunity costs attached to leaving the enclave. Among all observable socio-political factors, only population density strengthens the connection between climate variables, discontent, and out-migration [1]. The enhancement of civil freedoms can indirectly boost out-migration by mitigating the adverse impacts of climate anomalies and related grievances.

Adaptation Pathways and Protective Measures

Adaptation encompasses a variety of measures that can enable adaptation to climate change effects. Proposed adaptation pathways include: [1] internal government-sponsored adaptation measures to build resilience; (2) planned national or locality-wide relocation out of at-risk areas; and [3] additional support to efficiently undertake change without needing to move due to loss of residential security [2]. Adaptation initiated within a country to strengthen resilience such as infrastructure and economic development programs is termed internal climate adaptation [4]. Planned relocation of the populace from an island nation to a neighbouring country following anticipated inundation represents a formal, governmental process. Provision of assistance to counter livelihood loss without the necessity of vacating premises is termed non-relocation adaptation [5].

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Internal Adaptation and Resilience Building

Recognizing migration as a viable adaptation strategy acknowledges the predominant role of hydrometeorological extremes and underscored climate-change contextualization [4]. This situates the synthesis within concerns for recovery-phase livelihood resilience in the face of climate-exacerbated multiple hazards. Case studies reflect observations that climate-related migration, encompassing voluntary or forced movements, is both common and beneficial across diverse settings [6]. The link between migration and resilience is crucial for a global development perspective, highlighting diverse interrelations influenced by wider political-economic dynamics. Evidence underscores climate-driven mobility trajectories in rough correlation with exposure intensity [6]. Empirical resources documenting such processes remain scarce, yet existing illustrations across southern and east Africa, south and southeast Asia, and Latin America affirm this link [7]. These patterns emerge amid far-reaching critical-resource and well-being deprivations catalysed by climate-influenced recurrence rates and duration of problematic conditions [8]. Hazard trends point towards lengths of periods in need of remedial action, with too-frequently and systematically failing to recover within elapsed flood- or drought-aggravated time frames across targeted regions [3].

Planned Relocation and Safe Movement

Countries facing progressive climate stress manifests such as sea-level rise, intensified cyclones, river and lake shrinkage, or desertification may decide to part with territory altogether [12]. Climate-induced relocation in the Pacific Islands, coastal Bangladesh, the Netherlands, Sweden, and some countries may involve entire islands and atolls, deltas, relocation-and-rebuilding housing schemes, the migration of people originally from eroded islands and coastlines, all people leaving haunted sites, and, in future, entire nations. Climate movements in Pacific nations may shape entirely new concepts of movement [13]. The United Nations Framework Convention on Climate Change (UNFCCC) and Paris Agreement invite decisions on which climate effects will require relocation, which actors must orchestrate efforts to protect, when relocation must occur, what support accompanies relocation initiatives, and what constitutes appropriate movement [14]. Auxiliary relocation imperatives may arise to protect displaced communities were climate-linked support, funding, expertise, housing, and infrastructure provision insufficient [2, 15].

Non-Relocation Adaptation and Assistance

Unaddressed climate and environmental factors, along with extreme events, can exacerbate vulnerabilities and hinder responses to climate change [6]. Environmental and climate-related problems individually or in combination represent one of the underlying drivers of climate migration [7]. For instance, changing climatic conditions may precipitate economic and livelihood shocks, weaken internal migration systems, or raise environmental concerns. Multiple options are feasible for addressing environmental and climate-related disturbances other than relocation [8]. Diverse adaptation measures enable households to maintain residence and preserve livelihoods. Non-relocation adaptation strategies take various forms; adaptation assistance that builds resilience capacity may also play a pivotal role [9]. Migration-oriented climate action that supports settlement and enhances living quality may contribute substantially to climate migration [6]. Climate adaptation whether related to migration or not often relies on collaborative interventions involving various modes of governance across multiple scales and on a localised basis [7]. The climate migration nexus is a complex political and institutional matter. The mixture of governance levels reveals the broader interconnections of climate action, development, and migration. Consequently, diverse communities continue to seek assistance for environmental and climate challenges, independent of relocation objectives [10]. Activities and incentives that avert displacement remain key components in many climate-migration dynamics [8].

Governance of Climate Migration

Governance of climate migration concerns plans, actions, decisions, and implementations that frame, guide, and oversee climate-exposure relocation and other adaptation measures in relation to climate change [7,8]. Migration is shaped by deeply embedded socio-economic and political conditions, and climate change integrates into, amplifies, redefines, and interacts with existing migration drivers [9]. With consideration of this interplay, frameworks for tracking climate-exposure migration governance address international, national, subnational, local, and community-level dimensions and map adaptable policies, plans, instruments, and related institutions [7]. In this context, a systematic, geography-oriented review of climate-exposure relocation and accompanying systematic evaluation of governance-level engagement with distinct migration situations, supported by a comprehensive encompassing framework has been pioneeringly undertaken [8]. The first framework reports a variety of governance strategies for enduring climate-exposure relocation in select pivotal socioeconomic contexts and geographical configurations to inform subsequent research and innovative policies on climate migration [10]. More than seventy countries display various migration governance modalities, including legally sanctioned and strategically targeted climate-exposure movements [11]. While international instruments, global agreements,

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directives, and action plans articulate diverse climate-action themes and challenges, distribution across migratory situations and the attention to climate-exposure relocation remain uneven [12]. Considerable justification exists for prioritizing the governancing of climate-exposure relocation and attention to prevailing climate-migration schemes [13]. Climate-related environmental change, gradual and abrupt, widely evicts and dislocates individuals, families, communities, and entire populations, acts in concert with prevailing drivers of mobility, and currently dominates the global climate-migration debate [9, 14]

International Cooperation and Legal Instruments

International cooperation on migration and climate change has gained increasing prominence at the political level, with several multilateral initiatives establishing formal mechanisms, yet binding interventions remain frustratingly absent [5]. The Cancún Adaptation Framework adopted at COP 16 in 2010 requests better understanding of and coordination on climate change-induced displacement and migration, while COP decisions addressing loss and damage from adverse climate impacts pursue evidence and action beyond dialogue or study [10]. Independently, the Nansen Initiative and the Migrants in Countries in Crisis (MICIC) initiative, respectively launched in October 2015 and 2016, offer innovative approaches for government and stakeholder cooperation in protecting people from the adverse effects of environmental change [2]. By integrating environmental triggers into broader discussions on climate change-related drivers of mobility, these efforts attract diverse State and regional involvement. Government initiatives on migration, climate and the ENCC-M, together with the Guiding Principles on Internal Displacement, receive extensive backing and contribute to legal and institutional frameworks across countries and regional bodies [7]. The Platform on Disaster Displacement, following the Nansen Initiative, continues to broaden engagement and accommodate new issues along a voluntary and pragmatic path [8].

National and Subnational Policy Architectures

Climate migration affects and is affected by multi-level governance systems. National governments are likely to emerge as central actors, but their specific roles, decision-making patterns, and interactions with subnational authorities differ across contexts [6]. By mapping the diverse architectures of national migratory policies defined as extent, upstream influence, inclusion of climate-related drivers, subnational strands, and temporal dynamics it is possible to generate important insights [7]. Climate migration occupies a visible position within national and, especially, regional policy agendas [11]. For instance, states grapple with the concurrent emergence and prioritisation of climate-related internal and cross-border migration across geographically, economically, and politically varied contexts. Substantial demand exists for further policy and research on planned relocation, associated triggers, challenges, and strategic approaches [8]. Unfortunately, few high-profile cases or copious empirical evidence to inform the topic are available [9]. Many countries have adopted multi-level climate-change adaptation policies encompassing the need for human mobility or planning relocation [12]. Existing frameworks, studies, and tools elaborating climate-migration scenarios or tracking movement linked to climatic phenomena commonly overlook upstream factors, including the influence of national climate-migration plans or adaptive-mobility strategies on positioning, prioritisation, and content within relocation agendas [13]. Such upstream aspects gain salience, especially in fragile settings, if climate-triggered movement at other governance levels engenders demands for climate-migration policies, leading to a ratcheting-up dynamic [13].

Local Governance and Community Engagement

Climate change presents a multitude of risks as well as unpredictable, cumulative, and contextually dependent consequences that make it a formidable threat to governance systems everywhere [11]. With local infrastructure deteriorating, informal settlements proliferating, and resources dwindling, the agents of climate migration are often seized upon as a rationale for repurposing authority to address alleged shortages [12]. Reduced rainfall, flooding, and bulldozed green space combined with philanthropic efforts that incent desired urbanization compounds these pressures [8]. While rough estimates put the number of climate migrants globally above 25 million annually during the mid-1990s, recent estimates remain murky amid uncertainty about attributable damage costs and climate-related migration pathways [6]. An early 21st century-era projection of 250 million climate migrants based solely on population growth reflects elasticity of that parameter independent of migration rates via water supply augmentation under the IPCC's A2 scenario [13]. Such diffused speculation nevertheless elicits concern that migration is the decisive event for lower-tier cities unable to compete with larger metropolises through ancillary investment [14]. Elsewhere, resettlement increasingly converges with protected-area dislocation. Onsite community representation within governance frameworks and migration deliberation mechanisms fosters equity. Grassroots social capital, especially in informal settlements where basic services are scantest, mitigates vulnerability under climate hazards that underpin migration analysis [15]. Mindful of

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multifactorial migration drivers beyond climate, embedding protective migration within broader urban planning encourages reinforced safe movement alongside policies that prioritise nondisplacement. Robust accountability to promote civic engagement garners further legitimacy in decisions over migration as an option [16].

Data, Monitoring, and Accountability

Migration is one of the most globalized human activities that play a crucial role in building the domestic economy [13]. For decades inter-country migration patterns have been continuously researched and analyzed to formulate proper policies and facilitate intensifying the phenomenon [14]. On the contrary, migration within national border remains underexplored even though most of the world population migrates across national territories. Measurement of domestic migration remains extremely challenging if not impossible to assess. Depending on the circumstances, it is clear that a huge amount of national migration activity persists and correct valuation measurement is desperately required [1]. An adequate measure of forced domestic migration estimation measurement would allow those countries who suffer from forced migration internally to hyperaccumulate possible migration intensity and continue formulating an ongoing plan to combat climate change and nazism accordingly [15]. Analyzing barriers to drive internal migration measurement and simplifying the measurement could also provide insights for countries in similar condition and evaluate improvement more effectively [16].

Evidence Synthesis and Case Studies

Climate migration policies must not overstate the inevitability of movement and consider context-specific requirements for climate-adapted rural and urban inhabitation, with migrants regarded as agency-bearing actors [13]. Excessive focus on an environmental-migration link has illustrated how multiple economic and social drivers can attenuate and reshape climate stresses [1]. Climate adaptation, furthermore, can occur within environmental degradation and risk without territorial passage; improving impermanence in low-hazard supratidal float homes can sustain inhabitation in flood-prone coastlines and enhance health and mobility during intermittence [12]. Coastal and inland floodplains emerge as aggregated zones for the economy, ecology, and hydrology of poverty-contemplated climatic migration, and aridity acts on both the trigger and livelihood pathway for drought-coexisted resource-based mobility, making energy transition and stabilized commodity dependency the evolution perspectives less considered under climate transition [13].

Case Study: Coastal Regions

Developing country coastal regions are extremely vulnerable to climate change a growing concern for human mobility [12]. The dynamic and complex challenges associated with coastal climate change, as well as varied degrees of institutional capacity and resources devoted to addressing the problem, shape government responses to climate migration and other factors that influence mobility decisions [1]. Government efforts to assess the influence of climate change on internal migration encompass varied situations and responses in Asia (Bangladesh), Africa (Cameroon), and Latin America (Uruguay) [13]. In Bangladesh recognized internationally as the “adaptation capital of the world” investments in human development and other strategies have bolstered community resilience to coastal climate change [14]. The government’s focus on enhancing adaptive capacity and reducing vulnerability helps minimize the influence of climate change on migration decisions, and other socio-economic factors continue to dominate internal migration. Nevertheless, climate change does shape mobility, and a population still exposed to high levels of poverty constitutes a major humanitarian concern [15]. Coastal area accessibility remains a major migration driver despite integrated coastal zone planning. A major cyclone in 2007 exemplifies how increased driving factors can lead to out-migration. Further, the government is increasing its focus on climate-induced mobility and actively encouraging dialogue on the issue [16]. In Cameroon strategies for responding to climate-induced migration emphasize both internal and cross-border movement associated with multiple factors, including the state of the economy, agricultural market conditions, land access, resource depletion, and security [14]. Efforts to assess these influences at both national and local levels highlight the complexity of climate change and migration linkages. Coastal areas have also been home to increased internal mobility associated with important coastal economic opportunities. Building resilience in coastal and riparian areas thus emerges as key to reducing climate-induced migration, a goal that government agencies across the country actively pursue [15]. In Uruguay coastal regions are subject to rising sea levels, flooding, storms, and other extreme events. An inter-agency working group is gathering evidence to better understand the influence of climate-related challenges on coastal-riparian migration [16, 17]. Consideration of climate change within existing government spatial planning and territory management mandates remains a government priority [15].

Case Study: Inland Floodplains

With climate change and population growth, consistent flooding in many floodplains poses societal issues [10]. Dynamic recolonization/disequilibrium theory describes economic response to floods, with accelerated urbanization, reduced reliance on agriculture, increased rural–urban migration, and industrialized riverside

revitalization [11]. Reinforcing land–water–people relations during urbanization reduces vulnerability through measures like early warning systems, contingency plans, participatory engagement, and insurance schemes [16]. Area inhabitants become increasingly involved in flood-management decision-making, influencing long-term spatial transformations contrary to earlier top-down approaches [17]. Because flood disadvantages vary considerably, resources, capacity, knowledge, and concern over flood risk indirectly affect the frame of reference in accommodating and managing floods [15].

Case Study: Arid and Drought-Prone Areas

The northern half of the African continent is dominated by arid and drought-prone environments. The impact of climate change on water scarcity and related climate stresses is increasingly recognised across the Middle East and North Africa (MENA) region [1]. Results indicate a climate-induced shift in internal migration patterns in Jordan, while changes in transborder migration into neighbouring Arab countries or Europe remain yet unclear. Non-linear climate stressor thresholds trigger migration, with severe impacts on well-being and adaptation decisions [2]. Evidence suggests that copious physical water resources are not a sufficient condition for alleviating socio-political fragility, sustaining human development, assuring long-term equitable economic growth, or steering transit human mobility flows out of MENA [3]. Besides drought-prone areas, urban agglomerations are perceived as climate stressors, owing to deteriorating living conditions, degraded environment, pollution, and risks. Dynamic climate change migration relationships constrain agricultural adaptation and coping strategies [16]. The gap in public provision and financing of adaptation in the countries surveyed propagates action at the community and household levels, including migration, generating uncoordinated institutional footprints, social conflicts, and maladaptation [17].

Gaps in Knowledge and Methodological Considerations

As a significant body of empirical literature demonstrating the complex and multifaceted relationships between climate change and human mobility develops, prominent knowledge gaps, limitations, and diverging perspectives persist [15]. At the same time, conceptual bounds have yet to be established, and cumulative insights remain fragmented across different scales, locations, and temporalities [17]. Accordingly, rigorous systematic approaches are critical to mapping existing knowledge, identifying prevailing gaps, and, subsequently, anchoring future investments in building up climate-mobility science [18]. Conceptual explorations of migration processes, including logics, pathways, and typologies, have proliferated but remain unsettled. Approaches often misplace analytical foci on motivations for departing places rather than on arrivals or on destination-selection criteria and continue to conflate diverse migratory configurations [1]. Attention to how migration relates to other, concurrent mobility patterns also remains insufficient. Furthermore, distinctions among migration processes connected to environmental factors necessitate elaboration [2]. Indicators, ill-suited for the rapid, systemic dynamics of environmental change, must also expand beyond purely environmental and or climate parameters to integrate economic, social, demographic, and political considerations. Elucidating migration pathways as forms of adaptation while openly and transparently addressing limits, contingencies, and caveats would also strengthen the emerging climate-mobility canon [6].

Policy Implications and Recommendations

Policy interventions related to climate migration should prioritize resilience and adaptive measures at origin because climate displacement is a political and developmental challenge rather than a humanitarian one [19]. Studies emphasize the need for investments in climate-change adaptation at the origin to prevent forced migration and a focus on relocation only as a last resort [13]. Policy frameworks should build on existing rural–urban flows rather than predominantly relocating populations from environmentally degraded areas [18]. Enhancing agricultural resilience can allow people to remain in situ while pursuing opportunities, especially for young people under growing pressure to migrate. Policies should integrate various adaptation responses, such as biofuels, agroforestry, horticulture, and crop diversification that are context-dependent and remain poorly understood; these options are increasingly adopted in West Africa, where climate change forces adaptation [19].

CONCLUSION

Climate migration represents a growing global challenge that lies at the intersection of environmental change, socio-economic vulnerability, and governance. As climate change intensifies through rising temperatures, sea-level rise, extreme weather events, and environmental degradation, increasing numbers of people are compelled to move in search of safety, livelihoods, and sustainable living conditions. However, migration decisions are rarely driven by climate factors alone; economic opportunities, political stability, social structures, and demographic pressures significantly influence mobility patterns. The evidence reviewed in this paper demonstrates that effective responses to climate migration require a combination of adaptation, resilience-building, and governance interventions. Strengthening local adaptive capacity through investments in infrastructure, livelihoods, disaster risk reduction, and social protection can reduce forced displacement and enhance community resilience. Where

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relocation becomes unavoidable, planned and rights-based approaches are necessary to safeguard the dignity, livelihoods, and well-being of affected populations. Furthermore, climate migration governance must be coordinated across international, national, and local levels. Strong legal frameworks, inclusive policymaking, reliable data systems, and meaningful community engagement are critical for ensuring that migration remains a choice rather than a necessity. As climate risks continue to grow, policymakers must integrate migration into broader climate adaptation and sustainable development strategies. Ultimately, addressing climate migration effectively requires a proactive, collaborative, and human-centered approach that recognizes mobility as both a challenge and a potential adaptation strategy in a changing climate.

REFERENCES

1. Wodon Q, Liverani A. *Climate Change and Migration in the MENA Region: An Overview*. Washington (DC): World Bank; 2014.
2. Martin SF. Environmental change and human mobility: Trends, law and policy. In: McAdam J, editor. *Climate Change, Forced Migration, and International Law*. Oxford: Oxford University Press; 2017. p. 15–34.
3. Schwerdtle P, Bowen KJ, McMichael C. The health impacts of climate-related migration. *BMC Med*. 2018;16(1):1–7.
4. Bendandi B. *Vulnerability and Resilience in West Africa: Understanding Human Mobility in the Context of Land Degradation*. Brussels: International Organization for Migration (IOM); 2017.
5. Wodon Q, Liverani A. *Climate Change and Migration in the MENA Region: An Overview*. Washington (DC): World Bank; 2014.
6. Sakdapolrak P, Sterly H, Borderon M, Bunchuay-Peth S, et al. Translocal social resilience dimensions of migration as adaptation to environmental change. *Nature Climate Change*. 2024;14(2):145–153.
7. Bettini G, Nash SL, Gioli G. One step forward, two steps back? The fading contours of (in)justice in competing discourses on climate migration. *Geogr J*. 2017;183(4):348–358.
8. Matthews T, Potts R. Planning for climigration: A framework for effective action. *Int J Clim Change Strateg Manag*. 2018;10(2):218–233.
9. Persson Å, Hall N. Global climate adaptation governance: What is governed and why? *Surv Perspect Integr Environ Soc*. 2016;9(1):1–11.
10. Matias DM, Mosuela C. International migration opportunities as post-disaster humanitarian intervention. *Disasters*. 2016;40(4):722–743.
11. Rai S. *The Politics of Climate Adaptation*. London: Palgrave Macmillan; 2016.
12. Soare K. *Climate-Induced Migration Policies in Atoll Island States* [master's thesis]. Budapest: Central European University; 2019.
13. Schwerdtle PN, Stockemer J, Bowen KJ, Sauerborn R, et al. A meta-synthesis of policy recommendations regarding human mobility in the context of climate change. *Int J Environ Res Public Health*. 2020;17(22):1–18.
14. Leal Filho W, Modesto F, Nagy GJ, Saroar M, et al. Fostering coastal resilience to climate change vulnerability in Bangladesh, Brazil, Cameroon and Uruguay: A cross-country comparison. *Mitig Adapt Strateg Glob Change*. 2018;23(4):579–594.
15. Keeley C. Preparing for climate change in three New England coastal communities: Lessons on motivations, approaches, and outcomes. *J Coast Conserv*. 2012;16(3):255–262.
16. Mortreux C, Safra de Campos R, Adger WN, Ghosh T, et al. Political economy of planned relocation: A model of action and inaction in government responses. *Glob Environ Change*. 2019;58:101943.
17. Rao N, Singh C, Solomon D, Camfield L, et al. Managing risk, changing aspirations and household dynamics: Implications for wellbeing and adaptation in semi-arid Africa and India. *World Dev*. 2020;125:104667.
18. Borderon M, Sakdapolrak P, Muttarak R, Kebede EB, et al. Migration influenced by environmental change in Africa: A systematic review of empirical evidence. *Demogr Res*. 2019;41:491–544.
19. Osei-Amponsah C, Quarmin W, Okem A. Understanding climate-induced migration in West Africa through the social transformation lens. *Front Clim*. 2023;5:1184576.

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