

Cambridge Centre for Social Innovation

Peaceshaping and Climate Lab

CLIMATE MOBILITIES: UNDERSTANDING THE ENVIRONMENT-CLIMATE- MOBILITY NEXUS

Working paper summary report by
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Working paper and summary produced by
Cambridge Centre for Social Innovation, Peaceshaping and Climate Lab,
with funding support from alumni of the MSt Social Innovation,
Cambridge Judge Business School.
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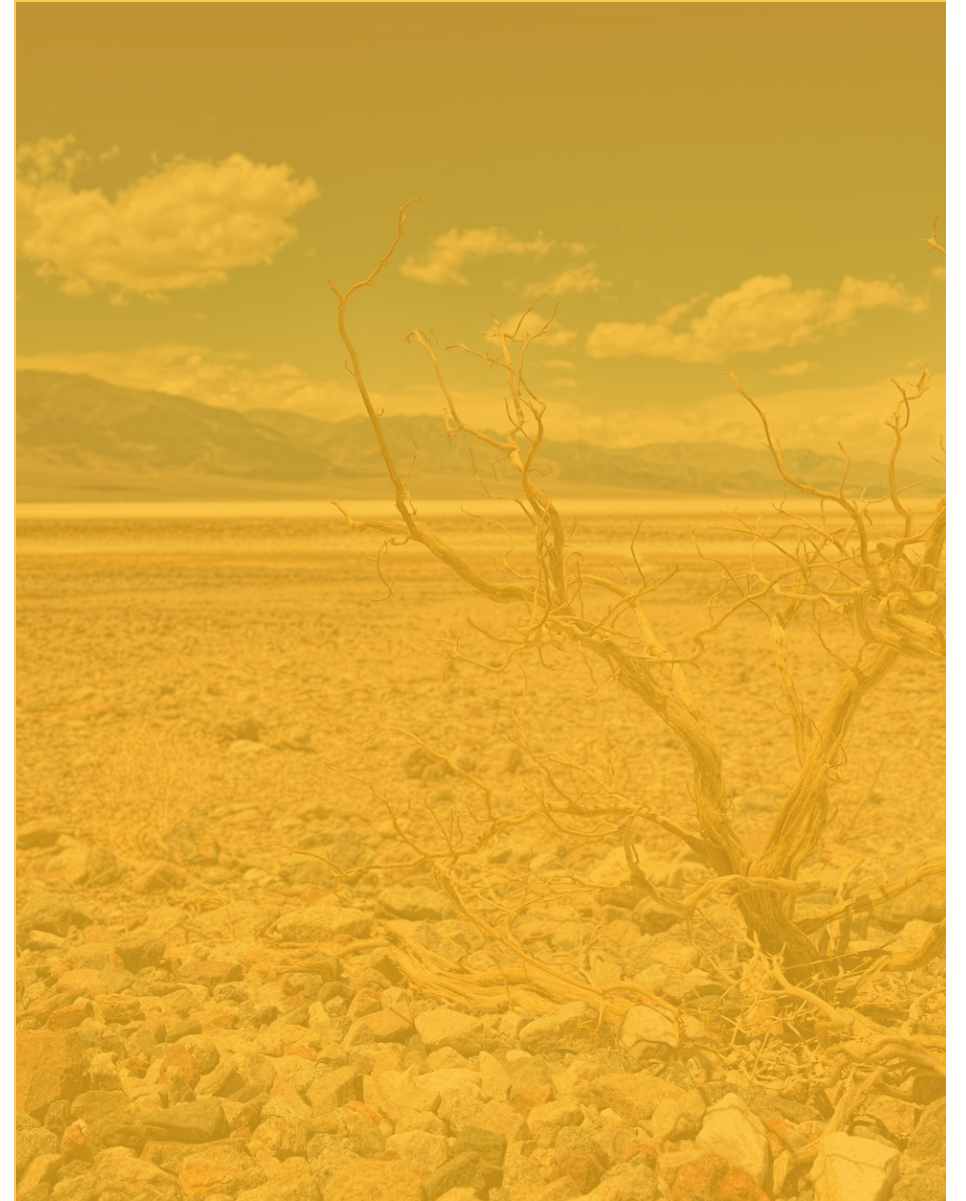
To access the full working paper, visit the [CPCL web pages](#)

How to cite this document:

Harbour, S., & Darlington, M., (2024). 'Climate Mobilities: Understanding the climate-environment-mobility nexus'
CPCL, Cambridge Centre for Social Innovation.

Contents

1. Introduction
2. Drivers of climate mobility
3. Dimensions of climate mobility
4. Responses to climate impacts
5. Current and projected numbers of IDPs
6. Climate mobility case studies
 7. Rwanda's Model Green Village
 8. Protection and Return Monitoring Network, Somalia
 9. Adaptive capacity building in Pakistan
10. Recommendations for policy and practice
11. Directions for future research and development
12. References



Introduction

The Cambridge Centre for Social Innovation has commissioned this working paper as part of the Cambridge Peaceshaping Climate and Conflict Lab (CPCL). This summary outlines key insights from the full paper, which can be read on the Centre for Social Innovation web pages.

The CPCL addresses the intersections of climate, conflict, and peace, investigating how to foster resilient and sustainable practices and collaborations for peacebuilding. As an interdisciplinary space, the CPCL prioritises bridge-building and collaborative action to respond to the impacts of climate change on human conflict. In doing so, it aims to provide a relevant and cross-cutting environment for understanding the contemporary context within which we must confront these evolving challenges.

This working paper provides an overview of current research on the topic of climate mobility – the movement of people due to environmental and climate-related changes. These changes range from droughts and floods to rising sea levels. They drive both voluntary and involuntary human migration and impact those unable or unwilling to move. Different climate mobilities present complex challenges for policymakers, researchers, and practitioners, as they intersect with issues of conflict, resource scarcity, and sustainable development.

Traditional migration models focus on human movement for economic and political reasons. We must now include environmental factors that influence when, why, and how people move, and incorporate the experiences of immobile populations—both those ‘trapped’ and those determined to remain in place.

Addressing climate mobilities requires multilateral and interdisciplinary collaboration, better empirical data, and the incorporation of indigenous knowledge. Practitioners must adopt proactive strategies to build climate-resilient communities, promote sustainable development, and ensure that policy responses are informed by both local contexts and global frameworks.



Drivers of climate mobility

Is climate a primary cause?

The term 'climate mobility' refers to a subset of environmental migration in which people move or do not move because of environmental factors linked to climate change.

While there are clear links, it is difficult to attribute patterns of movement solely to climate. Mobility is also determined by socio-economic and political factors. Yet climate and environmental changes are significant both through their influence on these factors and as an increasingly distinct marker of people's decision-making.

Academic and grey literature projects significant increases in future migration, especially in regions where rising sea levels, desertification, and droughts are already prevalent. These regions tend to be - although not always - places already experiencing poverty and/or instability.

Drivers



Sudden-onset climate events. Natural disasters such as floods, hurricanes, and cyclones force people to relocate immediately. These unpredictable events lead to large-scale displacement or severely at-risk 'trapped' populations.



Slow-onset environmental changes. Gradual environmental degradation, such as rising sea levels or desertification, forces communities to move or to face heightened vulnerability in increasingly inhospitable environments.



Water scarcity, excess and quality. Many environmental changes manifest through impacts on water cycles and water scarcity. Rising intensity of these impacts drives chronic experiences of water insecurity; displacing or endangering various communities.



Poverty. Economic factors, which can be exacerbated by environmental change, drive migration as people seek better living conditions or are pushed into poverty due to climate impacts.



Conflict and instability. Environmental degradation can heighten competition for resources, triggering conflict, which in turn features in or forces people's decisions to move or harms those unable to do so.



Flood hits Porto Alegre, Brazil, 06/18/2024, photo: DPU

Dimensions of climate mobility

Dimensions

There are several intersecting dimensions to climate mobilities. These experiences may be voluntary or involuntary and may be short-term, long-term, or cyclical. Climate migration can occur internally, within countries, or externally, across borders. When people migrate across borders, they generally stay within the same region.

Before the 21st century, the primary focus was on international climate migrants, popularised by narratives of 'environmental refugees'. Recently, 'internally displaced people' (IDPs) have garnered the most attention and are now recognised as constituting the largest group of migrants.

Mobility

Voluntary climate mobility

Unlike forced migration, voluntary climate mobility is often a proactive response to deteriorating environmental conditions. This includes both temporary and permanent relocations. Some communities may migrate seasonally to avoid drought, or permanently to escape the impacts of rising sea levels or agricultural degradation.

Voluntary

Displaced people

Many people are displaced by climate impacts, or conflict. Internal displacement (within countries) has garnered more research attention recently because it constitutes the largest share of climate-related migration. This reflects a need for comprehensive, localised responses, as most displaced individuals remain within their national borders.

Involuntary

Immobility

Voluntary immobility

Many consciously choose not to migrate despite experiencing climate vulnerabilities. This decision is often rooted in deep cultural or emotional attachments to ancestral lands, as seen in Pacific Island nations like Tuvalu. Others may choose to stay based on political beliefs about climate change or resilience efforts.

Trapped populations

Some individuals and communities are forced to stay despite environmental risks. They may lack the resources or social networks to migrate, or they may have strong cultural and emotional ties to their land. These "trapped" populations face increasing vulnerability.



"Emphasising that dominant migration trends are internal, not international, can help counter harmful and misleading 'crisis narratives' that suggest mass migration leads to violent climate conflict, which results in the stigmatisation of displaced people."

Sophie Harbour, Research Associate, Cambridge Peaceshaping and Climate Lab

Responses to climate impacts

Adaptive responses

Migration is one of many possible responses to climate impacts. Other responses include diversification and collective action. People who do not migrate increasingly need new strategies for making adaptations, and those who are trapped are the most vulnerable. Migration can be seen as part of a dynamic "portfolio of responses" to the multifaceted challenges posed by climate change (Caretta et al. 2023).

Migration can be both adaptive and maladaptive. Moreover, it is usually a combination of both. Binary arguments are unproductive compared to more careful considerations of how to benefit from adaptive migration while mitigating maladaptive effects.



"Migration has been a crucial survival strategy throughout human evolution. It has allowed us to adapt to climate fluctuations, while also requiring us to adapt to different landscapes. Climate migration should not be seen as a crisis or threat, but as part of a range of adaptive human responses to climate change that will be key to our survival and flourishing."

Prof. Neil Stott, Co-director, Cambridge Centre for Social Innovation

Mobility as adaptation

Migration is increasingly seen as a proactive adaptation strategy. Individuals or groups may relocate temporarily or permanently to cope with adverse environmental conditions and risks such as droughts, floods, or long-term degradation.

Immobility and adaptation

While some populations are 'trapped', many people actively choose not to migrate, despite experiencing environmental impacts. This can be due to cultural attachment to place or community, or politicised views on climate change. Immobile people—whether voluntarily or involuntarily—need to adapt in situ.

Diversification of livelihoods. Communities may avoid migration by diversifying their livelihoods to reduce dependency on at-risk resources. They often engage in informal economies or seek opportunities in urban areas while maintaining rural homes as a safety net.

Collective action and local knowledge. Indigenous knowledge and community-based initiatives play a critical role in adaptive responses to context-specific challenges, using local environmental knowledge to mitigate risks without migrating.

Current and projected numbers of IDPs

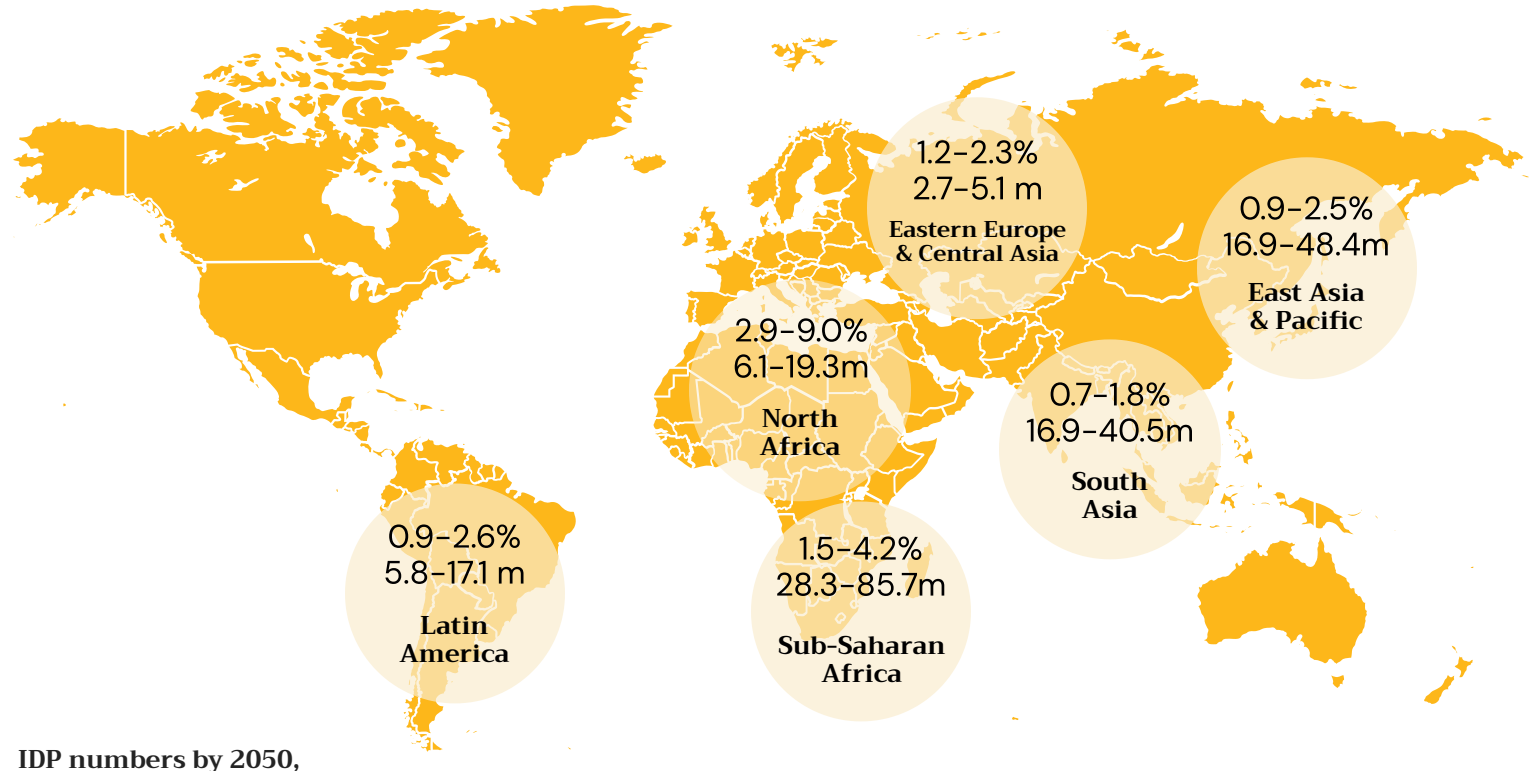
Current and future numbers

Projections can help demonstrate the severity of the challenges we face and underscore the potential impacts of climate change, particularly in vulnerable regions prone to flooding, droughts, and rising sea levels. Even sceptics of migration forecasting recognise that projections can prompt immediate action and heightened attention.

To this end, forced migrations are expected to rise exponentially in the coming decades. The majority of these are likely to be internally displaced people (IDPs), moving within countries. Research from IDMC shows significant displacement is already occurring and predicts that this trend will accelerate.

As of 2022, there are thought to be 60.9 million internally displaced people (IDPs) globally. This is projected to rise to between 76.7 million and 216.1 million by 2050 (based on data for the regions shown). Best- and worst-case scenarios will depend on climate change and the effectiveness of actions to mitigate its impacts.

The lack of projections for high-income regions reflects a geographic imbalance in the research and is a pressing priority for future research.



IDP numbers by 2050,
Best and worst case
projections expressed as
percentages and millions.

Sources: World Bank Groundswell reports (Rigaud et al., 2018; Clement et al., 2021); Internal Displacement Monitoring Centre (IDMC) 2023 Global Report on Internal Displacement.

Climate mobility case studies

Innovative approaches to monitoring and supporting climate migrants exist, but the need to conduct research and development, and to scale up successful models, is urgent. The following examples show how IDPs can be relocated to ecologically sustainable settlements, how community participation can enhance data collection to inform humanitarian response and policymaking, and how training in financial literacy and resilience building can help prepare vulnerable communities.



Rwanda's Model Green Village
IDP resettlement with sustainable development.



PRMN Somalia
A collaborative project for monitoring displacement.



Adaptive capacity building
Evaluating financial literacy training in Pakistan.

Case study - Rwanda's Model Green Village



Pictured: Lake Ruhondo, Gicumbi District

Rwanda's Green Model Village

The Model Green Village is located in Rubaya, in the Gicumbi District of Rwanda. The project resettles families of internally displaced people (IDPs). The families selected for relocation were chosen by the Rwandan government, with a focus on households from high-risk, disaster-prone areas, particularly those vulnerable to landslides and floods. The families were identified based on their exposure to environmental hazards, and the relocation was part of Rwanda's broader strategy to improve living conditions through sustainable development and climate resilience efforts.



Since 2011



Resettled
43 families



Funded by Rwanda,
UNDP, and other
partners



Plans to
replicate the
initiative

Existing work

Residents are provided with sustainable housing and eco-friendly technologies to improve their living conditions and resilience. The village integrates sustainable practices such as biogas, rainwater harvesting, and reforestation to ensure a sustainable livelihood for the families.

Practices like terracing also enhance agricultural productivity. This model has significantly improved the living conditions, income, and food security of the local population.

Potential for development

Rwanda has plans to scale up this initiative. The success of the Rubaya village has inspired efforts to replicate similar eco-friendly and sustainable development projects across the country. The goal is to enhance climate resilience, improve livelihoods, and promote environmental conservation.

The Model Green Village serves as a good example of 'Nature-based solutions' (NbS). These address societal challenges by integrating biodiversity and restoring ecosystems to support human safety and resilience.

Case study - Protection and Return Monitoring Network, Somalia



Pictured: Somali IDPs, after floods in Belet Weyne, 2014

Protection and Return Monitoring Network, Somalia

PRMN is a collaborative project for monitoring displacement. It mobilises local capacity to gather information, offering valuable insights for addressing climate mobility challenges. The project tracks displacements caused by conflict and natural disasters, forced returns, and related protection issues. Partners include the Red Cross Red Crescent Movement, universities, INGOs, UN agencies, governments, donors, and network initiatives.



Since 2006



Coordinated by Norwegian Refugee Council and UNHCR



In 2022, PRMN recorded 1.8m IDPs

Existing work

The PRMN is commended for its strong coordination and regular participation from partners. This enhances data collection strategies and ensures interventions are responsive to the needs of affected populations.

The network's insights inform humanitarian responses and policy decisions.

Comparable initiatives include:

- The Durable Solutions Initiative (DSI) in Ethiopia
- The Displacement Tracking Matrix (DTM) by the International Organization for Migration (IOM)
- The Internal Displacement Monitoring Centre (IDMC)

Potential for development

Collaborative partnerships with local communities, like PRMN, leverage traditional knowledge and participatory governance models. This builds resilience and encourages proactive responses to climate-related challenges. There is strong potential for this model to be expanded to cover more regions or additional types of displacement events.

Enhanced funding, increased use of technology (e.g., mobile data collection tools), and integration with broader international networks could further improve its reach and impact, making it a vital resource for global humanitarian efforts in tracking displacement due to conflict, climate change, and natural disasters.

Case study - Adaptive capacity building in Pakistan



Pictured: Gilgit-Baltistan, Pakistan, 2023

Adaptive capacity building in Pakistan

This research project evaluated financial literacy programs as a component of building community resilience in Gilgit-Baltistan, a region highly vulnerable to climate change (Ali et al, 2023).

Programs were designed to enhance the ability to plan for and respond to climate-related challenges. This included managing remittances and using financial tools to enhance community resilience. This was combined with disaster risk reduction to help improve adaptive capacity.



Conducted 2016 - 2017



Savings for flood-related needs rose from 13.5% - 69%



A collaboration with WWF Pakistan

Existing work

The interventions in the study had significant positive impacts on the adaptive capacity of the remittance-receiving households.

Key outcomes included increased household savings, improved financial literacy and improved disaster preparedness.

The program focused on and contributed to long-term resilience by encouraging the proper use of remittances for both disaster preparedness and livelihood diversifications.

Potential for development

The findings of this study support the need for targeted intervention in regions that rely heavily on remittances and face significant climate risks.

The study highlights the importance of guiding households in properly utilising remittances for both short-term needs and long-term resilience planning. This could be applied in similar migrant-sending regions worldwide.

The approach of combining financial literacy with community-based disaster preparedness can serve as a model for other disaster-prone areas. These strategies could be integrated into national and regional development strategies.

Recommendations for policy and practice

Agendas

Both mobility and immobility present urgent challenges, including human rights violations. Alarmist narratives, however, are counter-productive.

Without a critical approach, 'securitisation' can contribute to further militarisation, heightening tensions and exacerbating (rather than addressing) vulnerability.

These recommendations emphasise the need for holistic, inclusive approaches to effectively manage climate mobility, ensuring resilience and sustainability for all populations.

Approaches

Caution about crisis narratives. Alarmist narratives that present climate migration as a threat can be dangerous. Such narratives can heighten the vulnerability of already at-risk groups. It is important to contextualise migration, historicise trends, and portray 'a migration-centred view of human history'.

Develop collaborations and partnerships. Strong collaboration at all levels, from local communities to international organisations, ensures that all actors involved in interventions work together. Meaningful partnerships should be based on the concept of climate mobilities, which includes both mobility and immobility.

Tackle structural and political barriers. Policies need to move beyond "empty talk" and address the structural causes of displacement and mobility. This includes ensuring political will, improving communication between policymakers and researchers, and breaking down siloes in policy and practice.

Empower local participation and integrate indigenous knowledge. Recognition and incorporation of indigenous knowledge in decision-making processes ensure that communities are actively involved in creating solutions. Local knowledge is essential for the design and implementation of effective, context-specific responses.

Support sustainable development and resilience building. Proactive strategies should focus on building climate-resilient communities before crises arise. This involves integrating nature-based solutions (NbS) and focusing on improving local infrastructure to withstand climate impacts.



"The shift from 'climate migration' to 'climate mobilities' reflects a deeper understanding of human movement, acknowledging both mobility and immobility in response to climate change. This approach emphasizes the importance of collaboration, local participation, and structural change, moving beyond simplistic, crisis-driven narratives to focus on resilience, sustainability, and context-specific solutions."

Prof. Neil Stott, Co-director, Cambridge Centre for Social Innovation

Directions for future research and development

Agendas

To date, the majority of research on climate and mobility has been qualitative. While there are many challenges to conducting quantitative research, including data gaps, recent developments in modelling present opportunities for improved quantitative analysis.

Current research agendas continue to prioritise internal migration, the predominant form of climate mobility, while also examining how climate impacts are linked to social and political factors such as conflict and health. Understanding these links can help inform more effective interventions.



"Social sciences present opportunities for methodological development in climate mobility research. In particular, gendered, intersectional, and inter-generational approaches can help inform our understanding of the power dynamics and inequalities involved."

Dr. Michelle Darlington, Cambridge Centre for Social Innovation

Research priorities

Interdisciplinary approaches. There is a call for more interdisciplinary research that integrates environmental science, migration studies, social sciences, and humanities. This would help ensure more robust data, relevant findings and critical perspectives.

Temporal aspects. The temporal dimension of mobility remains understudied. Understanding short-term, long-term, and cyclical migration patterns requires further research, considering both voluntary and forced climate migration.

Modelling and projections. Refining migration models, particularly incorporating behavioural and agent-based approaches, can help understand tipping points.

Addressing geographic imbalance. Research has predominantly been conducted by high-income countries with a focus on low-income countries. Diversifying this spread - by funding researchers in low-income countries and by including high-income countries in fieldwork - can help ensure a balanced view of climate mobility as a global issue.

Methodological challenges

Data gaps. Reliable data are often unavailable, e.g., on populations, movement patterns, and climate impacts, especially at appropriate spatial and temporal levels. This limits quantitative studies. There is also a lack of inclusive empirical work to comprehensively understand mobilities.

Incompatibility of datasets. The absence of cohesive data strategies across research studies leads to incomplete or incompatible data. This includes a lack of standardised definitions (e.g., short/long term, seasonal/permanent migration), making meta-analyses more difficult. Establishing accurate numbers remains a challenge.

Bias. Researchers have pointed out 'sedentary bias,' a historical framing that views migration as a disruption rather than a natural human response. This perspective distorts our understanding of migration, neglects the agency of migrants, ignores the benefits of migration, and can negatively influence policy.

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