European Commission

Joint Research Centre

CLIMATE CHANGE AS A DRIVER OF MIGRATION AND DISPLACEMENT – EXPLORING LINKAGES

This fact sheet is part of a series that distils key topics in the climate migration literature into clear and concise summaries, addressing a need expressed by policymakers. Each fact sheet focuses on a specific subtopic, condensing existing knowledge into an accessible format. It provides an overview of the main findings alongside policy-relevant insights. **The fact sheets use the term 'climate migration' as a broad concept that encompasses various forms of mobility and immobility in the context of climate change**(1).

OVERVIEW

Climate change's impacts on the environment will have widespread consequences, influencing social phenomena through multiple channels [12,27]. Migration itself results from the combination of different drivers; therefore, **climate-related pressures need to be analysed alongside political, social and economic factors** [3,4,5]. Most analyses confirm that climate change influences migration, but this impact is generally **mediated by other contextual factors** such as household resources, vulnerability and adaptive capacities [10,2].

Figure 1 showcases some of the linkages found in the literature attempting to connect changes in environmental stressors to mobility dynamics.

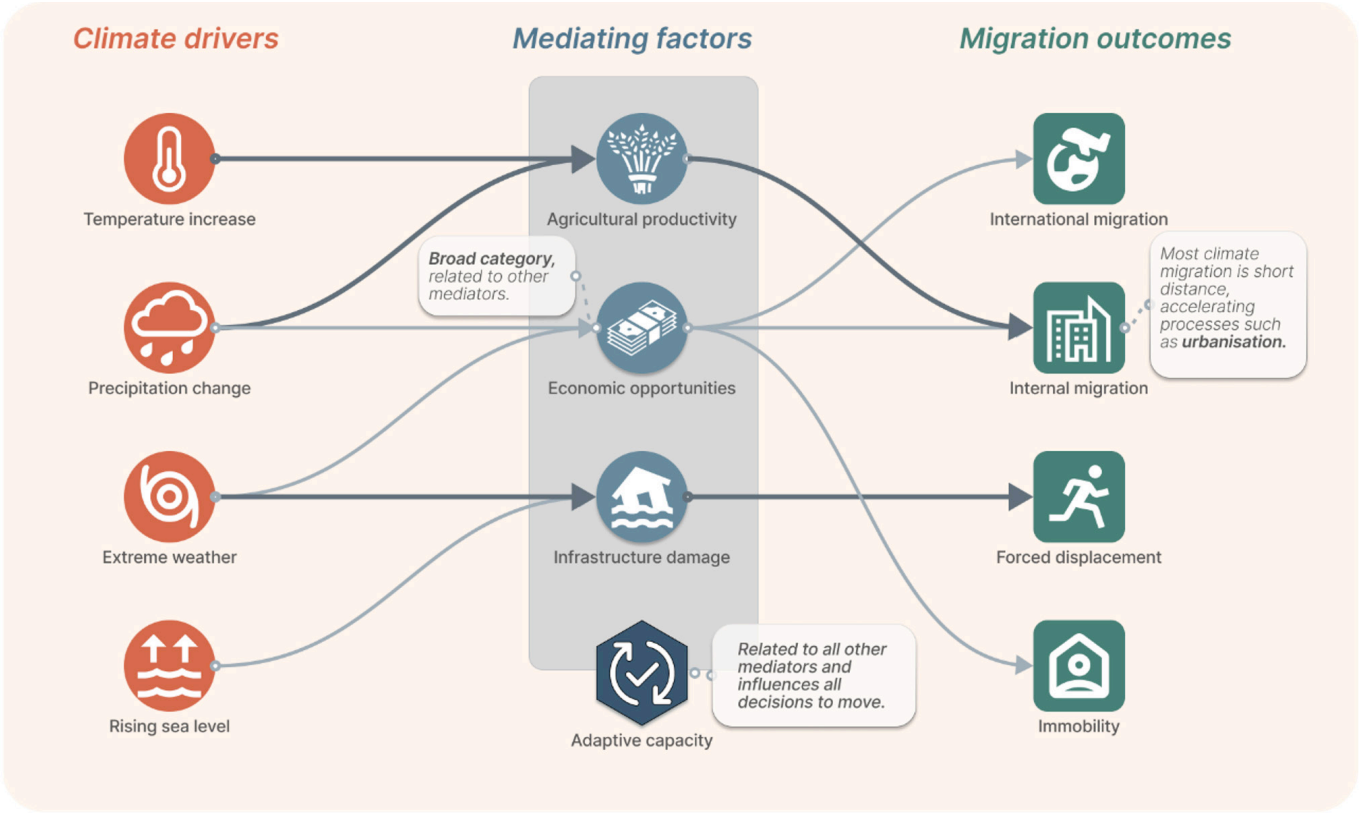
LINKAGES AND EXAMPLES

While there is a growing consensus that climatic events affect human mobility, **isolating climate change's specific impact** on migration is an **arduous** task [10,20,27]. Survey data shows that people rarely name environmental factors as their main reason for moving, though they often see them as part of a wider mix of drivers [18]. It is especially difficult to link gradual or slow-onset changes like droughts to mobility or immobility, compared to sudden events like floods, where the connection is more visible. This section explores these differences in more detail(2).

Slow-onset events cover gradual environmental changes such as variations in precipitation and temperature. These events can **induce migration and forced displacement by undermining livelihoods and depleting household resources.** Climate variability particularly affects rural communities, where changes in rainfall and temperature directly impact agricultural productivity and economic opportunities. Indeed, **agriculture is frequently cited as one of the main channels through which climate change impacts mobility** [10,20,7]. In some contexts, climatic stressors also accelerate existing trends such as urbanisation [19,21].

(1) See fact sheet on terminology for additional details.
(2) For more on the distinction between slow- versus sudden-onset environmental changes and migration, we have a dedicated factsheet.

FIGURE 1. Pathways from Climate Drivers to Migration Outcomes



Note: The figure highlights some of the key pathways linking climate stressors to migration, as identified in the literature reviewed in this fact sheet. The more established linkages are represented with darker and thicker arrows.

Most climate change-related migration is internal rather than cross-border, and its patterns vary significantly by context [24,11,3]. **Low-and middle-income** countries are generally more affected due to limited adaptive capacities and higher reliance on agriculture [11]. At the same time environmental change can also **reduce migration** – a situation often described as **"climate-induced immobility"** [10]. For example, in Zambia, climate variability has been linked to increased migration in wealthier rural districts but reduced mobility in more economically disadvantaged areas [24]. Ultimately, the **capacity and willingness to migrate in response to environmental stress is shaped by household resources and social conditions** – which may themselves be impacted by climate change [14,17].

Some studies have found **direct links** between slow-onset events and migration [11]. In low-lying Pacific Island nations such as Tuvalu, Kiribati, and Fiji, rising sea levels make climate change a more clearly identifiable driver. In Kiribati, this has shaped the government's "migration with dignity" policy, which promotes proactive relocation in anticipation of long-term uninhabitability [26].

Example

Many have pointed out that climate change does not act in isolation but as a **"threat multiplier"**, **amplifying existing vulnerabilities** and societal trends [9]. From 2006 to 2010, northeastern Syria experienced a severe **drought**, which accelerated migration to cities like Aleppo and Damascus. However, **urbanisation and rural outmigration were already underway before the drought, driven by subsidy cuts, privatisation and a lack of economic diversification**. The drought intensified existing vulnerabilities but was not the primary driver of migration. Migration to cities, combined with rising economic hardship and political repression, contributed to widespread discontent with the Baathist regime. Ultimately, governance failures and conflict triggered large-scale displacement, with environmental stressors acting as an aggravating factor [6,8].

Sudden-onset events such as floods, storms, and cyclones are becoming more frequent and intense due to climate change, and **often lead to immediate**

displacement [22]. In these cases, climate change is **more clearly seen as a direct driver of mobility**, as the link between the hazard and the movement is easier to observe. However, outcomes still depend heavily on underlying vulnerabilities – including how **resilient** communities are and what support systems exist for **recovery** [5]. Displacement is often short-term, but **repeated** or compounded shocks can delay return and prolong displacement – especially where housing, livelihoods and infrastructure are slow to recover [13]. **Limited household resources** can also limit how far people are able to move, leading to short-distance or circular movement and, in some cases, immobility [24,1].

Example

Pakistan's 2022 floods displaced over 8 million people, with displacement patterns shaped by geography, wealth and infrastructure. While **some communities managed to return and rebuild, others remained displaced for months** due to housing destruction, loss of farmland, and limited state support. In many cases, the **poorest were unable to move far from flood-affected areas**, highlighting how economic constraints contribute to short-distance displacement and involuntary immobility [25,1].

Linking climate change and migration requires **better data**, in particular for low-income countries. Migration data needs to be **timely**, regularly updated and **geographically disaggregated** to reflect diverse mobility patterns. Specifically, since a lot of climate-related migration is internal and short-distance, it is important that data is granular enough to capture these movements. **Harmonisation** across countries and systems is also essential to enable meaningful comparisons. While **innovative** data sources like mobile phone records and satellite imagery are proving increasingly valuable, they are not yet widely available or usable at scale [15].

POLICY IMPLICATIONS

- **Caution is warranted when linking migration to climate change**. Migration decisions are shaped by a combination of economic, social, political and environmental factors, and climate change typically acts as a contributing factor rather than the sole cause.
- **Addressing climate-related migration requires coordinated efforts across sectoral areas**. Just as migration is shaped by a combination of environmental, economic, and social factors, responses would need to **bring together different areas of work** to strengthen societal resilience to climate-related stress through interventions such as climate adaptation, disaster response, social protection and livelihood support. To be effective, actions would need to reflect the full range of reasons why people move or stay — not just environmental ones.
- **Improving the availability and quality of migration data** for climate-related analyses and planning. This could include data on both international and internal migration covering stocks and flows, including returns, which are often unavailable in low-income countries. Data could also allow for analysis of migrants' sociodemographic profiles, be more timely, geographically disaggregated and accessible.

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