

Conflict and migration



▶ KEY MESSAGES

- **Currently, 26 out of the 54 African countries which are highly vulnerable to climate change are considered fragile or extremely fragile.** Out of the ten most vulnerable countries to climate change, eight are in Africa, and six are currently facing armed conflict.
- **Climate and environmental change are never the sole causes of conflict and migration.** Instead, they interact in complex and context-dependent ways. However, people living in conflict-prone settings are highly vulnerable to climate change.
- **A substantial set of studies focuses on how, when and under what conditions climate change can translate into conflict.** Some countries are more vulnerable to climate-related conflict than others if they experience ethnic fragmentation, high dependence on rainfed agriculture, low human development levels, and political and economic marginalization. Mediating factors such as governance and institutions, adaptive capacity, and existing vulnerabilities also play a significant role in shaping conflict outcomes.



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- **There is limited evidence about the viable role of adaptation and disaster risk reduction (DRR) in conflict settings.** However, there is a consensus that poorly designed adaptation and DRR interventions can compound existing inequalities and exacerbate the risk of conflicts.



There is urgent need for Africa to have long-term strategies to guide the transition towards green and climate-resilient economies. This process requires blending our adaptation options and climate change mitigation actions through the implementation of nationally determined contributions.”

H.E. President Mnangagwa of Zimbabwe
Leader's Dialogue on the Africa Covid-Climate Emergency,
April, 2021

INTRODUCTION

Globally, the link between climate change, conflict and migration is gaining academic and policy salience. For this chapter, GCA conducted a detailed literature review of the connections and pathways between climate change, conflict, and migration.

In 2007, the United Nations Security Council first established the link between climate change and security across policy arenas, recognizing it as a ‘risk multiplier’ which exacerbates existing vulnerabilities.¹ However, the evidence attesting to the causal link, and to the mechanisms through which climate change may affect conflict and/or migration, remains weak and often contradictory. Whilst research clearly indicates that climate change is not the sole cause of violent conflict or migration, a growing evidence base supports the ‘threat multiplier’ discourse. Nonetheless, deeper questions in the climate context—such as who is migrating, where, when and more importantly why—remain difficult to answer. Equally difficult questions include those concerning where tensions are likely to escalate to violent conflict, why, and under what climatic conditions.

What has been established so far is that the root causes of migration or conflict are almost never one-dimensional. In the case of violent conflict, they intersect with poverty, unemployment, marginalization, historical legacies, perceptions of injustice, environmental degradation and of course climate change. Given this largely complex and layered context, proposed humanitarian, peacebuilding, conflict resolution, disaster risk reduction, and adaptation and resilience solutions need to take into account the interdependent nature of these factors, or risk deepening existing challenges. This chapter aims to unpack the climate-conflict-migration nexus and the nuanced pathways in which they interact, to better understand the role of climate adaptation and resilience in addressing these risks, as well to identify areas for further research.

This debate is particularly relevant in the African context. Conflict and migration trends have been on the rise in Africa. State and non-state-based armed conflict have steadily increased since 2007.² Additionally, Africa is the only continent that witnessed an increase in political violence by state

and non-state actors in 2020, even as the pandemic contributed to a slight decrease of conflict in the rest of the world.³ Increasing inequalities laid bare by COVID-19 appear to have contributed to drivers of conflict, further deepening the ‘conflict trap’.⁴ Furthermore, the African population is one of the most mobile in the world. Despite COVID-related border closures and travel disruptions hampering mobility in the region, loss of labour and economic instability brought on by the pandemic still forced people to migrate, often by resorting to more dangerous routes.⁵ In parallel, negative climate impacts have been multiplying, including rising temperatures, shifting rainfall patterns, and extreme weather events, all of which can influence underlying causes of conflict and migration.

Currently, 26 out of the 54 African countries which are highly vulnerable to climate change are considered fragile or extremely fragile.⁶ Out of the ten most vulnerable countries to climate change, eight are located in Africa, and six are currently facing armed conflict. The year 2020 also marked the highest number of internal displacements recorded, the majority of which were located in north and Sub-Saharan Africa.⁷ New and repeated displacements were also recorded when conflict overlapped with extreme weather events, triggering an estimated 4.3 million new displacements in Sub-Saharan Africa alone.

While climate change is almost never the sole contributor to these phenomena, a solid understanding of the possible pathways from climate change to conflict and migration can help design focused interventions that are specific in terms of context and location. This chapter aims to elucidate the different mechanisms through which climate change interacts with conflict and migration. It does not cover an exhaustive review of the evidence; instead, it aims to highlight robust empirical findings from the most recent literature, assess as best as possible conflict and migration under different climate pathways, and evaluate the potential role of climate change adaptation and resilience building in addressing these challenges. Assessments of the experience of existing investments and programs in adaptation, conflict and migration in Africa are also excluded from this chapter.

Definitions of key terms

Some definitions of key terms used in this chapter are in order. When talking about *violent conflict* we refer to state-based (where at least one of the actors involved is the state), one-sided (usually involving terrorist groups), or non-state armed conflict. This category does not include inter-state conflict, which usually pertains to tensions regarding transboundary waters. *Migration* refers to seasonal, periodic or permanent mobility, and in this chapter, we distinguish between forced displacement as a result of the rapid onset of extreme weather events (such as floods, storms or cyclones), and migration induced in part by environmental and climate change.⁸ The former can be clearly defined in time and space and is usually temporary, whereas the latter can be considered somewhat of a choice. However, we recognize the complexity of this distinction, in line with Kälin and Schrepfer (2012), who write: “voluntary and forced movements often cannot be clearly distinguished in real life but rather constitute two poles of a continuum, with a particularly grey area in the middle, where elements of choice and coercion mingle”.⁹



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POLICY CONTEXT: CLIMATE CHANGE, CONFLICT, AND MIGRATION

In our GCA analysis, most recent reviews of the nexus point to conflicting evidence, to methodological differences between studies which make comparisons more difficult, and to a general lack of longitudinal studies which prevent the adequate sampling of climate variables. Frequently, the research literature fails to distinguish between *climate change* and *environmental change/degradation*, using the terms interchangeably. Here, climate change is considered as a compounding factor which can induce natural disasters, sea-level rise, and changes in land ecosystems which lead to resource scarcity. This includes a spectrum of weather events with a slow or rapid onset and a short or long-term duration. The distinction between ‘natural’ and ‘climate-induced’ disasters is often difficult to establish. For this reason, unless stated otherwise, such events will be considered as climate-related in this chapter’s discussion.

Several studies recognize that factors such as poor governance and fragility, ethnic fragmentation, community marginalization, the level of economic development, the presence or absence of mediating institutions and others take precedence over climate change as key drivers of conflict. That is to say, research shows that climate change is almost never the sole cause of conflict.¹⁰ The IPCC’s latest report, for example, stated with low confidence—due to weak evidence and scientific agreement that climate change and its interaction with land degradation could be a source of conflict in the coming decades.¹¹ Similarly, through expert elicitation, a study on climate change and armed conflict highlighted that climate variability and/or change was one of the less influential factors affecting conflict risk, and experts were uncertain about their influence.¹² Additionally, reviews of existing studies highlight that it was impossible to distinguish between the effects of climate variables and socioeconomic and political factors on conflict.¹³

In parallel, there is significant evidence that populations have been migrating for centuries as a coping mechanism in the face of natural resource scarcity.¹⁴ There are currently three main frames linking environmental and climate change to migration.¹⁵ The first type frames environmental and climate-related migration as irregular, posing threats to security in areas of destination, and reinforcing narratives of national border controls. The second frame adopts a more empathetic approach, viewing migration in the context of environmental and climate change as closely associated with the mobility of vulnerable populations who have a right to work and basic services. The third frame views mobility as a form of adaptation to climate-related impacts and risks, including migration, displacement, and planned relocation.¹⁶ Currently migration can be seasonal, periodic or permanent, and can be considered as a successful adaptation strategy when managed carefully. This however will depend largely on the migrants themselves, as well as their community of origin and destination. ‘Adaptive’ migration differs from traditional nomadic migration. The latter kind usually occurs along well-established corridors, which are approved by local communities. With the rise in resource scarcity and irregular rainfall patterns—some of this attributable to the impacts of climate change—nomadic communities are often forced to resort to other routes, which is increasing communal tensions and conflict.¹⁷

Against this backdrop, the African Union (AU) has been employing an innovative discourse on climate security risks. Climate change is increasingly becoming a prime policy issue for the AU, which is recognizing the imperative need to collectively address its impacts on socioeconomic development, peace, security and stability. In March 2021, the AU’s Peace and Security Council organized the “Sustainable Peace in Africa: Climate Change and its Effects on Peace and Security in the Continent” discussion.¹⁸ It placed particular emphasis on the importance of comprehensively assessing the climate, peace, and security nexus, but also the need to link early warning systems with violent conflict prevention. The Peace and Security Council also reiterated the importance of existing frameworks such as the Johannesburg Declaration on Silencing the Guns in Africa, which recognizes the

intersections of climate change and violence through its ‘Silencing the Climate Crisis’ component.¹⁹ Another relevant framework is the Bamako Declaration on Access to Natural Resources and Conflicts between Communities, which stresses the need to better govern and manage natural resources in a way that minimizes local conflict and communal violence.²⁰ Of equal significance is the AU’s Kampala Convention for the Protection and Assistance of Internally Displaced Persons—a legally binding instrument which has been adopted by 40 member states and, as of February 2020, ratified by 29 of them.²¹ Additionally, the AU Commission, along with the International Organization for Migration (IOM), launched their first report on African in October 2020, with a chapter dedicated to environmental degradation, climate change and human mobility, reiterating the importance of this issue.²² Despite the commitment of African countries to tackle the climate-conflict-migration nexus, actual policy implementation remains limited, and more targeted and effective evidence-based decision-making is warranted to address mounting challenges.



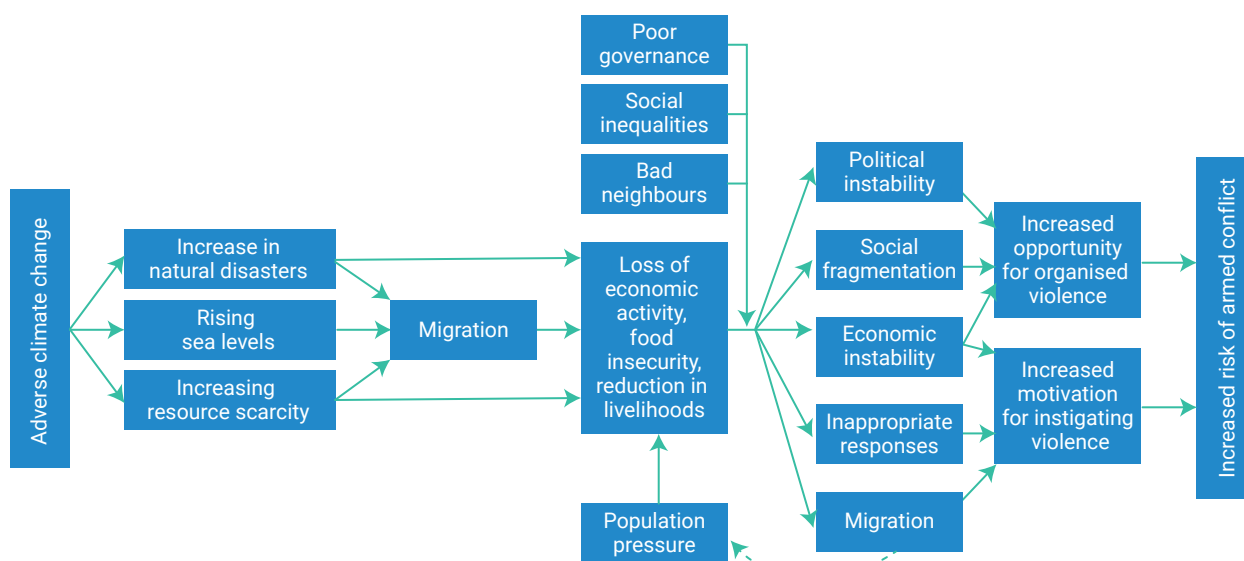
PATHWAYS FROM CLIMATE CHANGE TO CONFLICT

Climate change is an increasing challenge in Africa. In 2020, the continent was plagued with the triple threat of the COVID-19 crisis, escalating conflict, and climate change. Terms such as ‘climate wars’ started gaining traction in countries like Sudan.²³ Similarly, stark predictions became more prevalent in climate policy narratives, estimating that with each 1°C rise in local temperature, the risk of intergroup conflict increases by more than 10 percent.²⁴ However, the reality is more complex and fragmented. Conflicts emerge spontaneously from human interactions²⁵; but they are a result of a myriad of context-specific and interconnected factors that climate change may or may not exacerbate. In this section, we analyze the pathways connecting climate change and conflict, the role of contextual factors, and the state of the evidence pertaining to this causal link.

Our GCA analysis shows that beyond the streams of research which focus on whether climate change can be a contributing factor to violent outcomes, a substantial literature focuses on how, when and under what conditions climate change can

translate into conflict. Throughout these pathways, climate change is hypothesized to exacerbate conflicts through resource scarcity, sea-level rise and increased natural disasters. These can have impacts on livelihoods, food security and migration, and, mediated by external factors such as poor governance, inequalities, and existing competition for resources, they can exacerbate more traditional drivers of conflict. In Africa, the West African Sahel and the Horn of Africa are considered hotspots where these phenomena closely intertwine. Conflicts between herders and farmers are increasingly on the rise as grazing land and natural resources are becoming more precarious.²⁶ In the Lake Chad Basin, seasonal migrations of pastoralists are leading to a rise in tensions with sedentary farmers as instability and resource scarcity are becoming more pervasive. Loss of livelihoods, coupled with poor governance and military state interventions, gave rise to opportunities for the recruitment of individuals by terrorist groups such as Boko Haram, increasing conflict and instability in the region. However, these events are not linked in a linear fashion, and instead interact in a multifaceted and highly complex way. Figure 1 highlights these major causal pathways.²⁷

Figure 1: Causal pathways from climate change to risk of conflict



Source: adapted from Friedrichs, 2014

Studies across the literature have attempted to support this causal pathway with empirical evidence. Although they differ significantly in terms of defining conflict and climate variables, methodological framing, and time and scale of observation, key findings and their implications for programs on conflict and climate change are worth mentioning. In a mixed-methods study, Ide et al. (2020) identify four factors which make countries particularly vulnerable to this nexus: (i) large populations, (ii) political exclusion of some ethnic groups, (iii) a low level of human development and (iv) a high level of dependence on rainfed agriculture.²⁸ The authors evaluate climate-related disasters with respect to the risk of armed conflict, and highlight that in such vulnerable countries, almost one-third of conflicts have been preceded by a disaster within seven days, over the period 1980–2016. Evidence from eight case studies in which armed conflict escalated within this 7-day window points to improved opportunities for armed groups as the main mechanism connecting disasters and conflict. For example, the 2009 drought in Mali presented an opportunity for Al Qaeda militants based mainly in southern Algeria to recruit fighters and extend their operations into Mali. The authors utilized an evidence coincidence analysis to draw such conclusions. However, when applied at the global level, no conclusive results were reached. There is therefore a variable relation between conflict and disasters which is highly context dependent.

In a similar assessment, a comprehensive report examining the link between climate change and conflict in the Lake Chad Basin concluded the following: “climate change and conflict dynamics interact in a vicious circle, where climate change impacts feed additional pressures and tensions while conflict undermines communities’ abilities to cope and adapt”.²⁹ Climate change in the basin interacts with key drivers of conflict, namely livelihood insecurity, weak governance, poverty and underdevelopment, and migration. In this context, the main mechanisms linking climate and conflict were the following: (i) reduced livelihood security, (ii) increased competition for resources, mainly between farmers and herders, (iii) increased opportunity for recruitment by non-state armed groups and (iv) heavy-handed military responses. The latter includes military operations such as “Exercise Cat Race” and “Operation Whirl Stroke”



launched by regional governments to address the crisis. These interventions, instead of addressing the root causes of the problems, led to further livelihood deterioration.³⁰ This reduced the adaptive capacity of the population to climate change and further exacerbated the situation. These interactions, often referred to as the ‘conflict trap’, highlight the dynamics between drivers of conflict and consequent decreased adaptive capacity in a positive feedback loop. This is particularly relevant in fragile contexts, where states usually have weak capacity to manage existing challenges. Communities are thus left in a poorer condition after the experience of such a cycle and are usually less resilient and less equipped to cope with the impacts of climate change.³¹

There is increasing evidence that poorly designed climate adaptation and mitigation measures have the potential to further deepen existing conflict.³² Indeed, solutions which do not embed a conflict-sensitive lens can have unintended consequences by creating more inequalities and tensions among societies, which could escalate into conflict. Maladaptive interventions have the potential to marginalize particular segments of society, exclude them from essential decision-making, create unfair power structures, or engender job losses and potential land grabs. Thus, conflict sensitivity is an essential lens to be considered when designing climate adaptation interventions, particularly in countries which are more susceptible to the climate-conflict nexus.

A new stream of research examines the interlinkages between climate, conflict and energy. Energy systems can play a contributory role in increasing the risk of conflict, and this role will likely be more prominent in the context of increasing climate change. Disruption of energy flows at the local, national, regional and global scale can increase the risk of conflict.³³ Beyond the geopolitical aspect of energy-conflict risks, energy systems are also the target of sabotage or attacks, particularly by non-state armed groups. Additionally, there is a close link between energy and food security. Restricted energy access and increased energy prices can have significant impacts on overall food security, contributing to drivers of conflict. More empirical evidence is required to examine this nexus, particularly in the African continent, and to understand the specific mechanisms of interaction. This can be achieved by simultaneously tracking conflict, climate and energy databases, and creating models which take into consideration the complex feedback mechanisms between them.

Some caveats are in order, both about the scope of interpretation of the available evidence about climate change, conflict and migration, and about the assumptions underlying such interpretation. So far, the growing policy and academic attention on the climate-migration-conflict nexus has not been matched by a more solid understanding of the linkages between these phenomena. Simplistic assumptions about this nexus have the potential to securitize climate discourses without substantial evidence and could lead to the design of maladaptive solutions which do not address causal roots of these events. Current research on climate change and violent conflict has often faced the “streetlight effect”: a sampling bias whereby studies focus primarily on accessible areas where conflict data is readily available, without sampling on independent climate variables.³⁴ This trend tends to overemphasize the actual link between these two phenomena, and significantly contributes to the securitization of the climate change discourse, particularly in Africa.

Similarly, the majority of the climate and mobility reports tends to also focus on case studies in the Global South with a particular focus on Africa and the Middle East, with the exception of the United States of America.³⁵ This ‘uneven’ geography of research cannot be solely attributed to the higher vulnerability of communities in the Global South to climate change. Rather, it falls within a wider discourse which presents climate migration as a security threat to the Global North.³⁶


The role of climate change in multiplying risks of conflict and migration should not be undermined. However, stigmatizing the African continent as more ‘naturally violent’ or stating that mass migration is likely to occur as a direct result of climate change in certain locations only risks reinforcing policies and funding which undermine climate adaptation and sustainable development. The next section will attempt to highlight scientific and evidence-based information to better inform policies regarding the climate-conflict-migration nexus.

Box 1: The Sahel and the Horn of Africa




Despite the persistent dissonance on the topic, existing mechanisms under which climate change might lead to violent conflict need to be explored. The Sahel and the Horn of Africa are two particular regions of focus when it comes to the climate-conflict nexus literature. Most of the literature has focused on tensions between farmers and pastoralists over access to land and water, which have then escalated into violence. Through its projects, USAID identified different mechanisms under which climate change can escalate drivers of conflict, each playing out differently in each country and context.³⁷ The pathways are summarized in Figure 2.

Figure 2: Causal pathways from climate change to conflict risks in the Sahel and the Horn of Africa



Reduced livelihood security

The impacts of climate change, including rising temperatures, persistent droughts, unpredictable rainfall patterns, and disasters such as floods, cyclones and cyclones impact communities' livelihoods and food security through loss of income.




Competition over scarce resources

Water and land scarcity exacerbated by the effects of climate change, particularly in countries rooted in ethnic divisions, can lead to tensions. In fragile settings, these tensions can escalate into violence and conflict.



Increased patterns of marginalization and exclusion

Resource competition is often reinforced in countries where poor governance prevails, or where political elites can exploit local struggles while excluding marginalized groups from the decision-making process.



Increased migratory movements

Migration is one possible adaptation strategy in the face of resource scarcity and livelihood insecurity. However, when not managed carefully: (i) migratory movements across borders to neighboring regions or within a country's borders towards neighboring communities can escalate tensions among different ethnic groups, particularly when natural resources are scarce (ii) migration to urban areas could put additional strain on governments to deliver basic services, secure decent housing and job opportunities.



Rise in terrorism and non-state armed groups

High rates of unemployment, a rise in poverty and inequality and the marginalization of communities, particularly in fragile countries, can be conducive to the rise in terrorist and non-state armed groups. Similarly, in areas where violent extremist groups are already present, such as in northeast Nigeria, the recruitment of unemployed youth becomes more prevalent, generating instability and insecurity in the region. This also includes recruitment for organizations involved in organized crime, trafficking and sex work.



Photo: Flickr

PATHWAYS OF MIGRATION AND CONFLICT

Evidence on the links between climate change, migration, and conflict is also contested and inconclusive, as this GCA analysis shows. The causal link between resource scarcity and mobility, as well as out-migration and the subsequent emergence of conflict in the area of destination, is difficult to establish.³⁸ This is mainly because migration is driven by multiple factors, and the ways in which migrants might contribute to conflict is not well understood. The possibility and ways in which migration and conflict interact are highly context dependent. Freeman (2017) identifies five pathways linking climate and environmental change, migration and conflict.³⁹

In 2021, IDMC’s Global Report on Internal Displacement reported that conflict and disasters triggered 40.5 million new internal displacements in 2020 across 149 countries.⁴⁰ Most newly recorded displacements occurred in Sub-Saharan Africa, 6.8 million of which were triggered by conflict. In total, 21.8 million people across the region were living in internal displacement, mostly as a result of emerging new armed groups.

For example, the violence committed by Boko Haram in Nigeria and the subsequent military response triggered the displacement of 86,000

people in Adamawa and Borno. While the government attempted to redress this with a policy of relocation, persistent threats have jeopardized the process, exacerbating the insecurity in the region. Furthermore, 14 percent of new internal displacements were recorded only in Burkina Faso, Mali and Niger, in the Liptako Gourma region. Prolonged periods of drought and resource scarcity have escalated existing grievances between herders and farmers, which gave extremist groups the opportunity to establish a foothold in the three countries, expand their influence, and cause further displacement.

Countries where conflict and instability reign are also conducive to more displacement when conflict overlaps with natural disasters or environmental degradation. In 2020 floods in Sub-Saharan Africa helped fuel one of the worst locust outbreaks across the continent, which triggered the displacement of thousands of farmers in Somalia and exacerbated food insecurity in already fragile countries. Deliberate attacks on civilians restricting their livelihoods or limiting their access to natural resources is also prevalent in such contexts. This was the case in Nigeria in 2018, where communal clashes between farmers and herders resulted in the displacement of over 300,000 people, as attackers burned villages and stole food supplies.⁴¹

Table 1: Pathways connecting climate change migration and conflict

Scenario 1: Abundance
Environmental change ► migration ► conflict
Scenario 2: Scarcity
Environmental change ► constrained migration ► conflict
Scenario 3: Conflict-induced migration
Conflict ► migration ► environmental degradation ► conflict
Scenario 4: Environmental degradation as a method of conflict
Conflict ► environmental degradation ► constrained migration
Scenario 5: Independently occurring climate change and migration lead to conflict
Climate change + migration ► conflict

Source: Freeman (2017)



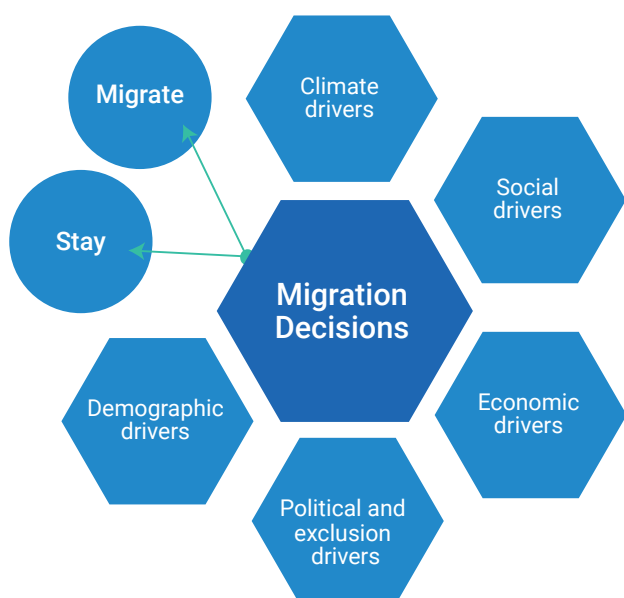
Photo: mbrand89/Shutterstock

PATHWAYS FROM CLIMATE CHANGE TO MIGRATION

The African population is one of the most mobile in the world. While the received narrative describes African migration as being largely Eurocentric, there is substantial evidence that African migrants cross land borders instead of crossing oceans.⁴² Indeed, around 80 percent of Africans who contemplate migration actually have no interest in leaving the continent.⁴³ Moreover, and contrary to common beliefs, 94 percent of African migration across oceans takes a regular form. Thus, when talking about migration in the African context, we focus mostly on intra-African migration. Current trends indicate that Africans will continue to migrate at an increasingly high rate in search for opportunities and safety, as threats are becoming more pervasive across the continent.⁴⁴

Every year, environmental stress shapes the mobility of millions of individuals globally, in anticipation of or in response to related events.⁴⁵ Rapid-onset events such as floods, cyclones, and storms often displace people temporarily or permanently. On the other hand, the slow onset of climate impacts affects human health and livelihoods by compounding stress on freshwater resources and coastal erosion, contributing to water and food insecurity, and potentially influencing the decision of individuals to move in search of better living conditions. These types of movements are either seasonal, or permanent in the form of planned relocation. As climate impacts will become more severe, more and more people are expected to move in new and diverse ways.^{46,47}

Figure 3: Conceptual framework detailing drivers of migration



Source: adapted from Black et al. (2011)

Migration is usually shaped by factors such as timing, duration, direction, distance, and degree of voluntariness.⁴⁸ It can include seasonal, rural-to-urban, or cross-border migration from one low-income country to another, or from low-income to high-income countries, and to a lesser extent, across oceans.⁴⁹ Mobility responses to the same climate-related event, whether a slow or fast-onset one, can be very different. Household characteristics and social relations preceding an event, as well as post-disaster responses, also deeply influence whether or not people move. All of these dimensions, rather than being clear-cut alternatives, can be characterized as continuums.⁵⁰

Despite the recognition of climate change as an important risk multiplier, causal attribution cannot be established.

Migration remains a highly complex phenomenon where social, demographic, cultural, political, economic and environmental factors closely intertwine to shape migrants' decisions. Even when climate change does play a role, it is the latter factors which eventually enable or restrict people's ability to cope where they are or result in their decision to move.⁵¹ These 'push and pull factors' interact and accumulate until they reach a 'tipping point' which makes individuals or households decide to move. In contrast, people who are unable to make this decision, usually the most vulnerable, are sometimes considered 'trapped'.⁵² Figure 3 details the complex drivers influencing individuals and or households' decisions to migrate.⁵³ The impacts of climate and environmental change on human mobility depend, therefore, on a complex combination of exposure to risk, and pre-existing vulnerabilities.



Partnerships are at the heart of our adaptation plan, at the heart of effective adaptation action. We need partnerships to bring together climate science, policy, and finance.”

Werner Hoyer, President, European Investment Bank

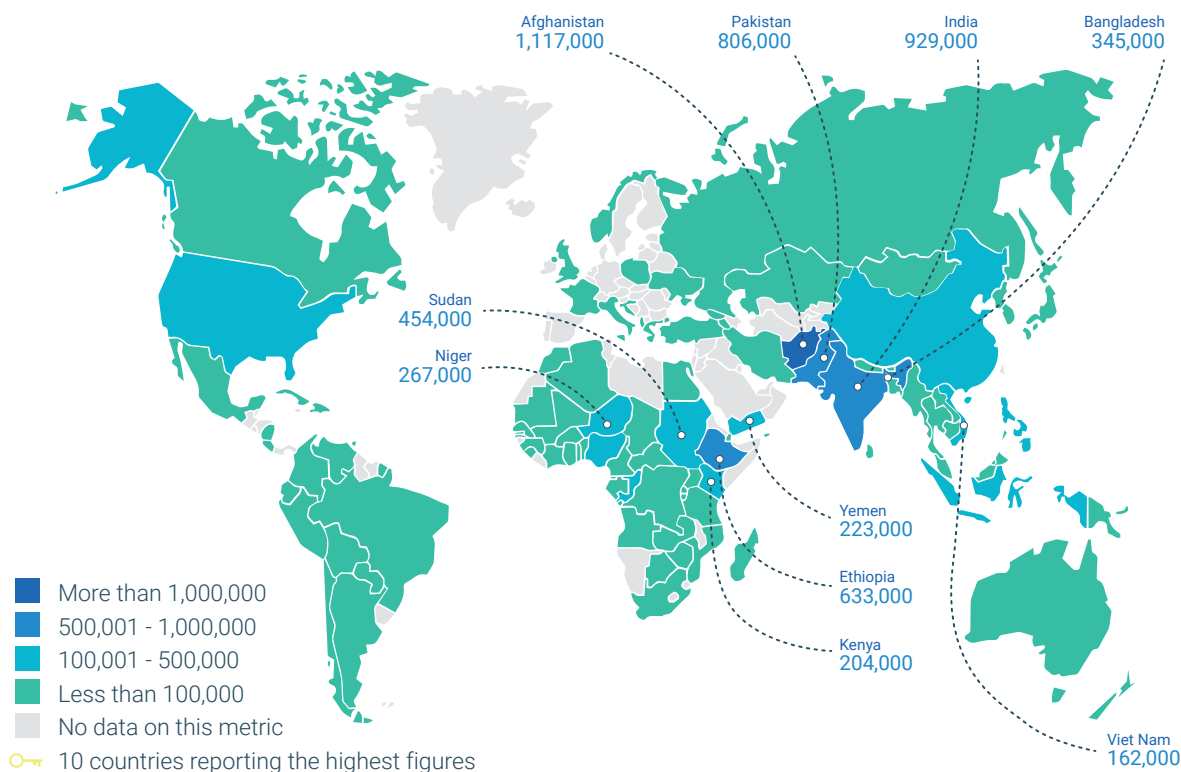
High-Level Dialogue “An adaptation acceleration imperative for COP26”, September, 2021

In January 2020, the United Nations High Commissioner for Refugees (UNHCR) recognized for the first time that States shall refrain from sending back people to their countries of origin, if they are fleeing situations where the impacts of climate change pose a risk to their life, or are incompatible with the right to life with dignity.⁵⁴ This landmark decision offers international protection for individuals displaced in the context of climate change and natural disasters, despite its application in situations where “risks are imminent”. When it comes to forced displacement, the link between rapid-onset extreme weather events and mobility is more evident. However, migration is also shaped by the lack of preparatory measures such as early warning systems, building codes, and cyclone shelters.⁵⁵

There is robust evidence that disasters are displacing people worldwide, but there is limited evidence on whether or not these are caused by climate.⁵⁶ In 2020, disasters have contributed to massive

displacements in Sudan, which has witnessed its most severe flood in 60 years, displacing over 500,000 people and destroying over 5.5 million acres of farmland.⁵⁷ In Mozambique, irregular migration is becoming more prevalent as increased flooding and devastating cyclones are pushing thousands of families into displacement after losing their homes and livelihoods.⁵⁸ In 2021, IDMC’s Global Report on Internal Displacement reported that conflict and disasters triggered 40.5 million new internal displacements in 2020 across 149 countries.⁵⁹ Most newly recorded displacements occurred in Sub-Saharan Africa, where 4.3 million were triggered by disasters, accounting for 14 percent of the world’s internally displaced population (IDP). Floods but also cyclones and droughts were particularly intense and prolonged in South Sudan, Burkina Faso, Cameroon, Mali, Nigeria and DRC in 2020. By the end of the year, more than 2.3 million people were living in internal displacement. Figure 4 highlights the number of IDPs as of the end of 2020.

Figure 4: Total number of IDPs by disasters as of 31 December 2020



Source: IDMC, Global Report on Internal Displacement 2021

Note: An additional 742,000 people were internally displaced in other countries across the African continent, with a total record of 2.3 million IDPs recorded in Africa by the end of 2020

On the other hand, mobility linked to the slow onset of environmental and climate change is a complex phenomenon. Slow-onset factors have the ability to impact people's livelihoods, particularly those of agricultural, pastoral and fishing communities susceptible to droughts and coastal erosion. In this context migration can serve as one form of adaptation strategy to sustain livelihoods. However, it is typically not the first response that households or individuals resort to when confronted with environmental stress. Instead, individuals typically focus primarily on alternative approaches to secure immediate assistance, such as selling livestock or seeking government and community support. Further, slow-onset factors often result in the migration of one member of the household, typically younger males, particularly for rural-urban migration or long-distance migration.⁶⁰ Key factors such as access to money and social networks in the country of destination are influential in shaping decisions.⁶¹ Even in the case of forced displacement, IDPs tend to travel along familiar and pre-existing paths to destinations where they have a social network, generally within their own country.

Studies have shown that it is impossible to isolate climate variables from key drivers of migration.⁶² Decisions to migrate depend on the cost or opportunity perceived by the migrants themselves and can rarely be linked solely to climatic factors. Further, slow-onset climate hazards are usually unevenly distributed across local, national and regional levels. Impacts are therefore perceived differently, making universal comparisons very complicated.⁶³ This notion of perception is essential in quantifying environmental stressors.⁶⁴ This is mostly because most of the data collected relies on surveys and ethnographies where participants could be subject to recall biases.⁶⁵ More importantly, such perceptions of environmental change do not always correspond to scientifically measured changes in weather patterns.⁶⁶

Instead, these are often shaped by cultural and social factors, which again take precedence over actual environmental change in motivating migration decisions. Here again climate variables should be measured scientifically using robust indicators over appropriate periods of time, which is not consistently carried out in the climate migration literature.⁶⁷ Overall, databases regarding migration are inadequate and incomplete, lagging in their scope, quality and reliability.⁶⁸ While individual country surveys could help fill these gaps, this approach is not cost-efficient and in the absence of standardized definitions and criteria for climate-related migration, this process itself can be inefficient. This gap is primarily an impediment to humanitarian aid in the case of forced migration. But it also has implications for climate and conflict studies and will need to be further systematized to accurately portray the actual scale and dynamics of this issue.



Photo: Sun_Shine/Shutterstock

Migration projections under different emission pathways

The African continent is a vulnerability hotspot for climate impacts, as they threaten food and water security as well as socioeconomic development.⁶⁹ Key risks include decreased rainfall and water availability, subsequent loss of crop productivity, rising temperatures and sea-levels and extreme weather events such as floods, cyclones and storms. Climate models have attempted to quantify these impacts over time and to project implications for climate-related conflict and migration. Although the evidence is patchy and varied, the following trends as a result of increased climate change could have consequences on conflict and mobility. Due to the complexity and lack of robust assessment for climate-related conflict trends, projections of conflict risks will not be included in this section.

Rising sea levels, coastal degradation, and migration

In 2019, the African continent experienced an above average sea-level rise (SLR), reaching 5 mm per year in several oceanic areas surrounding it, and even exceeding this level around the south-western Indian Ocean from Madagascar towards Mauritius.⁷⁰ Adding to that, the population in Africa inhabiting low-level coastal zones is rising at an annual rate of 3.3 percent per year, more than double the global average. By 2050, between 72 to 94 million people are expected to inhabit several of West Africa's low-lying urban centres. The African population is therefore at high risk from future SLR. Although the impacts of climate-related SLR are well known, studies focusing on Africa are limited due to a lack of longitudinal and systemic observations and climate modelling. Evidence is limited to the West African coast, yet current models do not allow for projections with high confidence. These impacts are further discussed in the chapter on Present and Projected Climate Risks.

In the context of migration, there is robust evidence that SLR will impact the size and direction of migration flows.⁷¹ However, there is limited evidence to support the theory that climate related SLR will be the main driver of migration, with more evidence supporting the idea that households subjected to SLR will only migrate if it is their only option. Social, economic, demographic and policy incentives encouraging, or obstructing migration will play a bigger role. Predicting actual numbers of migrants is quite difficult, mainly because of the uncertainty of models.⁷² However, West Africa appears to be significantly vulnerable to SLR impacts. Other vulnerable areas include the Nile Delta, the Alexandria coast, and Eastern Africa, in Tanzania, Somalia and Mozambique, where regional development is planned through strong coastal growth.⁷³ More studies are required to build robust models which would enable a granular understanding of migration patterns, as a result of SLR.



In the case of conflict, warming temperatures, ocean acidification and coastal degradation will have significant impacts on fisheries. Here again, West African countries stand to suffer the most from such effects, with forecasts estimating a 30 percent decrease or more in the Maximum Catch Potential (MCP) by 2050, and 40 percent by 2100.

This includes the Democratic Republic of Congo, Côte d'Ivoire, Equatorial Guinea, Gabon, Liberia, and São Tomé and Príncipe.⁷⁴ This decrease would significantly impact fishermen's livelihoods and could force them to cross borders to fish, triggering risks of violent conflict with the coastguards of neighbouring countries.⁷⁵ Loss of livelihoods could eventually push fishermen to migrate in search of means of survival.

Box 2: Migration projections under different scenarios for East Africa⁷⁶



In a recent study, the World Bank adopted a population gravity model to project mobility under different climate scenarios, with a specific focus on East Africa. It estimated changes in population distribution by the year 2050 as a result of climate and development trends across three climate scenarios: a pessimistic RCP 8.5 scenario; another RCP 8.5 scenario with more inclusive development; and an RCP 2.6 scenario. (RCPs refer to "Representative Concentration Pathways", or different projections of future GHG emissions and atmospheric concentrations of greenhouse gases.) The model correlates special patterns with population change while inputting geographic, socioeconomic, and demographic characteristics of the landscape and existing population distribution. It accounts for climate impacts through four models with indices on water and crop productivity. Outputs were averaged to have a mean result.

According to the model, under the pessimistic RCP 8.5 scenario, the region could witness 10.1 million internal refugees by 2050.

Under RCP 2.6, East Africa could record 6.9 million 'climate migrants'. Areas such as the Lake Victoria Basin, the eastern highlands of Ethiopia, and the area around Lilongwe would be in-migration hotspots. Major out-migration hotspots include the coastal zone in Kenya and Tanzania, western Uganda, and parts of the northern highlands of Ethiopia. As rainfall variability increases, population decline is likely to occur in rainfed croplands as a result of out-migration. In-migration is likely to be recorded in pastoral and rangeland areas, in all scenarios. Finally, population growth in both RCP 8.5 scenarios is considered to inhibit development progress.

While this study constitutes a robust model with important insights for the future, it still contains a lot of uncertainties. Particularly, these projections are based only on populations at risk, rather than the population who might take the decision to migrate. The model also fails to account for the adaptive capacity of individuals, or their degree of agency. In Table 2, results for other regions in the continent are presented, excluding North Africa.

Figure 5: Areas projected to have high in-migration as of 2010 and 2050 in East Africa

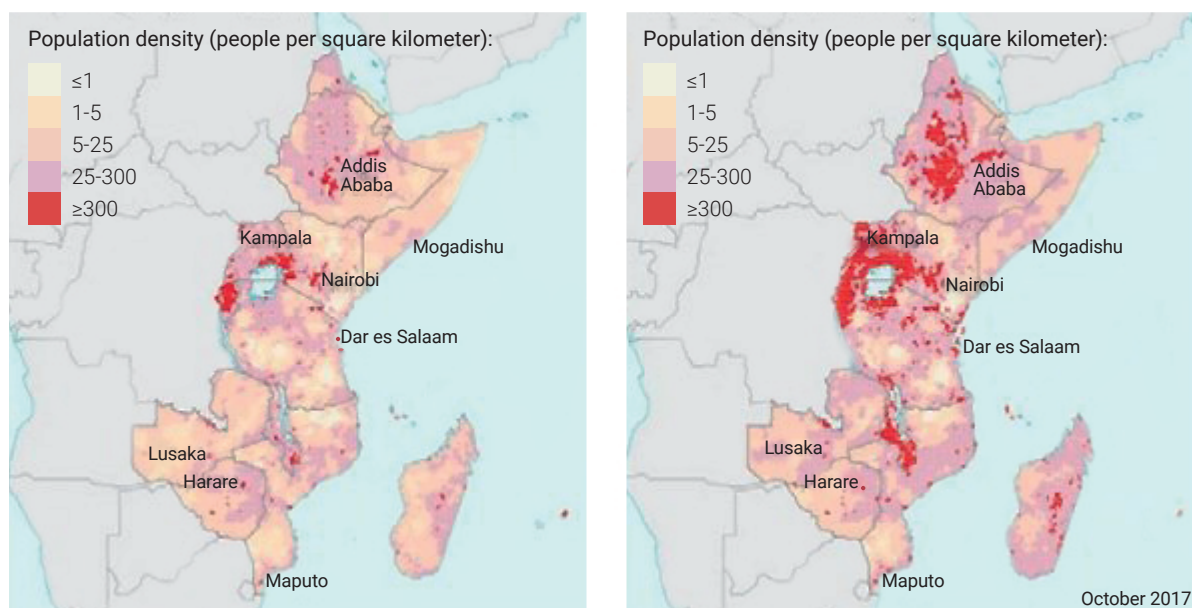


Table 2: Projected share of internal climate migrants in Sub-Saharan Africa

Region	Scenario					
	Pessimistic reference		More inclusive development		More climate-friendly	
East Africa						
Average number of internal climate migrants by 2050 (million)	10.1		9.2		6.9	
<i>minimum (left) and maximum (right)</i>	8.1	12.1	7.2	11.2	4.3	9.3
Internal climate migrants as percentage of population	1.28%		1.37%		0.87%	
<i>minimum (left) and maximum (right)</i>	1.03%	1.54%	1.06%	1.66%	0.56%	1.19%
West Africa						
Average number of internal climate migrants by 2050 (million)	54.4		38.5		17.9	
<i>minimum (left) and maximum (right)</i>	44.8	64	32	45	11.1	24.8
Internal climate migrants as percentage of population	6.87%		5.67%		2.27%	
<i>Minimum (left) and Maximum (right)</i>	5.67%	8.08%	4.71%	6.63%	1.4%	3.13%
Central Africa						
Average number of internal climate migrants by 2050 (million)	5.1		4.3		2.6	
<i>minimum (left) and maximum (right)</i>	3.1	7.1	2.9	5.7	1.7	3.5
Internal climate migrants as percentage of population	1.31%		1.31%		0.66%	
<i>minimum (left) and maximum (right)</i>	0.8%	1.81%	0.83%	1.65%	0.43%	0.89%
Southern Africa						
Average number of internal climate migrants by 2050 (million)	1.5		1.6		0.9	
<i>minimum (left) and maximum (right)</i>	0.6	2.5	0.07	2.5	0.1	1.6
Internal climate migrants as percentage of population	2.31%		1.98%		1.4%	
<i>minimum (left) and maximum (right)</i>	0.85%	3.77%	0.09%	3.86%	0.85%	3.77%

Source: World Bank (2018)

Migration as a potential adaptation strategy

With the lack of strong empirical evidence linking climate change and migration, scholars have opted to focus on a narrative that sees migration as one option for a successful adaptation strategy when planned carefully.⁷⁷ This is particularly relevant when such migration is planned and facilitated to reduce vulnerabilities and improve livelihoods and mediated by holistic and inclusive development and adaptation plans. Benefits of migration include better social, economic and even environmental prospects (in the context of disaster recovery for example).⁷⁸ Pre-existing socioeconomic status plays an important role in shaping the success of this strategy. Migrants

with a lower socioeconomic status face greater challenges in finding employment and dignified and secure living conditions. They are often left in poverty as remittances constitute the majority of their income.⁷⁹ Migration flows from rural to urban areas can also add significant pressures on already stressed cities, exacerbating urban challenges and social cohesion, and pushing some migrants further into poverty as they struggle to gain access to basic services. In this context, robust and holistic migration policies which intersect with development and adaptation agendas can serve as a basis to plan for and regulate the increasing mobility which climate change will induce.



POLICY RECOMMENDATIONS

Our GCA analysis of the connections between climate change, conflict, and migration shows that there are important opportunities to tackle these challenges in a coordinated manner through investments, governance and institutional capacity building, and national and regional plans.

Investments

1. Promote holistic and multi-sectoral investments in adaptation and resilience, which integrate climate hazards and pre-existing vulnerabilities.
2. Invest in robust databases with more consistent monitoring of climate variables, as well as migration and conflict triggers and trends.
3. Invest in key areas of research such as localized and context-specific research on the climate-conflict-migration nexus, particularly in vulnerable areas, and empirical evidence on the viability of adaptation and DRR and preparedness in conflict settings.
4. Invest in early warning systems, preparedness, and management systems for climate change, conflict, and migration.

Governance and institutional capacity

1. Build the capacity of institutions to create an enabling environment for peace and sustainability while promoting inclusive and participatory governance, with a specific lens towards climate change.
2. Promote solutions which foster social dialogue and cohesion by recognizing existing social, political and economic inequalities in communities, building resilience for the impacts of climate change.
3. Build the capacity of national statistical systems to collect better quality data on climate-related conflict and migration to allow combined analysis and design of policies and programs linked to climate change adaptation.

National and regional plans

1. Conducting localized climate-conflict assessments and including them in countries' NDCs and NAPs as well as regional cooperation agreements.
2. Planned migration can be a successful adaptation strategy, especially when it aims to alleviate poverty and reduce vulnerability to climate change. Migration needs to be embedded into regional, national and local development planning, as well as NAPs and NDCs.
3. Development frameworks will need to consider the different phases of migration and provide assistance accordingly. The World Bank identifies three key phases⁸⁰ (i) Before migration: provide local adaptation when possible in the form of social protection programs and climate-smart infrastructure, so that people 'adapt in place'; (ii) During migration: facilitate mobility, particularly when people are forced to move as a result of extreme events, by providing safe movement towards lower-risk areas, or as a last resort, planned relocation; (iii) After migration: ensure that migrants and their people are well-connected, particularly in terms of remittance transfers, by establishing direct connections and easy-to-use methods of transfers.



If we are really serious about climate adaptation, we have to partner with the local communities (...) Until and unless bold action gets grounded in local communities, we will not be successful.”

Jagan Chapagain, Secretary-General, International Federation of Red Cross and Red Crescent Societies

High-Level Dialogue “An adaptation acceleration imperative for COP26”, September, 2021