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POLICY BRIEF

Migration: a critical climate change resilience strategy

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Movement is a critical resilience strategy for communities and individuals faced with climate change. Most discussions about climate-linked migration focus on international movements; however, it is an overwhelmingly local phenomenon. Migration is an important adaptation strategy that should be enabled. African cities, countries and regions need to incorporate climate-linked migration into all aspects of their planning.

Key findings

- Climate change is an increasingly important migration driver in Africa. In both slow- and sudden-onset hazards, it drives far more movement within a country than it does internationally.
- At the end of 2019, 2 million people had been displaced across sub-Saharan Africa as a result of climate-linked disasters.
- Migration is a critical resilience strategy for individuals and communities in regions facing climate threats. Families and communities that rely on vulnerable livelihoods can use migration to diversify income and spread risk.
- The most vulnerable people seldom have the resources to migrate in response to climate change impacts, with potentially dire consequences.
- Communities that have contributed the least to climate change face the harshest consequences. In some cases, this means losing their homes and livelihoods.
- Migration is a highly personal decision based on a range of complex and often overlapping reasons involving economic, environmental, social and political factors. This makes it difficult to isolate climate drivers and accurately forecast how many people will move owing to climate change. Future migration patterns are also highly dependent on responses.
- Many African cities are vulnerable to climate change effects because they are low-lying, coastal or susceptible to water variability. Out-migration is likely from these cities towards more resilient cities.
- Voluntary or planned migration is a much better option for all involved than forced displacement.

Recommendations

- International frameworks often do not reflect African realities. African policymakers cannot rely on these to guide such a local issue. African migration must be addressed via local, national, regional and continental governance.
- National agencies need to incorporate climate migration in their health, education, housing, disaster management, urbanisation, environment and development planning.
- Policymakers should not wait for more evidence to plan for migration as an adaptation measure. Climate-vulnerable regions should prepare for out-migration, while cities in more resilient locations should plan for in-migration.
- OECD countries that view climate-linked migration as a threat should recognise that climate change hazards are directly linked to poverty dynamics. They should invest in building resilient societies through job training, infrastructure, housing, health and education to improve the possibility of adapting in place.
- Countries and regions should standardise and collect climate information in their migration data.
- Climate change information should be communicated in language-appropriate methods to enable community-led resilience strategies.

Introduction

Migration and climate change are among the most important issues of our time, yet we have been slow to recognise how the two phenomena are linked.[1] This is changing. Climate migrants are becoming increasingly visible in both climate and migration debates.

Early debates focused mostly on a minimalist vs maximalist dichotomy on the extent to which environmental stressors cause migration.[2] More recently, efforts to compel urgent action to mitigate the climate crisis have included alarmist warnings that it will drive an unprecedented number of migrants from the Global South to the Global North. Many sensationalised numbers have been tabled – as high as 1 billion climate migrants by 2050.[3]

African climate-linked migration, like most migration topics, tends to be dominated by European narratives. The issue is often framed as 'waves' of African climate refugees overwhelming Europe.[4] In reality, the vast majority of climate-linked migrants move within their own countries and regions.[5]

Migration is a critical resilience strategy against climate change impacts. While much of the common narrative suggests that migration results from a failure to adapt to climate change, it is in fact an adaptation strategy in and of itself.[6]

Migration offers options for individuals, families and communities facing climate threats, relieving pressure on limited resources. People who rely on climate-vulnerable livelihoods, such as agriculture or fishing, can use migration to diversify their income and spread household risk. Families are unlikely to want to abandon their home or land after a season of poor crops. Instead, they might send some members to seek a supplementary income, who then return once conditions improve.[7] This strategy allows households to remain in place and keep their homes and livelihoods.

Financial and social remittances from family members can help enable preventative measures against climate impacts, such as buying drought-resistant seed or installing irrigation systems.[8] In many situations, migration can lead to autonomy and new skills for migrants – a growing proportion of whom are women.[9] Migration can also provide relief from competition over diminishing resources at individual, community and national levels. Countries with stronger migration histories and expatriate communities have less climate-related conflict than countries with less migration.[10]

With climate change impacts intensifying, it is abundantly clear that climate migration will increase and that existing patterns will change. New and different outflows and inflows will emerge as impacts grow.[11] Yet specific trends are uncertain, as they depend heavily on how well countries, regions and the world implement mitigation strategies.

In the past decade there has been an encouraging increase in attention to climate migration. However, most of it has been on international flows with a strong focus on 'destination' countries. African cities, countries and regions need to become more aware of climate-linked migration and incorporate it into all levels of planning.

Escalating climate crisis in Africa

Despite contributing the lowest carbon emissions – sub-Saharan Africa is responsible for only 7.1% of the world's greenhouse gas emissions[12] – the most marginalised people in the poorest countries are suffering the most from climate change impacts.[13] Climate change is increasing the frequency, intensity, duration and locations of both slow- and sudden-onset impacts.[14] These will pose some of the greatest threats to people, ecosystems and development over the coming decades.[15]

In 2019, 195% more Africans were impacted by extreme weather than in 2018.[16] A total of 89 disasters occurred across the continent. Eleven storms affected over 4.5 million people and accounted for 1 300 deaths. At the end of 2019, 2 million people had been displaced across sub-Saharan Africa as a result of natural disasters.[17]

Mozambique was undergoing a multi-year drought that halved agricultural production when it was hit by two unprecedented storms in March and April 2019. Cyclones Idai and Kenneth displaced 640 000 and 45 000 people respectively.[18] Both were among the world's biggest disasters in 2019. Cyclone Kenneth is considered the strongest to have ever hit the continent.[19]

Their impacts extended beyond Mozambique and caused serious damage and displacement in Comoros,

Madagascar, Malawi and Zimbabwe. Continued heavy rains hampered efforts to help people return home. A year later, more that 100 000 people were still displaced and millions remained reliant on humanitarian aid.[20]

The West Indian Ocean has been warmer than usual in the past two years owing to rising ocean temperatures and the Indian Ocean Dipole.[21] After years of drought, countries in the East and Horn of Africa – Djibouti, Ethiopia, Kenya, Uganda, Tanzania, Somalia and South Sudan – have experienced exceptionally high rainfall since the end of 2019.

In November 2019 Djibouti got more rain in one day than it typically gets in two years. Flooding left 150 000 people needing humanitarian aid.[22] Many of them were refugees and migrants from neighbouring countries.

Lake Victoria has swelled to record levels.[23] The White Nile basin has flooded. The 'worst floods in South Sudan's history'[24] have displaced over 600 000 people, including the secondary displacement of people who had previously fled conflict.[25] The wet conditions subsequently led to the biggest locust infestation in 70 years in Kenya and 25 years in Somalia and Ethiopia.[26] The locusts have destroyed crops, impacted food prices and threatened food security in at least eight countries.

The subtropical Indian Ocean Dipole has pushed cold water south of Madagascar and suppressed rains across Southern Africa.[27] The on-going six-year drought in the region is the worst in several decades, with normal rainfall in just one of the past five seasons.[28] Zimbabwe has become one of the most food-insecure countries in the world because of the drought and endemic governance issues.[29] Ethiopia remains in a multi-year drought that has displaced upwards of 425 000 people.[30] Lake Chad has shrunk by 90% since the 1960s. Approximately 25 million people depend on it for agriculture, fishing and livestock. A total of 2.5 million people have left the region and 7 million people there are food insecure.[31]

Sudden-onset impacts

Sudden-onset climate change disasters are large-scale singular events of extreme weather, including hurricanes, cyclones, storms, wildfires or heavy rainfall leading to landslides or floods. The intensity and frequency of extreme weather events and the areas impacted by them are growing as global temperatures rise.[32]

Africa is one of the few regions of the world where conflict still displaces more people than disasters do. Globally, disasters displace more people than any other factor. In 2019 disasters displaced three times more people than all conflict and violence combined. Nearly 1 900 disasters displaced 24.9 million people across 140 countries and territories, compared to 8.5 million by conflict and violence.[33]

Displacements from sudden-onset impacts are easier to isolate than those from incremental environmental changes, as the former are more likely to cause highly visible mass displacements. They are also more likely to be temporary. Facing immediate risk, people most often flee to the nearest safe location or to where aid is being provided, but they are likely to want to go back home once safe.

Research has found that sudden and acute shocks can erode migration aspirations, including among potential migrants who had previously expressed a strong desire to migrate.[34] Climate shocks can also diminish migration capabilities because they wipe out assets and cause trauma.

Slow-onset impacts

Slow-onset climate impacts include drought, desertification, salinisation, ocean acidification, glacial retreat, sea-level rise and changing seasonal trends.[35] These have significant impacts on ecological, economic and social systems, including health, livelihoods, food and water security, and human security.[36]

Increases in mean temperatures in most land and ocean regions are creating hot extremes, as well as more variable rainfall and drought. Net yields of crops become more unpredictable and are more likely to shrink or fail as soil quality worsens and water supplies become more stressed or less predictable. Maize, rice, wheat and some other cereal crops are particularly vulnerable to climate variations and heatwaves.

Changing CO^2 levels also impact the nutritional quality of crops. Livestock will be affected by feed quality, the spread of diseases and water availability.[37] Africa is particularly reliant on rainfed agriculture – in sub-Saharan Africa, 95% of the food grown is rainfed. Agriculture employs 65% of Africa's labour force and comprises 32% of its gross domestic product (GDP).[38]

Temperature increases on the continent are expected to exceed global averages, particularly in interior regions.[39] Increased heatwaves, droughts and rainfall variations are predicted to have a particularly dire impact on crops, food supply and agricultural jobs in many parts of the continent.[40]

Sea warming and sea-level rise threaten livelihoods and existence on islands and in low-lying coastal areas and deltas. Rising water levels lead to saltwater intrusion, coastal erosion, flooding and damage to ecosystems and infrastructure. Ocean acidification is altering marine ecosystems, driving marine species to higher latitudes and causing loss of coastal resources, significantly impacting the productivity of fisheries and aquaculture.[41]

Africa has over 47 000 km of coastline and 38 of its 55 countries are coastal and island states. Fishing employs more than 12 million people and provides food security and nutrition for over 200 million.[42] Communities dependent on agriculture or coastal livelihoods face a disproportionately higher risk of adverse consequences. They will likely face multiple compounding threats across the areas of food, water and energy.[43]

Climate change and migration

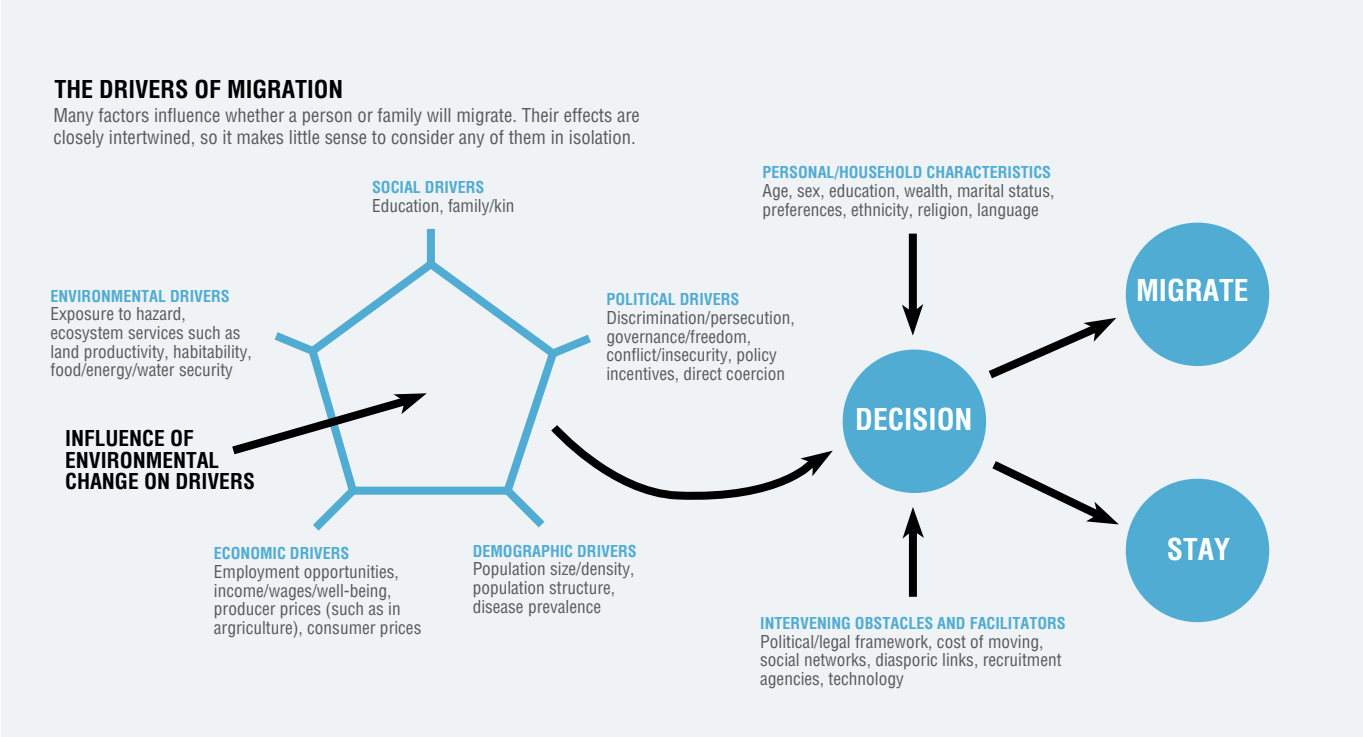
The nexus between climate change and migration is complex. Migration is a highly personal decision that people make for a range of complex and often overlapping reasons that involve economic, environmental, demographic, social and political factors (see Figure 1).

It is very difficult to isolate climate drivers.[45] Few people migrate 'because' of climate change; they migrate because of economic or socio-political factors that are impacted by climate change. Often, even if people do not perceive climate change as a key factor in their decision, it influences their overall lives and livelihoods.

Research on environmental shock and migration in three deltas – the Ganges-Brahmaputra-Meghna Delta in India and Bangladesh, the Mahandi Delta in India and the Volta Delta in Ghana – found that only 2.87% of migrants cited environmental reasons for moving. In contrast, 62.26% cited economic reasons.[46]

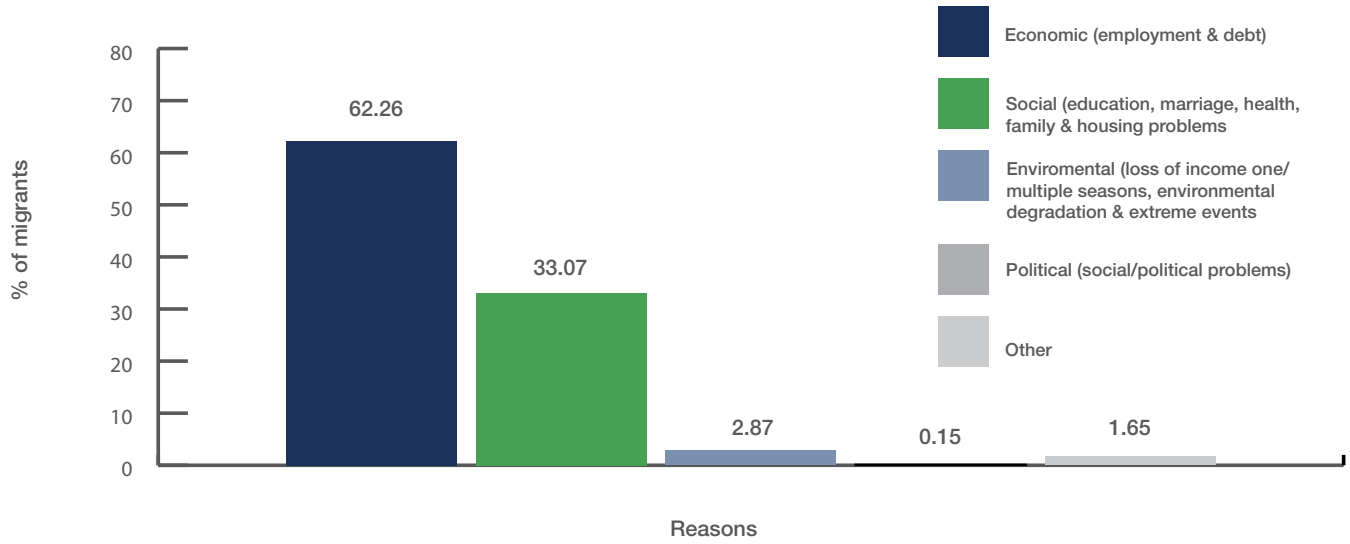
However, one-third of migrant households noted increased exposure to environmental hazards and up to 80% of respondents associated environmental factors with more insecure livelihoods. Environmental drivers

Figure 1: Conceptual framework showing the drivers of migration and influence of environmental change



Source: Foresight, 2011[44]

Figure 2: Main reason for migration across four deltas as reported by household heads



Source: DECCMA, 2018

were thus not perceived as primary migration drivers, but they were a leading factor affecting people's ability to earn a living (see Figure 2).

Poor climate and migration data undermines accurate estimates and predictions. National and international migration databases do not track climate-related data,[47] and many countries collect migration data differently from one another. These often include border crossings, visas and asylum claims, which have severe limitations and provide little information on the role of climate drivers.

Internal migration data is even less robust and provides even less insight into climate drivers. Historical and current climate data in Africa is also scarce. Some scientists have called it a reporting crisis, with very little usable public data.[48]

Climate migration usually local

Whether through slow- or sudden-onset hazards, climate change drives far more internal movement within a country than it does internationally.[49] Of the migrants who do cross international borders, most stay within their region of origin.[50]

Many people migrate only with reluctance. People often try to remain and adapt in place to maintain community and family networks and livelihood sources. Often individual family members leave, as opposed to entire family units. People are most likely to seek work close by in places with a similar culture, language and currency or where other community members have gone before them.[51]

The presence of existing migrant networks significantly increases migration capabilities.[52] Some people move in an incremental pattern from nearby towns toward more distant cities over time.[53] Many people will also often first attempt temporary circular migration before they consider longer-term migration.

The poverty trap

International migration is expensive. It requires resources, knowledge and connections. In areas where people depend on agriculture, aquaculture or other vulnerable resources, climate stresses are likely to erode human, financial and social capital and reduce people's ability to migrate. They are thus far more likely to increase barriers to migration than to increase flows.[54]

Research has shown that rising temperatures in low-income countries decrease migration.[55] The most vulnerable people have the least opportunity to adapt or move – low incomes with diminishing returns from deteriorating crops or stock lead to less mobility,[56] trapping those who are left behind.[57] As the impacts worsen over time, their resources are likely to deplete even further. This is a dangerous cycle in which climate change simultaneously worsens poverty and people's ability to adapt.

In middle-income countries, where liquidity is more available, warming drives movement into cities or

abroad.[58] Some of these middle-income countries, such as Mexico or Morocco, are close to wealthy countries. The costs to migrate are thus relatively low and the voyage relatively quick.

Urbanisation

Urbanisation is a key climate change outcome, as people seek refuge and work in cities. A 2018 World Bank report predicts that there will be 86 million internal climate migrants in sub-Saharan Africa by 2050, and that two-thirds of the world's population will live in cities.[59] It will thereafter accelerate unless significant climate mitigation and development measures are taken. Yet urbanisation tends to be overlooked in climate-migration narratives.[60]

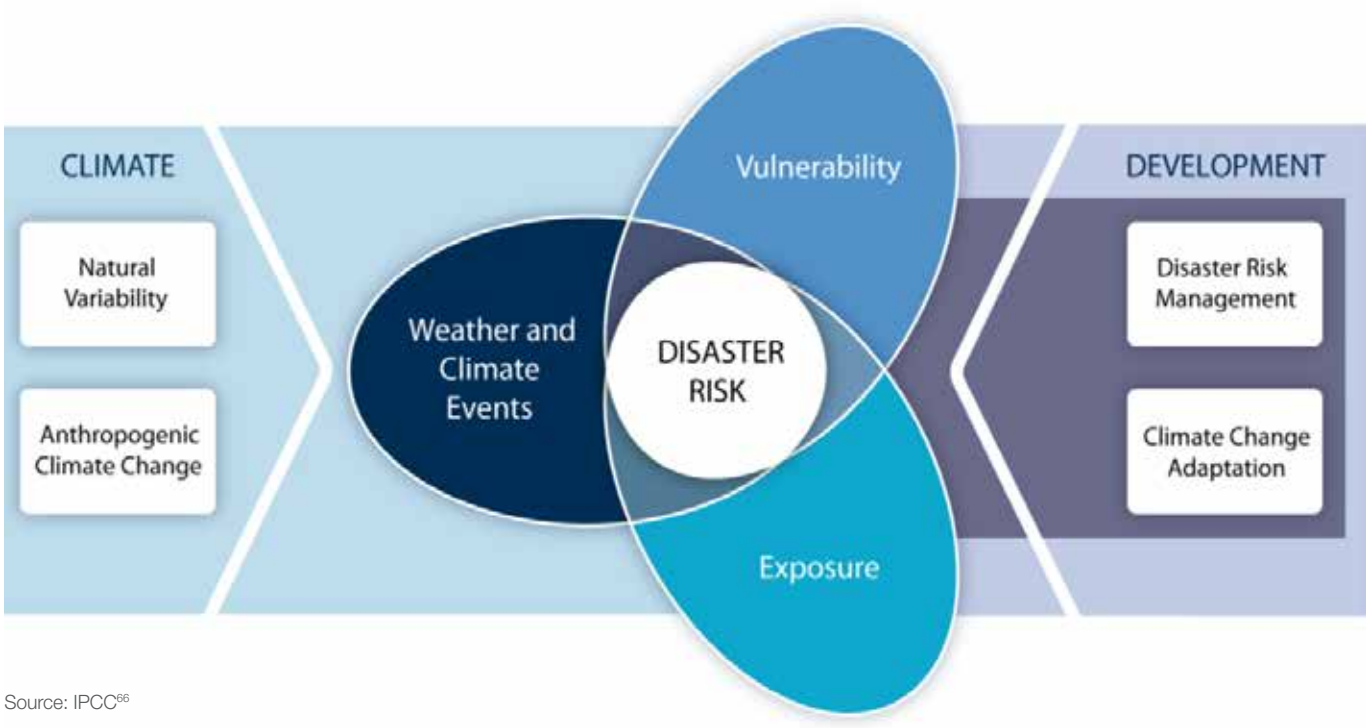
In many of the most affected regions, cities are unprepared for rapid population growth. They lack adequate housing, infrastructure, education, food, water and health facilities to host large numbers of migrants. In some cases, people migrating to urban areas from declining rural environments are likely to be poor and dispossessed. Many will be in distress. They could end up exchanging their vulnerabilities by moving from one form of poverty (rural) to another (slums).[61]

For example, rural-to-urban migrants in Kampala, Uganda have been settling in large numbers in informal settlements in lower-valley areas that are vulnerable to flooding.[62] There is insufficient drainage, waste management and sanitation. Inflows of rural migrants are contributing to overpopulation, while the pressure on systems and associated tensions are increasing.

Many African cities are also susceptible to climate threats. Addis Ababa, for example, is prone to drought and water shortages, while Dar es Salaam is low-lying and coastal and often sees flooding, erosion and storm surges.[63] Cities that typically attract migrants from surrounding areas are thus likely to simultaneously 'push out' different migrants as a result of climate factors.

In some cases, cities will experience in- and outflows simultaneously. Cities in more climate-resilient locations such as highlands will become hotspots for in-migration.[64] Cities that are likely to receive inflows of climate migrants need to prepare and plan for housing, transportation, employment and social services. Cities that are sensitive to climate change and subject to out-migration need to invest in resilience and adaptation strategies.[65]

Figure 3: Key concepts involved in risk management, climate change adaptation and their interaction with sustainable development



Source: IPCC[66]

Table 1: Examples of vulnerability and capacity factors that impact human mobility

Governance	Political instability or poor governance is likely to lead to poorer climate risk mitigation and migration management.
Economic	Financial resources, savings, incomes, insurance or the ability to borrow improve the ability to cope with impacts or to migrate and achieve success. A lack of these creates vulnerability, whether staying or moving.
Social	Strong community or kinship networks improve people's ability to adapt – either in place or in a new location. Lack of networks impede information dissemination, generate mistrust and can expose isolated people to more danger.
Cultural	Disability, illness, age, gender or belonging to a minority group can increase vulnerability as climate impacts occur. These can influence displacement and how successfully people can migrate.
Environment/built environment	Well-functioning ecosystems and hazard-resistant infrastructure help to mitigate damage. Environmental stresses and poor housing and infrastructure make it harder to cope with hazards.

Source: Overseas Development Institute[74]

Preparedness

The extent to which climate hazards lead to disaster and displacement depends on a community's exposure and vulnerability (see Figure 3).

Least-developed countries, landlocked developing countries, low-lying countries and small-island developing states are the most vulnerable to climate change impacts. This is the result of structural constraints, limited institutional capacity, conflict, lack of financial resources and high vulnerability to shocks.[67]

Climate change is described as 'the ultimate threat multiplier'.[68] Changes to the natural environment will put pressure on social, economic and political systems. Increasing stresses on resources through environmental threats and growing populations may overburden weak states and aggravate already fragile situations.

In areas with poor governance or existing tensions, rising scarcity and competition can worsen the situation and escalate into conflict.[69] Conflict, in turn, increases vulnerability to climate change hazards.[70]

Conversely, preparedness and the capacity to adapt lower vulnerabilities (see Table 1). Strong governance, resilience strategies, environmental protections, economic diversification and social supports can help prevent disasters and unwanted displacement. Socioeconomic, cultural, political and environmental factors play a major role in determining whether people will move and whether movement will improve conditions for them and their communities at source and origin.

An area heavily affected by climate impacts with strong resilience planning will see less displacement than a less-affected area that has weak responses in place.[71] Examples of strong resilience planning are early warning systems, crop alternatives, improved irrigation, flood barriers or sustainable development programmes. In cases where migration is a positive adaptation measure, planned and managed migration can have better outcomes than forced displacement.

A study of Cyclone Idai survivors showed that 70% of respondents were unaware of climate change or that it could increase the frequency and severity of extreme weather events.[72] This lack of information left them ill-prepared to cope with its impacts. Many people were reluctant to move despite warnings and only did so once crops, homes and land had been decimated.

Mass displacement occurred in an emergency context without much communication to areas that were unable to accommodate the number of displaced people. New challenges have emerged in the wake of the cyclones, including trying to resettle people in less vulnerable areas.[73] Many people remain displaced in 'temporary' situations where they are extremely vulnerable.

Conclusion

Globally, there is still significant ambiguity about protecting people fleeing climate change impacts. International and regional frameworks are increasingly addressing climate-linked migration. The Global Compact for Safe, Orderly and Regular Migration identifies natural disasters, climate change and environmental degradation as migration drivers. It calls for adaptation and resilience strategies to sudden- and slow-onset hazards that take into account the implications on migration while prioritising adaptation in the country of origin.[75]

In January 2020 the United Nations Human Rights Committee ruled that returning people to countries where their lives could be threatened by climate change may violate their human rights and be unlawful.[76] The ruling acknowledges the severe challenges of climate change and puts pressure on nations to do more to prevent it and protect people from its effects.

These are promising developments, as they recognise that climate change is threatening human rights and causing displacement. However, people migrating owing to climate change are currently doing so without international legal protection or pathways. This is unlikely to change in the near future.

Africa needs to focus on managing African climate-linked migration. International dialogues and frameworks focus on international trends, underpinned by fears of mass migration flows and inherently geared towards restricting movement. Restrictive policies designed to prevent migration will prevent adaptation and put vulnerable people at increased risk. Local, national, regional and continental policymakers cannot rely on international frameworks to guide African policy development.

Planned and well-managed voluntarily movement has far better outcomes than forced displacement. Local and national governments need to strengthen their understanding of climate change and climate-linked migration, and minimise unplanned displacement and urbanisation.

Notes

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