



With 90,000 inhabitants on 1.9 km<sup>2</sup>, Malé, the capital of the Maldives, is one of the world's most densely populated cities. The only place the city can expand to is the artificial island of Hulhumalé at a distance of 2 km. ©Fotolia

## Environmental change and migration in developing countries

How do global environmental change and particularly climate change influence migration patterns in developing countries? This question is increasingly receiving attention up to the highest political levels. The present fact sheet summarises state-of-the-art scientific knowledge that can help to find answers, and it assesses how the issue affects Switzerland and its policies on migration, asylum, and development cooperation.

Most studies' findings suggest that Switzerland will not be flooded with masses of environmental refugees. Population movements that are triggered by climatic factors occur mainly across short distances – within states and, to a lesser degree, between neighbouring states. Switzerland's main challenge is to provide assistance in the countries and regions affected.

### Lessons from the past and current situation worldwide

Researchers have only recently begun to investigate systematically how climate change affects population movements. Many questions are still unanswered. What knowledge is available mostly builds on historical examples of migrations that were triggered, at least partly, by climatic conditions. The most important insights are summarised in what follows.

#### Complex phenomena

Environmental factors alone rarely lead to migration. It is usually in combination with economic, social, and political reasons that they cause people to migrate. Monocausal concepts such as those of "climate refugees" or "climate migrants" are scientifically unfounded.

#### Difficult forecasts

Combined with other factors, climatic changes in certain regions of the world might trigger significant population movements in the future. But catastrophic scenarios of hundreds of millions of people displaced in the 21<sup>st</sup> century due to environmental destruction are scientifically hardly founded.

#### North and South

To date, the impacts of climate change on migration patterns have been investigated above all in developing countries, as they are considered particularly vulnerable. Results from the few studies examining industrialised countries confirm that climate change will have a lesser impact on population movements there.



Increasingly frequent and severe floods due to global warming might eventually slow or even stop the growing urbanisation of Dhaka, Bangladesh, which is currently home to 13 million people. ©Laurent Weyl / Argos

### Climate change and conflict

Some observers hold that environmental destruction inevitably leads to a vicious circle of conflict and migration. Scientists disagree on whether this is the case. Studies show that political, economic, and social factors will continue to be the main drivers of conflict in the future, even if environmental factors do have some influence.

### Trapped populations

Climate change can increase populations' vulnerability and deprive them of the resources it takes to flee from certain

disasters. People who are stuck in such a situation sometimes face worse humanitarian crises than migrants.

### Organised migration as a solution

Organised resettlement is a possible response to the challenges of climate change. But historical experience shows that resettlements of this kind are a delicate issue. In any case, the affected population's consent is a prerequisite for success.

### A grave paradox

Many urban areas in coastal regions and in zones otherwise prone to flooding are popular destinations for immigrants, even though these areas are under particular threat from climate change. Immigration tends to further increase their vulnerability.

### Mechanisms that can trigger migration

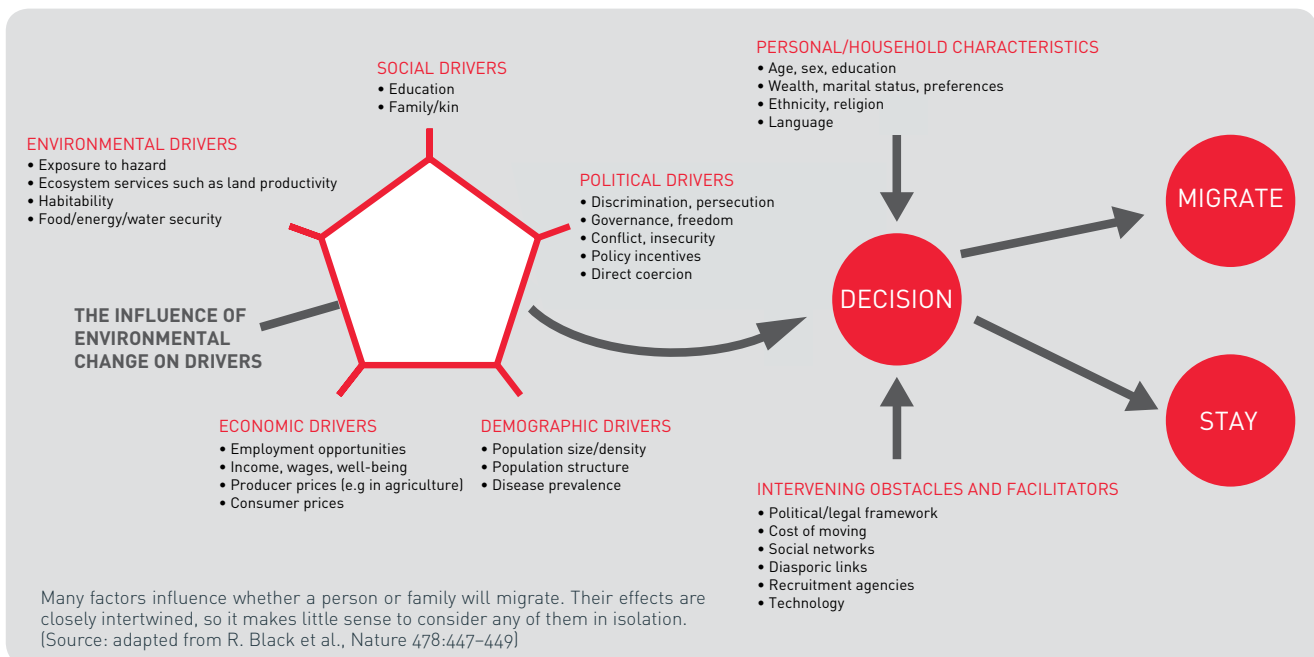
Among the climate change scenarios outlined in the reports of the Intergovernmental Panel on Climate Change (IPCC), three emerge as particularly important in terms of their impacts on migration:

#### Growing intensity of extreme weather events

Tropical storms, heavy rains, hurricanes, and floods are particularly brutal in driving people from their homeland. But they rarely lead to permanent migration. Most people displaced by this type of disaster return to rebuild their homes as soon as they can.

#### Aggravation of droughts in certain regions of the world

Sometimes entire populations leave an area to escape a drought. Notably Africa has experienced this type of exodus from certain areas. In these situations, migration is usually the last resort, when all other survival strategies have failed. What happens more often is that only part of the population migrates to other areas within the country. Their remittances help those left behind to survive.



## Rising sea levels

Sea level rise is the one consequence of global warming that scientists expect will contribute most to mass migrations in the medium and long terms. Unlike hurricanes, floods, and droughts, sea level rise is largely irreversible, leaving migration as the only option for coping. Estimates predict a rise in sea levels of about 0.5 to 1 metre by the end of the century. Today, 150 million people worldwide live in areas less than 1 metre above sea level.

Almost three quarters of the people under threat live in the deltas and estuaries of major rivers in Southeast Asia. Residents of Pacific island countries such as the Maldives, Tuvalu, the Marshall Islands, Nauru, and Kiribati might lose their entire home countries. The citizens of these states – totalling about half a million – might one day constitute a new category of stateless people. In addition, rising sea levels will cause salt water to enter coastal groundwater bodies, making the water unsuitable for drinking and disrupting agricultural production in the areas affected.

## Protective measures

Only very few environmental disasters inevitably lead to migration. Affected populations can devise adaptation and mitigation strategies – sometimes based on their traditional knowledge – which enable them to significantly reduce the pressure to leave. Even the impacts of sea level rise can be counteracted thanks to its slow progress, for example by building dams or other protective measures. However, such measures are often very costly.

## Consequences for Switzerland

### Expected proportions of migration

Most studies indicate that environmental change will not have a major influence on global migration patterns. Accordingly, there is no reason to expect that Switzerland will be confronted with massive waves of “environmental migrants”. In some regions of the world, environmental processes may trigger or augment emigrations to Switzerland if a large number of people from the affected area are already living in Switzerland. However, such emigrations will remain the exception, compared to the number of people who will migrate to neighbouring areas.

### Asylum policy

To date, no international legal texts exist at the global level that would grant protection to refugees and displaced persons fleeing from environmental change or a natural disaster. Neither does Swiss legislation recognise this as a valid reason for granting asylum. Accordingly, no person has ever been granted asylum or temporary protection on environmental grounds, and only very rarely does an asylum seeker declare natural events to be the reason of their flight.

### Development cooperation

Migration related to environmental changes will have little direct impact on Switzerland. Accordingly, the main challenge for Switzerland is to address the issue in its development policy. Many developing countries in different regions

## THE GLOBAL SITUATION

### Main insights

- Most population movements triggered by climatic factors will be of limited duration and cover short distances. They will occur mainly within states and, to a lesser extent, between neighbouring states.
- Of all consequences of climate change, the rise in sea levels is most likely to trigger definitive and massive population movements.
- Paradoxically, countless people seeking refuge from adverse environmental changes migrate to coastal cities – not knowing, or disregarding, that these areas are particularly vulnerable to climate change.
- Migration is not necessarily a bad option. It can be an appropriate strategy for adapting to climate change.
- Environmental degradation, conflicts, and migration do not automatically aggravate each other, but they interact depending on a region’s political, economic, and social conditions. Social factors generally have a greater influence than environmental ones.
- Adaptation and mitigation measures can prevent migration due to climate change to some degree. But they are often very costly.

of the world are and will be affected by environmental change, including Switzerland’s priority countries for development cooperation.

- **West Africa:** Reduced precipitation, droughts, and desertification are forcing people to seek new arable land and water sources. Water scarcity in rural areas also causes people to migrate temporarily – and sometimes even definitively – to urban centres (that are frequently located on the coast and threatened by rising sea levels).
- **Eastern, southern, and central Africa:** Increasingly irregular precipitation patterns require farmers to adapt their farming methods. Food insecurity causes people to migrate.
- **South Asia and the Himalayas:** Glacier melt leads to more frequent floods in the lowlands, and sources of clean drinking water are diminishing. Coastal regions are increasingly threatened by storms and floods. Coupled with the rise in sea levels, these events can have severe impacts on migration.
- **Southeast Asia:** More frequent and more violent floods are reducing agricultural productivity. Problems of rural exodus are worsening. Many rural migrants move to urban centres in coastal regions that are particularly vulnerable due to sea level rise.



Citizens of Bangladesh, who are used to heavy floods, are now trying to adapt to climate change by taking appropriate measures. The photo shows an expert providing advice to people in a village. ©Laurent Weyl / Argos

- **Latin America and the Caribbean:** Water scarcity, hurricanes, floods, and sea level rise are threatening the region. But this region also shows how migration can be a possible adaptation strategy: some communities depend heavily on remittances from their worldwide diaspora for survival.

### Humanitarian aid

Extreme weather events are becoming both more frequent and more violent, leading to more humanitarian emergencies. But the subsequent population movements are usually temporary and over short distances, calling above all for emergency aid and reconstruction support in the affected area itself. Countries that have emitted large quantities of greenhouse gases in the past have a moral responsibility to offer adequate assistance. This means providing help that builds on available resources, as well as mobilising the additional resources needed to support global efforts towards adaptation to environmental change and climate change.

### Challenges for research

Numerous existing research approaches can be put to use for examining more closely how environmental change influences migration. There is a particular need for field studies that simultaneously analyse the development of climatic conditions and of living conditions (longitudinal studies based e.g. on panel data). Certain geographic contexts – for example mountains – need to be addressed in specific studies. Finally, efforts must be made to link results from different studies and harmonise databases. By intensifying research in these areas, Switzerland can achieve great international impact at the interface between humanitarian tradition and scientific excellence.

### CONSEQUENCES FOR SWITZERLAND

#### Main insights and options for action

- Even if developing countries are affected by severe environmental destruction, the impact on Switzerland's asylum system will be marginal.
- The challenge for Switzerland is above all to provide assistance in the areas affected. This includes emergency relief, reconstruction, and support for local adaptation measures.
- Many priority countries of Swiss development cooperation are particularly affected by climate change and might experience large population movements. This needs to be considered in Swiss development policy.
- Existing international law should be adapted to take account of environmental risks. Switzerland as the depositary of the Geneva Conventions could play an important role in this process.
- Switzerland could take a leading role in research on these issues by intensifying its existing research programmes and its activities to enhance documentation and databases.

### Further reading

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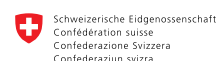
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