FACES OF MIGRATION

CLIMATE MIGRATION

Case Study

Diakonie
Českobratrské církve evangelické

FACES OF MIGRATION

Author: Robert Stojanov

This document has been produced with the financial assistance of the European Union. The contents of this document are the sole responsibility of Diaconia of the ECCB and can under no cirmustances be regarded as reflecting the position of the European Union.

The document is part of the SDGs and Migration – Multipliers and Journalists Addressing Decision Makers and Citizens project which is realized in the framework of the Development Education and Awareness Raising (DEAR) programme.

Published by: **Diaconia ECCB Center of Relief and Development, 2021**
Graphic design: **BOOM s.r.o.**
First edition, 2021, Prague

This project is funded by the European Union

The following organizations are involved in the "SGDs and Migration" project, managed by Diaconia of ECCB: Global Call to Action Against Poverty (Belgium), Bulgarian Platform for International Development (Bulgaria), Federazione Organismi Cristiani Servizio Internazionale Volontario (Italy), ActionAid Hellas (Greece), Ambrela (Slovakia) and Povod (Slovenia).

ISBN 978-80-907574-6-2 (online; pdf)
ISBN 978-80-907574-5-5 (online; pdf), (Czech edition)

CLIMATE MIGRATION
Case Study

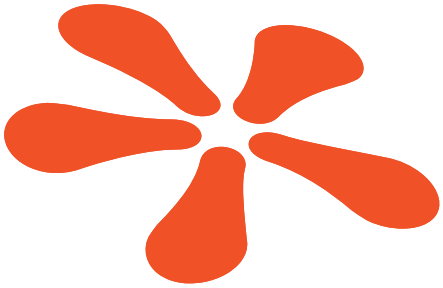
Abstract

Although natural resources, such as water or soil, may seem inexhaustible, in many cases the reality is quite the opposite. Long-term devastation, significant changes in the environment or a natural disaster can fundamentally affect the lives of the inhabitants of a given area and thus deprive them of vital natural resources, housing or livelihood. People in such affected areas are forced to leave their homes and seek their livelihood elsewhere. And this is how the process of environmental migration arises.

The effects of climate change increase the likelihood of environmental migration, creating growing challenges for human development and planning. Such vulnerable people have less opportunity to adapt to avoid these risks. Migration thus often seems to be their last resort or strategy. Climate change is a growing driver of internal migration in particular, and there is a presumption that migration due to climate change will intensify over the next few decades and could accelerate even more after 2050. The international overlap of climate migration can be identified as a fairly likely risk for a smaller country and region more severely affected by the effects of climate change, war conflicts and economic and social crises.

Recent estimates show that by 2050, climate change will force 143 million people to migrate internally. A recent study estimating the number of people affected by the floods by 2100 states that, according to new sea level rise models, it will affect 190 million people for low greenhouse gas emissions, or 630 million people for high greenhouse gas emissions. Migrants can be expected to migrate from less viable areas with lower water availability and crop productivity (e.g. Sahel, inland China, etc.), or from areas affected by rising sea levels and severe storms (e.g. small low-lying islands, coastal areas) to urban centers. Here they will have to settle in the poorest parts of the cities (slums) with all the negatives that result from it.

Robert Stojanov
Faculty of Business and Economics, Mendel University in Brno
e-mail: stojanov@centrum.cz
www.chytramigrace.cz



1. Introduction: Why do people migrate?

Migration is one of the most dynamic processes in human society. It is part of the cultural patterns of various societies and serves as one of the population's strategies for survival or personal development. There are, of course, many reasons why people migrate. People most often migrate due to a combination of some of the following five factors: (i) economic (employment), (ii) political, (iii) social (family), (iv) psychological, and (v) environmental factors.

In this regard, however, it must be said that individual countries have different migration needs and set their immigration policies accordingly. These focus on efforts to make their economies more attractive, to attract migrants to certain sectors within their economies or to regions where they feel a shortage of a certain workforce. However, in poor countries of origin, the loss of IT, engineering and medical professionals can have a negative impact on local development (brain drain) (Adepoju 2018).

In many European and Czech government documents, the term "illegal" migration is used for migration and residence of unauthorized foreigners. Experts, especially from Anglo-Saxon countries, prefer the term "irregular migration", which less stigmatizes migrants.

As a general rule, the more restrictive the policies on regular migration, the more room there is for irregular migration. This occurs in two basic ways (Dizdarevich 2008):

1) illegal crossing of state borders, which is closely related to human trafficking and other wide range of criminal activities, the victims of which are irregular migrants; or
2) exceeding the permitted period of stay or carrying out activities that the type of stay directly prohibits (for example, working "illegally" in the case of a visa for the purpose of study). In these cases, irregular migration is mainly related to the irregular employment of migrants and their labor exploitation. In scholar literature, the term "overstayers" is used for this type of irregular migrants and it can be said that they are the most important group of irregular migrants in terms of number and related issues. However, the stay of these migrants in a given country is often not illegal.

2. Environmental migration

Population migration can also be seen as a short-term reaction (coping strategy) to the current life situation - job loss or poor harvest, or as a long-term adaptation strategy, such as a significant change in the environment (extreme drought) or loss of housing.

Although natural resources, such as drinking water or soil, may seem inexhaustible, in many cases the reality is quite the opposite. Long-term devastation, a significant change in the environment or a natural disaster can fundamentally affect the lives of the inhabitants of a given area and thus deprive them of vital natural resources, housing or livelihood. People in such affected areas are forced to leave their homes and make a living elsewhere. And this is how the process of environmental migration arises.

Environmental migrants are people who have been forced to leave their original place of residence temporarily or permanently as a result of a significant environmental disruption that has endangered their existence or seriously affected their quality of life. Their country (area) can no longer provide them with a secure living. Disruption of the environment can be caused by human activity or the action of natural forces (or a combination of both) and is often associated with problems such as population pressures and poverty. The main causes of environmental migration are mentioned in Table 1.

Table 1: Main causes of environmental migration

Natural disasters	Cumulative (slow) changes	Industrial disasters and pollution	Development projects	Conflicts and wars
Floods earthquakes volcanic eruptions landslides hurricanes and tropical storms tsunami	Soil degradationdrought / lack of waterclimate change (variability) sea level rise	Nuclear disaster factory accident environmental pollution (air, water, soil)	Construction of river damsconstruction of irrigation facilities and infrastructure natural resources mining urbanization	Intentional destruction of the environment due to natural resources conflict

The use of the term environmental (climate, ecological, etc.) by refugees is at least inaccurate and does not comply with international law. According to the 1951 Geneva Convention Relating to the Status of Refugees and its 1967 Protocol (instruments of international law), only a person who is forced to cross international borders because of a well-founded fear of persecution on the grounds of race, religion, nationality, political opinion or membership in a certain social group may be recognized as a refugee. The concept of an environmental refugee thus does not correspond to international or national conventions, and people who have had to leave their homes due to environmental change are thus not entitled to asylum or the necessary protection. From a technical point of view, therefore, it is much more accurate to use the broader and neutral term "environmental migrant" instead of the term environmental refugee, which already includes an effort to change the international community's approach to these people. Residents leaving environmentally affected (degraded) areas most often migrate at the same time due to economic factors (finding a more stable or larger source of income independent of weather fluctuations, labor migration, etc.). Environmental migrants can be divided into three basic groups:

1. **Environmentally motivated migrants** leave their place of residence relatively voluntarily, preventively, due to a serious environmental threat (e.g., environmental pollution). Migration in this case can be understood as a strategy for coping with a critical situation or a way of adapting to new or changing environmental conditions. Other migration factors, such as political or economic ones, can also play an important role.

2. **Environmental displaceees** are forced to leave their homes due to endangering their lives, livelihoods and prosperity. They are in serious danger due to the negative effects of environmental processes or natural disasters, or even human activity (e.g. Chernobyl disaster) migrants can be divided into the following two subcategories according to the speed of the changes coming:
   a) **Slow-onset environmental displaceees** have the "advantage" of a relatively longer period of time and a better choice of destination for finding a new home and livelihood (especially compared to the following subcategory). These people have a longer experience with environmental degradation (e.g. soil degradation, change of precipitation regime) or with periodically recurring natural disasters (floods, hurricanes, earthquakes, etc.).
   b) **Rapid-onset environmental displaceees** are forced to relocate from their place of residence almost immediately before or immediately after the predicted natural disaster. Their residence, harvest or livelihoods are in most cases completely destroyed.

3. **Development displacees** are forced to leave their homes as a result of the intended use of the territory in which they live or where they carry out an economic activity. Their territory is thus planned for some development activity or project (e.g. construction of a river dam, irrigation facilities, transport infrastructure, airports, progressive urbanization, etc.). These resettlers differ from the previous categories not only in that their resettlement was planned in advance, but also in that there is a clear responsibility for their eviction and thus the possibility of some compensation, which does not always occur.

Each of these groups of migrants has its own specifics. While environmentally motivated migrants are more likely to expect permanent migration, environmental resettlers can be all types of migration in terms of duration: temporary (up to 1 year), cyclical, long-term (1-3 years), permanent (longer than 3 years).

3. Climate change and population migration

Climate change includes a complex of dynamic biophysical changes that have significant implications for the current functioning of natural and socio-economic systems. Specifically, these are changes in the Earth's climate system, such as changes in temperature, the distribution and intensity of precipitation, winds, ocean currents and changes in the frequency of climatic extremes. These changes have a concrete impact on the quality of life of individuals, communities and entire societies.

According to the authors of the World Bank's 2018 report (Kumari Rigaud et al. 2018), climate change is a growing cause of internal migration. The effects of climate change (reduced crops, water scarcity, rising sea levels) increase the likelihood of migration, as affected people have very little opportunity to adapt their livelihoods in such affected areas. They perceive migration as the last chance for survival. Other disabled people, who are even more vulnerable and unable to migrate, will remain trapped in increasingly non-viable areas. Thus, internal climate migration can be expected to intensify over the next few decades and, in the event of insufficient mitigation measures (especially greenhouse gas reductions), to accelerate after 2050 due to stronger climate impacts associated with rapid population growth in many regions, notably Africa and South and Southeast Asia.

Extreme weather events can be divided into temperature extremes (such as heat waves), precipitation extremes (in both directions - heavy rainy or precipitation deficiency), river floods or hydrological drought (related to the previous two categories), tropical cyclones in terms of changes in frequency and intensity (IPCC 2012). These are manifested, for example, by the occurrence of unusual, longer periods of drought – for instance the number of days without precipitation, more frequent occurrence of extremely hot days or nights, higher wind speed, faster water cycle, more significant changes in seasonal or monthly total precipitation, or the occurrence of extreme heavy rains. In some parts of the world, we can see an overall shift in the onset of seasons and seasonal cycles (such as monsoon cycles), etc. (see IPCC 2007; Hansen, Sato and Ruedy 2012).

These climatic extremes call for rapid adaptation at the level of households, communities and entire states (Linnenluecke and Griffiths 2012; Etkin, Medalye and Higuchi 2012; Grothmann and Reusswig 2006). This aspect is key when planning and dimensioning longer-term projects, such as transport infrastructure, buildings and human settlements, water works, flood or irrigation facilities, forest planting, etc. The infrastructure of cities and municipalities should to some extent consider climatic extremes and be their occurrence and impacts prepared (IPCC 2012).

In addition to obvious factors, "qualitative criteria" also play a role in migration decisions, for instance cultural specificities such as local cultural conditions, lifestyles, diversity of livelihoods or close relationship, social cohesion or psychological resilience in coping of extreme life events in general (Adger et al. 2012). Ongoing climate change thus has an impact not only on the natural environment, but also changes or threatens existing cultural patterns, livelihoods and other cultural and social values associated with this dimension. For example, increasing the extent of drought-prone areas has implications not only for the environment but also for past animal pastoralism practices, which is a typical adaptation of pastoralist communities to semi-arid areas, which are already characterized by water scarcity and precipitation (Adger et al. 2012; Silvestri et al. 2012). Another example may be the impossibility of farming, fishing or other forms of land use in the event of more permanent flooding of the area due to rising sea levels, etc. One of the adaptation strategies may also be various forms of migration.

4. The most risky areas (so-called hotspots)

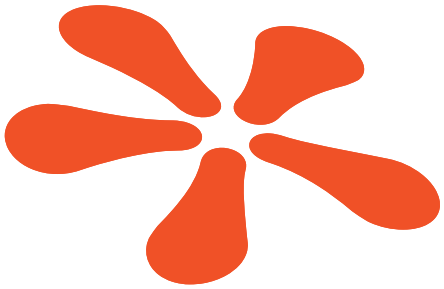
The most risky areas include low-lying regions and islands with high population density (e.g. cities) and coastal agricultural areas (e.g. river deltas). Current and potential "hot spots" with preconditions for the occurrence of environmental migrants by 2050 are shown in Table 2. In these countries or regions, internal migration can be expected, but the international dimension cannot be completely ruled out (e.g. from Bangladesh to India). In most cases, environmental factors will play a crucial role along with other factors, the most important being economic and safety. Demographic factors will also play an important role in the case of areas or countries with high population density (e.g. Bangladesh, river deltas, coastal cities) or a large number of young people of working age (Africa).

Table 2: Current and expected "hot spots" of environmental migration by 2050

Vulnerable areas of emigration	Target areas of migrants	Environmental reasons
Sahel	coastal cities, Nairobi	change of precipitation regime, drought, water deficiency, soil degradation
Tanzania (coastal areas, Dar es Salaam)	internal cities	sea level rise
Bangladesh, India	Bangladesh, India (internal migration associated with urbanization; southern mountains between Bangalore and Chennai; international migration from Bangladesh to India)	river erosion, floods, soil degradation (e.g. increasing salinity), hurricanes
China (northwestern region, construction sites of cities and dams)	Coastal areas in China	urbanization, drought, soil degradation
Haiti	USA	earthquakes, deforestation, soil erosion
Pacific Islands	New Zealand, Australia, USA	sea level rise
China, Bangladesh, India, Vietnam, Indonesia, Thailand, Philippines and Japan (coastal areas)	inland, higher areas (India in the case of Bangladesh)	sea level rise, floods on the coast
Egypt (Nile delta)	Middle East	sea level rise, soil degradation, drought
Middle East (e.g. Yemen, Syria)	Middle East (e.g. Turkey, Jordan, Lebanon), Mediterranean	drought, soil degradation

Source: **own research, Kumari Rigaud et al. (2018)**

Policy makers should thus provide flexible social protection services for these migrants and involve them in planning and decision-making. If migration is well managed, it can create a positive impetus, even in urban areas, which can benefit from increased population and economic growth. Internal climate migrants do not necessarily stop at international borders. They can be expected to be crossed, especially in affected areas close to state borders. Climate change can be an inhibitor or driver of cross-border migration, depending on a number of factors that force individuals to move (Kumari Rigaud et al. 2018).



5. How many environmental migrants are they, where do they come from and where do they go?

Nobody knows exactly how many environmental migrants there are. In addition to the problems with the definition of the term itself, this fact is due to the lack of a uniform methodology for determining this number. However, one of the latest research reports on estimating the number of climate migrants, prepared in 2018 under the guidance of Columbia University experts (Kumari Rigaud et al. 2018), states that by the end of 2050, climate change will force 143 million people to migrate internally. The latest study to estimate the number of people affected by the floods by 2100 (Kulp and Strauss 2019) states that according to new sea level rise models, it will affect 190 million people for low greenhouse gas emissions or 630 million people for high greenhouse gas emissions. According to this report, 250 million people currently live in areas less than one meter above sea level (e.g. river deltas, small islands) and are thus at risk of rising ocean levels (see Table 2).

A comparison with the official number of legally recognized refugees and asylum seekers of about 30 million in 2019 (UNHCR 2019) clearly shows the "sleeping" potential of the problem of environmental migration.

6. Conclusion

Refugee movements and other forms of forced / involuntary migration are a useful barometer of the human sense of security and safety for the regions. Finding a new place to live, at least for a while, is the goal of all refugees and other international migrants. At present, however, planet Earth no longer offers uninhabited areas suitable for a mass influx of migrants. Mass migration to traditional target areas thus often ends in conflict with local people or another environmental or social disaster due to increasing demands (pressures) on the environment. International efforts should therefore be made to prevent involuntary migratory movements, which in the case of environmental migration means preventing the emergence of environmental pressures and addressing their possible consequences. Prevention based on early warning systems of sudden natural disasters, focusing development interventions on projects aimed at eliminating the environmental causes of migration or cooperation of countries in reducing greenhouse gas emissions and finding appropriate financial and technical tools for adaptation to already affected areas are examples of possible ways to address the climate change impacts on movement. At the same time, however, they clearly point to huge problems in putting them into practice.

However, where local limits on adaptation are exhausted, well-planned environmental migration to more viable areas can be a successful life strategy. To this end, however, a strong and favorable environment for migration must be created, supported by direct incentives, such as programs to acquire new skills and create jobs. This would allow people to move to low-risk areas with greater opportunities. Strategies to support internal migration must ensure not only the resilience of those who migrate, but also those of the sending and receiving communities. Between 2030 and 2050, it can be expected that the environmental and economic processes in climate migration "hot spots" will be more intense and eventually their area or number will expand. Countries will therefore need to take a long-term and forward-looking approach to planning and decision-making, in which climate migrants will be included in overall growth and development strategies (Kumari Rigaud et al. 2018).

Adverse climatic conditions, however, do not necessarily trigger (mass) migration. The inability to migrate (for example due to financial reasons, non-knowledge, insufficient capacity, etc.) is also problematic in such conditions and can lead to deepening cycles of poverty and vulnerability. Exposure to the adverse effects of climate change can, in combination with other factors (political, economic, demographic), cause emergencies (e.g. food crises and famines). Population migration may thus seem to be a more appropriate life strategy. Policies and programs that explicitly consider population migration are needed to anticipate and prevent large-scale humanitarian emergencies due to climate change.

Robert Stojanov is assistant professor at Faculty of Business and Economics, Mendel University in Brno. Recently he was DiSSGeA Visiting Professor at the Department of Historical and Geographical Sciences and the Ancient World at University of Padua. He is environmental and population geographer focusing on drivers and techniques of smart migration; environmental factors of population dynamics; social and economic impacts of climate change and adaptation strategies; migration, remittances and development; and effectiveness of development interventions such as development aid. Robert received his PhD in Environmental Geography at the University of Ostrava, and two master's degrees in History, Geography, Social Studies at the University of Education in Hradec Králové, and in Environmental Studies at the Faculty of Social Sciences at Masaryk University in Brno. He was awarded by Jean Monnet Postdoctoral Fellowship at the European University Institute; by a Certificate for Climate Change & Its Impact at Brown University, and received awards for Excellence for Highly Commended Paper of 2015 and 2016 by Emerald Group Publishing. In early 2018, his paper was ranked among the top 1% of most cited papers in Social Sciences at Web of Science (Clarivate Analytics).

Before joining the Mendel University, he was Jean Monnet Fellow at the Migration Policy Centre (MPC) and at the Robert Schuman Centre for Advanced Studies (RSCAS) within European University Institute in Florence, and served as Head of the Adaptation Strategies Research Unit of the Center for Global Change Research at the Czech Academy of Sciences, and as a assistant professor at Charles University and Palacký University. He has experience from many field surveys dealing with links between environment, population and development. Robert is member of the Editorial Board of the Population & Environment journal. He has published his work in a number of influential professional journals and publishers. In the last two years, he has given inviting lectures at a number of foreign universities and institutions. The results of his work can be found at http://www.stojanov.org

REFERENCES

Adepoju, A. (2018): The Global South's New Migration. [online]. November 4, 2018. **The Cairo Review of Global Affairs.** The American University in Cairo.
Available at https://www.thecairoreview.com/global-forum/the-global-souths-new-migration/ (1.9.2019)

Adger, N.W.; J. Barnett; K. Brown; N. Marshall & K. O'Brien (2012): Cultural dimensions of climate change impacts and adaptation. **Nature Climate Change**, 3(11): 112–117.

Dizdarevič, S.M. (2008): Neregulérní migrace v kontextu imigrační a integrační politiky EU. In: Neregulérní pobyt cizinců v ČR: problémy a jejich řešení, Člověk v tísni, Praha, pp. 17-22.

Etkin, D.; Medalye, J.; Higuchi, K. (2012): Climate warming and natural disaster management: An exploration of the issues. **Climatic Change**, 112 (3–4): 585–599.

Grothmann, T.; Reuswigg, F. (2006): People at Risk of Flooding: Why Some Residents Take Precautionary Action While Others do not. **Natural Hazards**, 38: 101–120.

Hansen, J.; Makiko, S.; Ruedy, R. (2012): Perception of Climate Change. PNAS, 109(37): 1–9.

IPCC (2007): Summary for policymakers of the synthesis report of the IPCC fourth assessment report. Intergovernmental Panel on Climate Change. Cambridge – New York: Cambridge University Press.

IPCC (2012): Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change. Cambridge – New York: Cambridge University Press.

Kulp, S.A.; Strauss, B.H. (2019): New elevation data triple estimates of global vulnerability to sea-level rise and coastal flooding. **Nature Communication**. 10: 4844.

Kumari Rigaud, K.; de Sherbinin, A.; Jones, B.; Bergmann, J.; Clement, V.; Ober, K.; Schewe, J.; Adamo, S.; McCusker, B.; Heuser, S.; Midgley, A. (2018): Groundswell: Preparing for Internal Climate Migration. Washington, DC: The World Bank.

Linnenluecke, M.K.; Griffiths, A. (2012): Assessing organizational resilience to climate and weather extremes: complexities and methodological pathways. **Climatic Change**, 113(3–4): 933–947.

Silvestri, S.; E. Bryan; C. Ringler; M. Herrero & B. Okoba (2012): Climate change perception and adaptation of agro-pastoral communities in Kenya. **Regional Environmental Change**, 12: 791–802.

UNHCR (2019): Figures at a Glance. [online]. United Nations High Commissioner for Refugees, Geneva.
Available at https://www.unhcr.org/figures-at-a-glance.html

Diakonie
Českobratrské církve evangelické

Diaconia ECCB
Center of Relief and Development
Belgická 374/22, 120 00, Prague 2 – Czech Republic

www.diakoniespolu.cz/en/

Author: **Robert Stojanov**
Published by: **Diaconia ECCB Center of Relief and Development, 2021**
Graphic design: **BOOM s.r.o.**
First edition, 2021, Prague

ISBN 978-80-907574-6-2 (online; pdf)
ISBN 978-80-907574-5-5 (online; pdf), (Czech edition)

This project is funded
by the European Union

This document has been produced with the financial assistance of the European Union. The contents of this document are the sole responsibility of Diaconia of the ECCB and can under no cirmustances be regarded as reflecting the position of the European Union.

The document is part of the SDGs and Migration – Multipliers and Journalists Addressing Decision Makers and Citizens project which is realized in the framework of the Development Education and Awareness Raising (DEAR) programme.

FACES OF MIGRATION