NEW MIGRATION TRENDS: ENVIRONMENTALLY INDUCED MIGRATION

ABSTRACT

This article looks at the effects of environmental degradation and climate change on the movement of people. It focuses, in particular, on the most vulnerable regions and geographic areas, and discusses the notion of "environmental migrants."

MIGRATION POLICY, RESEARCH AND COMMUNICATIONS DEPARTMENT
INTERNATIONAL ORGANIZATION FOR MIGRATION

The International Organization for Migration works to promote, facilitate and support discussion on migration issues. It offers expert advice, research, technical cooperation and operational assistance to states, intergovernmental and non-governmental organizations and stakeholders, as well as support for those who require international migration assistance.

The environment and migration are both issues of high prominence on national and international political agendas. However, while environmental degradation, climate change and migration themselves are certainly not novel for the international community, their complex interrelations have not been studied sufficiently in an empirical and comprehensive way so as to better understand and address the impacts of environmental degradation and climate change on people's livelihoods and population movements while meeting the urgency of the challenges posed.

This article takes a closer look at how environmental degradation and climate change impact people's livelihoods and contribute to, or directly cause, the movement of populations. This article focuses, in particular, on the regions, areas and communities that are most vulnerable in the face of adverse effects of climate change and environmental degradation. We also look at the on-going debate over the term and notion of "environmental migrants." Some possible policy responses to the management of environmentally induced migration will be explored.

A debated notion

To begin with, significant debate persists, both in academic and policy circles, over the concepts employed, the underlying mechanisms involved, the urgency and magnitude of the challenges faced and possible policy responses to climate change and environmental degradation. Most notable, perhaps, are conflicting views about the definition and status of persons opting for or forced to migrate for environment-related reasons.

The term "environmental refugee," first coined by Lester Brown in the 1970s and widely quoted since, is a misnomer. The 1951 *United Nations Refugee Convention* defines as refugees "people outside of their own country because of a well-founded fear of persecution on account of their race, religion, nationality, membership of a social group or political opinion." There is no suggestion today that displacement as a result of environmental factors constitutes persecution, except in extremely limited and unlikely circumstances. Moreover, there is no definition in international law for persons moving as a result of environmental factors. Indeed, people rarely move for a single reason alone: economic and environmental factors often arise in combination. The Office for the United Nations High Commissioner for Refugees (UNHCR) itself has expressed concern over the term "environmental refugees" as it could blur the responsibility of governments towards their citizens and result in diluting emphasis on the distinctive need of refugees for protection.

The International Organization for Migration (IOM) has proposed a working definition of "environmental migrants" as "persons or groups of persons who, for compelling reasons of sudden or progressive changes in the environment that adversely affect their lives or living conditions, are obliged to leave their habitual homes, or choose to do so, either temporarily or permanently, and who move either within their country or abroad" (Brown 2008: 15). The purpose of this working definition is to focus attention and emphasis on the needs and conditions of environmental migrants, rather than on likely contentious legal definitions with implications for status.

Contextualizing climate change, environmental degradation and migration

The face of climate change

Throughout its existence, the earth has experienced numerous evolutions between warm and cold periods (including orbital variations, solar fluctuations, volcanic activity, to name just a few).

The changes we are witnessing today, however, are occurring at a much more rapid pace, with stronger magnitudes and patterns as yet not entirely explicable by natural cycles. Average global surface temperatures – a key measure of climate change – have arguably been the highest in any 50-year period for the past 1,300 years. Over the past 100 years, the earth has warmed by 0.7°C (Watkins 2007: 31).

Human-induced climate change results primarily from the alteration of atmospheric concentrations of greenhouse gases. By increasing the greenhouse effects of naturally occurring atmospheric trace gases, human activity further enhances them, leading to accelerated global warming. For example, with the doubling of carbon dioxide, the globe is estimated to warm by 1.9ºC to 4.4ºC.

Some of the main *natural causes of climate change* are the following: volcanic eruptions, solar variability, and El Niño Southern and North Atlantic oscillations (Kniveton et al. 2008: 14)

The meteorological impacts of climate change can be divided into two distinct groups of drivers of migration: first, *climate processes* – such as sea-level rise, salinization of arable land, desertification and growing water scarcity; second, *climate events* – such as storms and floods. Each of these two groups has a specific impact on the movement of people, with events displacing entire populations suddenly and mostly unpredictably, and processes displacing communities, households or individual people over the course of a time period that extends far beyond usual migratory patterns in a given region. In addition, it should be emphasized that non-climate related drivers of migration, such as government policies, changes in demographics, community-level resilience to natural disasters, to name a few, are also relevant determinants (Brown 2008: 9)

All in all, forecasts of the number of persons having to move or being displaced due to climate change and environmental degradation by 2050 varies from 25 million to 1 billion…The wide variation among these figures is a clear indicator of the need for further evidence-based research.

The impact of climate change on human mobility

As early as 1990, the Intergovernmental Panel on Climate Change (IPCC) estimated that the greatest single impact of climate change might be on human migration – with millions of people displaced by shoreline erosion, coastal flooding and agricultural disruption. The 2001 *World Disasters Report of the Red Cross and Red Crescent Societies* estimated the number of what they referred to as "environmental refugees" at 25 million persons that year (Ibid.: 11). All in all, forecasts of the number of persons having to move or being displaced due to climate change and environmental degradation by 2050 varies from 25 million to 1 billion, with the most widely quoted figure of 200 million suggested by Norman Meyers (Ibid.). The wide variation among these figures is a clear indicator of the need for further evidence-based research on environmentally induced migration.

The *United Nations Development Programme (UNDP) Human Development Report 2007/2008* featured an overview of key transmission mechanisms through which climate change could stall and even reverse human development (Watkins 2007: 9-10):

> *Agricultural production and food security*. Climate change will affect rainfall, temperature and water availability for agriculture in vulnerable areas….The additional number of persons affected by malnutrition could rise to 600 million by 2080…
>
> *Water stress and water insecurity*. Changed run-off patterns and glacial melt will add to ecological stress….An additional 1.8 million people could be living in a water scarce environment by 2080…
>
> *Rising sea levels and exposure to climate disasters*.…Global temperature increases of 3-4ºC could result in 330 million people being permanently or temporarily displaced through flooding [in coastal areas prone to such disasters already. Cumulative vulnerability will increase in proportion.]…
>
> *Ecosystems and biodiversity*. Climate change is already transforming ecological systems….With 3ºC of warming, 20-30 percent of land species could face extinction...
>
> *Human health*.…greatest health impacts will be felt in developing countries because of high levels of poverty and the limited capacity of public health systems to respond. Major killer diseases could expand their coverage...

Put simply, by making certain parts of the world significantly less "viable," climate change and environmental degradation will cause major population movements. However, as elaborated below, migration is rarely driven only by an environmental "push" linked to a slow onset climate process. Except for cases of extreme environmental events, where people flee for their lives, the decision to migrate is usually also based on a combination of "pull" factors (environmental, social and economic, to name just a few) (Brown 2008: 19).

Towards a better understanding of the complex linkages between climate change and migration

According to the most recent volume of the *IOM Migration Research Series*, conclusive evidence on how the shocks and stresses caused by climate change might

influence migration is not yet available (Kniveton et al. 2008: 6). The extent to which migration occurs in response to the various types of climate stresses and shocks remains to be verified. However, such an analysis needs to take into account that individuals, households and communities alike may opt for migration as just *one* of the many possible strategies in response to climate-induced stress and shocks. In addition, climate change should be considered as just one among many other factors impacting migration decisions. In view of this, further analysis is needed on how relevant the climate change factor is in decision-making as well as how (and whether at all) climate change and/or environmental degradation influences the choice of destination, the length of stay and the number of people migrating (Ibid.: 7).

As IOM research suggests, there are two principal approaches to understanding the linkages between climate stimuli and migratory behaviour. First, there is the *sustainable livelihoods approach*, which aims at explaining the possible responses of households to external vulnerabilities in terms of their natural, physical, financial, human and social assets and different coping strategies. Second, there is the *new economics of labour migration approach*, which explores the reasons for migration at the individual level and in the context of household decision-making. Another step in attempting to assess the climate change-migration linkages (following the process of understanding how people cope with the different types of adverse climate change effects) involves "quantitative methods of statistical regression and agent-based modelling in order to integrate the multiple variables involved in migration and vary the values of these to obtain simulations of future migration patterns" (Ibid.: 7).

Today, almost 2 billion people in the world depend on fragile ecosystems in arid and semi-arid areas with 90% of them living in the developing world where increasing ecological stresses are threatening livelihoods.

Vulnerability distribution: The mapping challenge

In terms of vulnerabilities, it is unfortunately the developing countries, including the least developed countries and *small island developing states* – often the ones least responsible for man-made climate change – and within them, the most vulnerable communities, that are at the greatest risk of suffering from the adverse effects of climate change. According to some estimates, developing countries suffer 98% of the casualties of natural disasters.

Geographically, South and East Asia, parts of Africa such as the Sahel region, and small islands states around the world are the hardest hit. In particular, warming is likely to be above the global average throughout sub-Saharan Africa, eastern Asia and South Asia. In many water-scarce regions, climate change is expected to further reduce water availability through increased frequency of droughts as well as increased evaporation and changes in patterns of rainfall and runoff (Watkins 2007: 90).

Six of Asia's ten mega-cities are located in coastal areas (including Tokyo and Shanghai), which makes the region's communities especially vulnerable to sea level rise. Moreover, "By the 2050s, freshwater availability in Central, South, East and South-East Asia…is projected to decrease" (IPCC 2007: 11). In Africa – a continent of low adaptive capacity and heavy dependence on arable lands – three-quarters of agricultural drylands are already degraded to some extent, with 70% of the poor living in rural dryland areas (Leighton 2008). Major threats on this continent are posed by changed patterns of rainfall, desertification and land erosion. An estimated 10 million people have been displaced in Africa over the last two decades, while 60 million people are expected to move from desertified areas of sub-Saharan Africa toward North Africa and Europe by 2020, according to the United Nations Convent to Combat Desertification (Kalbermatten 2008).

Small island states have been facing increasing threat for decades as a result of rising sea levels because much of their territory is at an altitude of just a few meters above sea level. Moreover, many island states are characterized by relatively high levels of development and important density of populations near their coastlines. In addition, other adverse effects of climate change are also having an impact on the environment and livelihoods of the populations of these islands. By way of example, Cape Verde is currently undergoing vast desertification and has an established migratory tradition with close to half of the overall population living abroad (either in the region – with Senegal as the main destination – or in developed countries, mostly in the United States and in Canada), while Haiti is facing massive out-migration due to environmental degradation.

Climate change, environmental degradation and human security

Today, almost 2 billion people in the world depend on fragile ecosystems in arid and semi-arid areas with 90% of them living in the developing world where increasing ecological stresses are threatening livelihoods (Ibid.). In particular, *coastal communities* and mostly poor *rural communities* – largely reliant on arable lands – are the groups facing the most imminent threats resulting from climate change.

Rural households in developing countries most often rely on natural resources sensitive to climate change, such as water supplies and arable land as well as on activities such as arable farming. Some of the implications of climate change for the availability of these natural resources can be seen in decreasing soil fertility, in subsequent lower levels of crop yields, in less viable grazing areas, and in dropping levels of firewood and fishery production – all of which further strain the already limited livelihood options for rural households. In Southern Africa, for example, yields from

rainfed agriculture are expected to fall by as much as 50% between 2000 and 2020, according to the IPCC Working Group (Watkins 2007: 91).

Rural regions in Latin America are also likely to be affected. In the drier parts of the region, climate change is expected to bring about increases in the saline content of the soil, which reduces crop productivity. With the increasing level of aridness of previously productive land, the continent could also experience greater desertification.

Desertification linked to many factors such as dropping rainfalls and advancing sands has especially dire implications for *subsistence farmers and pastoralists*, increasing incidences of poverty – a key determinant of migration. The sectors of food production and agricultural employment are particularly affected by desertification, directly impacting people's livelihoods. Hence, as a result of declining incomes from agriculture, individuals, families and communities are forced to consider alternative employment options, often in other sectors, and often through migration as an adaptation strategy.

Populations of coastal areas residing at an altitude of less than 1 meter above current sea level are considered directly vulnerable to rising sea levels. A prominent study estimates the size of this group at a considerable 146 million people (Piguet 2008). Mainly concentrated near the major rivers and deltas, the flood zones are very densely populated in South and East Asia. These two regions account for 75% of the population at risk from this phenomenon. The increase in sea levels is arguably the aspect of global warming posing the greatest direct threat to numerous populations (Ibid.).

Cumulative group vulnerability refers to a state of relative disadvantage of a group due to multiple levels of socio-economic limitations and stresses. For example, the poor and less-skilled populations, in addition to residing in vulnerable areas (rural or coastal), are generally most affected by the adverse impacts of climate change given their strained resources and limited options for successful local adaptation. They frequently lack (formal or informal) insurance to limit the impact of environmental shocks, and are also likely to face greater obstacles to internal and international labour mobility, due to their limited access to labour markets.

The capacity and strategies of the most vulnerable groups to address and adapt to climate change are further restricted by various forms of discrimination, injustice and social marginalization. For example, women will tend to be more heavily affected by climate change than men. In many societies where women are traditionally responsible for collecting water, their role is directly dependent on weather conditions. In addition, there are a great number of countries (mostly poor) where women are disproportionately represented in agriculture – with this sector possibly hardest hit. Groups of indigenous people, the elderly, the disabled as well as orphans are also at a greater risk. For example, in Alaska, four coastal indigenous communities (Shishmaref, Kivalina, Shaktoolik and Newtok) are currently faced with a critical situation because of their geographic location on the west coast of Alaska and dozens of others are at risk. Climate-induced sea-level rise and the reduction of sea ice are leading to stronger storm surges and to the erosion of the land on which these communities are situated, forcing the population to relocate. The only available option is migration as there is no higher or distant ground where the communities could move in order to avoid the erosion. Detrimental impacts include those affecting infrastructure and their indigenous way of life (Bronen 2008).

To move or not to move: Is that the question?

The decision for a household to opt for migration as a coping strategy, as well as the form and duration of the migration itself, are dependent on a number of factors, including the following (IOM–MPRC 2008: 28):

- *Economic factors*, such as differences in available financial resources, security of land tenure, relocation costs and employment opportunities in the area of destination;
- *Social factors*, such as family composition, level of social mobility and education;
- *Cultural factors*, such as differences in the cultural costs of moving.

Moreover, those who choose to migrate abroad tend to move to places with existing linguistic, cultural or ethnic ties. Likewise, intercontinental migration may often follow pre-existing paths and/or former colonial relationships. Thus, France is likely to be a destination for migrants from francophone West Africa (Senegal and Mali, for example), while the United Kingdom may be attractive for Pakistanis, West Indians, Nigerians, Ghanaians, etc. (Brown 2008: 23-24). However, it should be remembered that migration is normally *not* the first adaptive response by households and individuals to stresses of climate change, but is rather an option to which they will resort when other means of adaptation are insufficient to meet their basic and immediate needs (Ibid.: 22).

According to some estimates, environmentally induced population movement is largely expected to be internal, as migrants are likely to move, for example, from arable regions or fishable coastal areas within their country. In Burkina Faso, for instance, residents of dry, rural areas are likely to migrate to rural regions with greater rainfall (Hunter 2008). International migration tends to be less common in a period of rainfall shortage, perhaps partly because of the investment required for an international move. In any event, both internal and international environmentally induced migration can take temporary, seasonal or permanent forms.

In some cases, entire households migrate on a short-term basis, waiting for the environmental conditions back home to improve. This applies more specifically to regions where environmental degradation is still reversible. In other cases, some household members migrate, while others stay behind to care for the local livelihoods and property. In particular, young men may be the first to migrate, leaving women in charge of the families and homes left behind. Migrants who find work in destination areas or countries often send parts of their salaries to their families, who may use these remittances for, among other

things, purchasing substitutes for goods previously produced or harvested from the local environment (Ibid.).

While temporary migration as an adaptation strategy to climate change is already a standard practice in many regions, the possibility of actually migrating continues to depend heavily on resources and mobility. This often prevents the poorest members of the community from being prepared and able to migrate. However, where environmental degradation, both man-made and induced by climate change, is particularly persistent and irreversible, migration can become permanent (IOM–MPRC 2008: 28).

Regardless of the varying statistics and models and despite the lack of consensus with regard to terminology, a number of authors have attempted to quantify the potential flows of environmental migrants for the next decades. These efforts are further hindered by the fact that most of this migration is internal, and information on internal migration is even less readily available and reliable than information on international migration. Already in 1994, the *Almeria Statement* estimated that 135 million people are potentially at risk of being displaced as a consequence of severe desertification (Renaud et al. 2007: 17). According to Meyers, 25 million people in 1995 had migrated for environmental reasons, with this number possibly rising to 50 million by 2010 (Ibid.).

The challenge of adequately differentiating between direct and indirect causal links between migration, environmental degradation and climate change is faced by researchers and policy-makers alike.

It is essential for migration issues to be integrated into climate change-related discussions and policies, instead of being considered as an ancillary issue or a negative side effect. We are talking about the future of mankind, nothing less.

Towards an integrated and comprehensive approach to environmentally induced migration

Climate change has an increasingly significant impact on the livelihoods of a growing number of persons, at times posing a threat to their very existence – their fundamental human right to life. Though migration is, for now, just one among many response options to climate stresses, it is gaining importance and magnitude given the swelling numbers of environmentally induced migrants and the comparatively low levels of adaptive capacity of the regions most deeply affected. Moreover, mass migration caused by climate change has various further implications for human well-being such as, for example, the potential of conflict over already scarce natural resources in the area of destination, lack of basic health care services, severe impediments to development, and perhaps, most importantly, the direct threat to basic human rights. Put simply, the *urgency* of the need for action is undisputable.

First and foremost, there is a need for more coordinated and effective interstate and multi-stakeholder cooperation at all levels to address the above-mentioned challenges with countries of origin and destination playing a key role. Civil society, the private sector and non-governmental organizations, in particular, have an important contribution to make, especially in the area of capacity building. In particular, steps should be taken to coordinate efforts of the humanitarian and environmental communities in managing environmentally induced migration through interagency cooperation, dialogue and experience sharing. It is essential for migration issues to be integrated into climate change-related discussions and policies, instead of being considered as an ancillary issue or a negative side effect. We are talking about the future of mankind, nothing less.

Furthermore, there is a need for more policy-oriented and interdisciplinary research in the field with the focus on understanding the causal links and impacts between climate change and migration, as well as current and future scenarios of migratory flows.

Finally, greater comprehensiveness is required for tackling these issues to cover emergency relief and humanitarian assistance as well as preparedness and long-term planning. The strategies aimed at forecasting and preventing major population movements due to severe environmental degradation will need to include observatories and early-warning mechanisms. As for coping mechanisms, mitigation and adaptation strategies should be further developed. The latter might usefully target dry land areas where desertification and migration are underway but not yet established as a pattern. They could also aim at developing the adaptation capacity of people in rural areas (drylands) to alleviate climate impacts as well as improving infrastructure in poor rural areas with the aim to limit the push factors. In particular, support (both financial and through capacity building) should target developing countries – with a focus on the least developed countries – and their populations in order to strengthen their coping capacities and improve the livelihoods of the poorest and most vulnerable communities.

To this end, IOM and several partners, including the UN Environment Programme and the UN University, are launching an Alliance on Migration and the Environment to promote critically needed research and direct project interventions now, to help keep today's migratory pressures resulting from gradual environmental degradation from becoming tomorrow's massive human displacement from extreme environmental events, resulting in huge losses of life, livelihoods and major setbacks for sustainable development.

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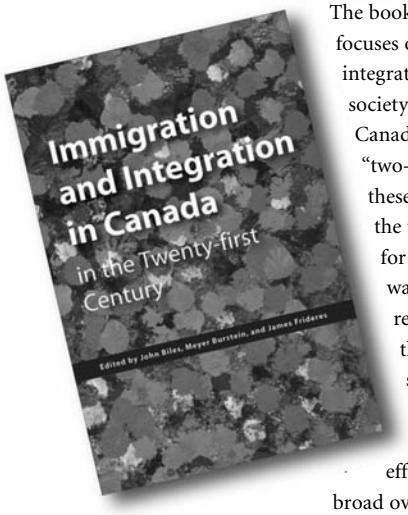
Immigration and Integration in Canada in the Twenty-first Century

Edited by John Biles, Meyer Burstein and James Frideres



The book is divided into two sections. The first section focuses on the social, cultural, economic and political integration of newcomers and minorities in Canadian society. These chapters highlight the responsibilities of both Canadian institutions and newcomers to ensure that the "two-way street" of integration is a success. In each of these chapters, the authors review current literature on the topic and then distill from that practical indicators for measuring relative success on each side of the two-way street. The authors identify concrete and practical recommendations for establishing measures to assess the level of integration of newcomers in Canadian society. The second part of the book addresses the context of various forms of integration and provides the reader with information that reflects on the efforts of integration. These contributions present broad overviews related to the issue of integration.

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