11-15 APRIL 2011 • THE HAGUE • THE NETHERLANDS

WORLD FORESIGHT FORUM

Creating tomorrow

Issue Brief No. 06

Environmental Migration:
Security Implication of Climate Change

www.worldforesightforum.org

World Foresight Forum

Introduction

Climate change is expected to dramatically alter the environment in certain parts of the world and lead to further migration. Thus far, environmental migration has been confined to relatively short distances within the home country or to neighboring countries. When migration is modest and gradual, security risks are minimal, as the receiving country can easily absorb the influx of people. However, climate change will cause migration to reach new levels, becoming more definite and long-range, directed to distant countries. As a consequence, both the developing world, the global south, and the developed world, the global north, will face new security risks and socio-economic challenges, ranging from resource scarcity to conflict. This Issue Brief looks at the impact of climate change on migration and the implications of environmental migration for migrant receiving and sending societies.

Environmental migration is one of the most important challenges of climate change.

Defining environmental migration

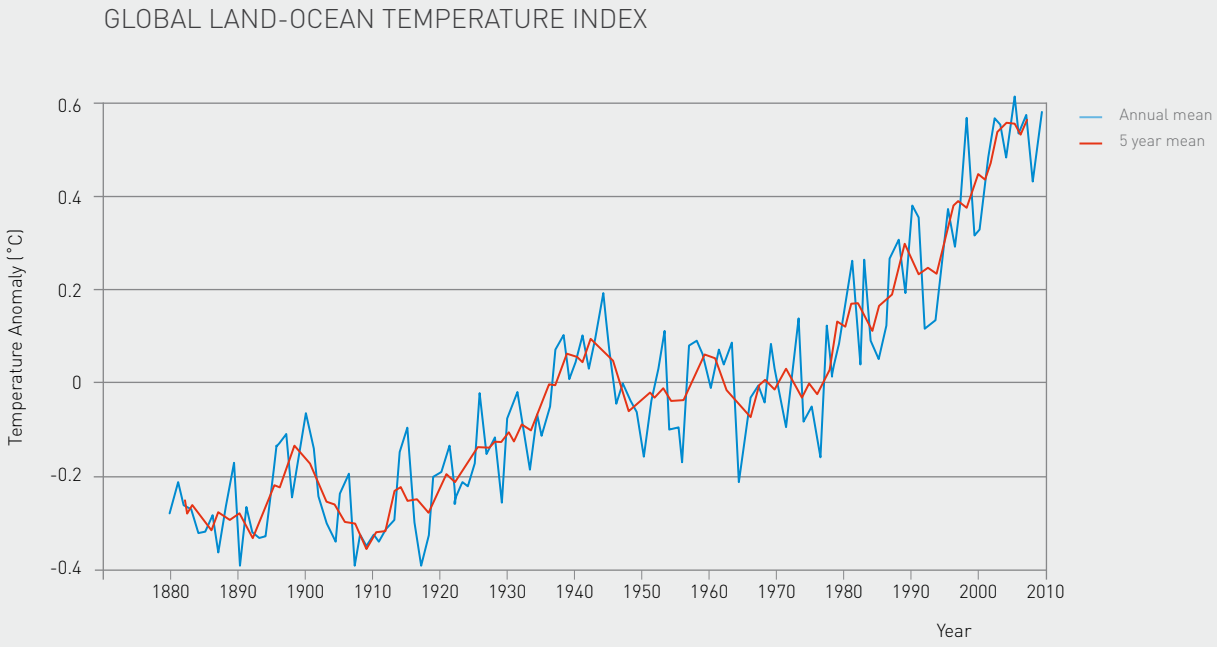
The debate on environmental migration is complicated by a lack of consensus on definitions, which vary according to the different discourses of environmentalists, conflict researchers or migration experts. This Issue Brief will use the generally accepted definition of the International Organization for Migration (IOM) that defines 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." Migration in response to environmental change is not a new phenomenon. In some regions, migration following weather cycles has been part of the social and economic structure for centuries, like nomadic pastoralism in the Sahel. Migration is an effective strategy for coping when people are faced with changes in the environment that undermine the basis of their livelihood, jeopardize their present and future income, and/or have detrimental effects on their health and well-being.

Present estimates of future migration

Estimates on environmental migration vary greatly (see box 1). This is due to the intricacies of measuring environmental migration. Different push and pull factors determine whether someone migrates, making it difficult to attribute migration to a sole environmental cause. Nevertheless, there is consensus that environmental migration will increase in the future. Although there is no discernible trend yet towards large south-north migration, this could change if climate change is not mitigated. In such a scenario, migration from Central America and the Caribbean to North America and from Northern Africa to Europe will increase. Additionally, affluent Persian Gulf States and emerging economies in South-East Asia are likely destinations of future global migration flows.

- Leighton (2006): 17 million environmentally displaced people
- UN High Commissioner for Refugees (2005): 24 million people around the world who have fled because of environmental factors
- Almeria Statement (1994): 135 million people could be displaced as a consequence of desertification
- Lambert (2002): 30 million people displaced by climate change in China alone
- Meyers (2002, 2005): 25 million environmental migrants in 1995, 50 million in 2010, 150 million in 2050
- Brown (2008): 200 million environmentally induced migrants by 2050
- Christian Aid (2007): 700 million people on the move because of environmental factors, or almost 1 in every 11 people living on the Earth, in 2050

Box 1: Estimates on present and future environmental migration



Source: NASA/GISS, "Global Surface Temperature", 12 April 2011

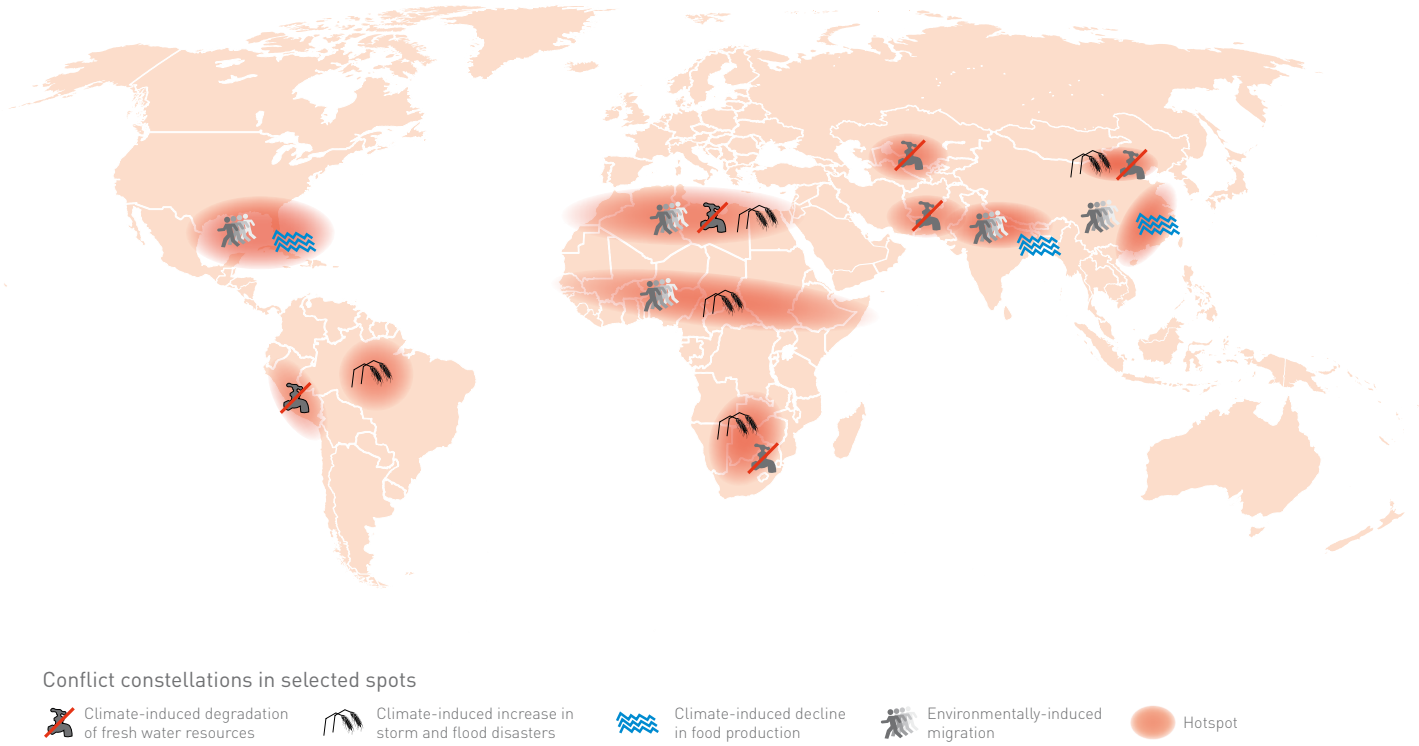
Figure 1: Changes in global surface temperatures

Impact of climate change

Global temperatures have gradually risen over recent decades (see figure 1). The prevailing view is that this trend will continue if we do not act to rein the greenhouse gasses produced by human activities. Rising temperatures will contribute to rapid environmental degradation and render parts of the world increasingly unsuitable to support human life. Potential future effects include rising sea levels, a loss of biodiversity, increased frequency and severity of natural disasters and extreme weather, such as floods, droughts, wildfires and hurricanes, along with water and food shortages. Already, the effects of climate change are visible, for example in rising sea levels. In the last century, the global sea level rose by about 17 centimeters. In the past decade, the rate has doubled. Whereas the impact of global warming can be beneficial to some regions, the Intergovernmental Panel on Climate Change (IPCC) estimates that the net effect will be harmful. The impact of climate change will vary across regions depending on the natural exposure, vulnerability and resilience, and population density. The impact will be the largest in the following four 'hotspots': small island developing states, e.g. in the Caribbean and Pacific, and in Africa, mega-deltas in Asia and the polar regions.

Vulnerability of the developing world

The developing world is most vulnerable to climate change for several reasons. First, people in developing countries are heavily dependent on the environment for their livelihood. In countries that are largely dependent on agriculture, droughts, decreased precipitation, and extreme temperatures are a direct threat to local farmers. The IPCC estimates that in Africa, yields from agriculture could be reduced by up to 50% in some regions by 2020. According to Norman Meyers, a prolific writer on this topic, one third of the 150 million



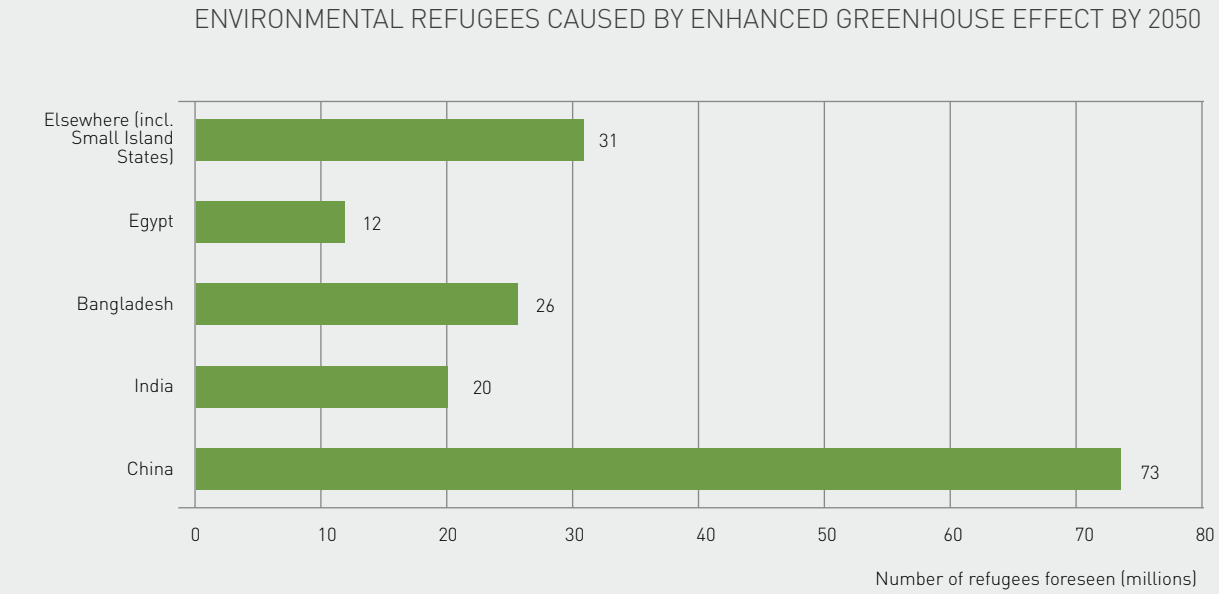
Source: German Advisory Council on Global Change, "Climate Change as a Security Risk", 2007

Figure 2: Climate change security hotspots

environmental refugees caused by climate change will come from agriculturally dislocated areas. Second, 246 million of the world's poorest live in low-lying coastal zones. For example, Bangladesh could lose up to 17% of its land mass due to rising sea levels. The IPCC predicts that in Asia death rates from diseases associated with floods will increase. Third, people in the developing world are less mobile and have less technological and financial means to defend against climate change. Fourth, population growth is high in the developing world, particularly in Africa and Asia. Some projections suggest that Africa's population of 767 million in 1999 will nearly double by 2035. According to the UN, 98% of the projected growth of the world's population by 2025 will occur in less developed regions. Population growth creates additional environmental stress and makes resources more scarce.

Increased risk of conflict

One of the security implications of climate change and environmental migration is the increased risk of conflict. Historically, most conflicts with an environmental element have taken place within countries in the global south. Climate change will increase the occurrence of this kind of conflict, threatening the security of millions. The developed world is less likely to suffer from environmental conflicts. However, in a globalized world, insecurity in the south affects security in the north. The nexus between climate change, migration and conflict can be captured in three models.



Based on N. Meyers, "Environmental refugees: a growing phenomenon of the 21st centrury", 2001

Figure 3: Future environmental refugees caused by climate change

Environmental migration induced conflict

In the first model, there is a direct link between environmental degradation and migration (see figure 4). Migration can cause conflict in three ways. First, migration may burden the economy and resource base of the receiving country and cause competition between immigrants and the native population. Attempts to secure increasingly scarce resources can become violent. Second, tensions can rise when immigrants are of a different ethnicity than the native population. If an ethnic minority is already present in the host country, the native population may fear domination, separatism or unification with the ethnic kin in the home country of the immigrants. In countries with a precedent of ethnic conflict, immigration can upset ethnic balances and threaten precarious stability. Third, migration can cause conflict along other fault lines, such as between rural and urban areas, highly employed and unemployed segments of society etc. In the case of Darfur, for example, millions of refugees fled to neighboring Chad, contributing to additional tensions in this country already destabilized by civil war.

Figure 4: Environmental migration induced conflict

Environmental conflict induced migration

In the second model, the link between climate change and conflict is direct (see figure 5). In this model, climate change causes environmental degradation and resource scarcity, which triggers conflict. The relationship between resources and conflict is well known. Resources have played a role in at least 18 violent conflicts since 1990 and in 40% of all interstate conflict since 1960. In Sudan, for example, drought caused food scarcity

and famine, which were contributory to the civil conflict. At first glance, it can be argued that in this model, people migrate to flee from the violence and can be categorized as refugees of war. However, conflict is merely the transfer mechanism. As environmental degradation is the root cause, this type of migration can still be categorized as environmental migration.

Figure 5: Environmental conflict induced migration

Feedback processes

The third model shows the feedback loops between environmental degradation, migration and conflict, and serves to explain instances in which migration triggers or exacerbates environmental conflict and vice versa (see figure 6). One example is Rwanda, where the impoverishment of the population as a result of soil erosion was an aggravating factor leading to the ethnic genocide in 1994. The migration of Tutsis and Hutus from Rwanda into the neighboring Democratic Republic of Congo following the genocide has had a lasting impact on the conflict there until this day.

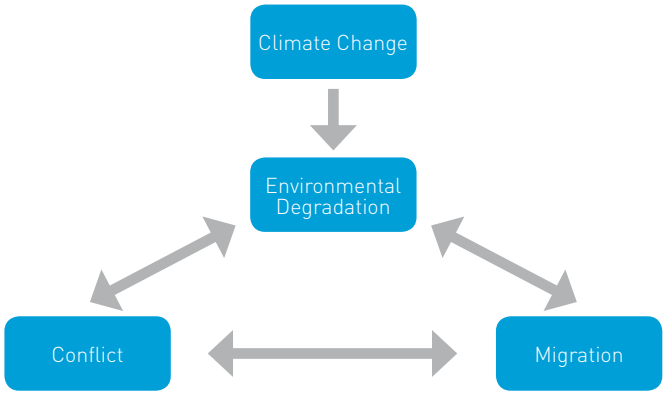


Figure 6: Environmental migration induced conflict

Socio-economic challenges

As a future net receiver of environmental migrants, developed countries will experience increasing difficulty in absorbing immigrants into their economies and societies and in maintaining the welfare state. Fear of environmental migrants may also threaten social order and cohesion as they may contribute to rising xenophobia and nationalist movements (see also WFF Issue Brief on *The Deficit of Liberal Democracy*). The outbreak of racial violence against migrants from the Northern Russian Caucasus in Moscow in 2010 exemplifies how migration can cause social disturbances. As a net sender of migrants, the developing world is threatened by a brain drain. The IOM estimates that Africa has already lost a third of its skilled professionals in recent decades, costing the continent $4 billion to replace them with highly skilled foreign workers. The departure of the most skilled may hamper economic development. In addition, it will increase the global south's vulnerability to climate change, as the brain drain will diminish the technological knowledge and capacity of the population to cope with climate change. In turn, this can exacerbate environmental degradation, conflict and migration.

The New Approach

A global response to environmental migration is needed. First, the vulnerability of developing countries to climate change should be reduced. Developed countries should provide technological assistance, make funds available and lead mitigation efforts. Locally, developing countries should implement measures aimed at adaptation and countering resource scarcity. Old technologies, such as those for agriculture, farming, water and land use, should be replaced with new sustainable ones. In addition, efforts should concentrate on strengthening the capacity of the state in areas such as emergency response and recovery, and by developing early warning systems. Second, public awareness of the security risks and socio-economic challenges of climate change induced migration should be increased. So far, the response of migrant-receiving governments has been mostly focused on how to obviate

Box 2: Poster of the film Climate refugees by Michael Nash

the threat of extensive inflows of migrants by means of restrictive immigration policies. This has contributed to an atmosphere of dislike and fear of foreigners, who are perceived as people coming to "steal resources". Instead, governments of receiving states should take a comprehensive approach to preparing for the future influx of immigrants with a focus on opportunities rather than restraints. For example, policies should be developed to efficiently integrate migrants into the workforce to replace ageing populations. Also, social cohesion would benefit from communicating the message that environmental migrants are people fleeing hardship and need support. This may also foster a sense of international solidarity that is required to move towards more international cooperation in creating local solutions for the humanitarian and security risks of climate change.

This publication is part of a series of WFF Issue Briefs that offer background information on themes to be addressed at the World Foresight Forum. The Issue Briefs aim to inform and stimulate the debate on global challenges. The views and opinions expressed here are those of the authors and do not necessarily express the official views of the WFF or any of its speakers or sponsors.

World Foresight Forum is an initiative of

Authors: Islam Qasem, Teun van Dongen, Marjolein de Ridder

World Foresight Forum (WFF)
Lange Voorhout 16
2514 EE The Hague
The Netherlands

T +31 70 363 6503
F +31 84 215 3165

info@worldforesightforum.org
www.worldforesightforum.org