

# future floods of refugees

A comment on climate change, conflict and forced migration



NORWEGIAN  
REFUGEE COUNCIL

**Author and editor:**

**Vikram Odedra Kolmannskog**

April 2008

**Norwegian Refugee Council**

PO Box 6758 St. Olavs Plass, 0130 Oslo, Norway

Visiting address: Grensen 17, Oslo

[www.nrc.no](http://www.nrc.no)

**Reference group:**

Nina M. Birkeland

Mi H. Christiansen

Anne Huser

Øyvind Nordlie

Mirjam Sørli

Astrid Sehl

Rolf A. Vestvik

**All photos, including the cover photo, used with the kind permission of:**

Marcus Bleasdale/VII

**Layout:**

Stefan Storm Larsen

**Printed by:**

Gamlebyen grafiske as



This publication is printed in an environmentally friendly manner.

**Funded by:**

The Norwegian Ministry of Foreign Affairs

Copyright © Norwegian Refugee Council, 2008

# Table of contents

<b>Executive summary</b> .....	<b>4</b>
<b>Warming up</b> .....	<b>6</b>
<b>The “climate refugees”</b> .....	<b>8</b>
<b>The myriad of factors in forced migration</b> .....	<b>.11</b>
<b>Climate changing migration</b> .....	<b>.13</b>
<b>A climate of conflict</b> .....	<b>.18</b>
<b>“Hotspots”</b> .....	<b>.23</b>
<b>International law and protection</b> .....	<b>.25</b>
<b>Prevention</b> .....	<b>.34</b>
<b>Main conclusions and recommendations</b> .....	<b>.39</b>
<b>References</b> .....	<b>.40</b>

## Abbreviations

EM-DAT – Emergency Events Database  
IDMC – Internal Displacement Monitoring Centre of the Norwegian Refugee Council  
IDPs – Internally Displaced Persons  
IIED – International Institute for Environment and Development  
IOM – International Organization of Migration  
IPCC – United Nations Intergovernmental Panel on Climate Change  
LDC – Least Developed Countries  
NRC – Norwegian Refugee Council  
SIDS – Small Island Developing States  
UNDP – United Nations Development Programme  
UNEP – United Nations Environmental Programme  
UNFCCC – United Nations Framework Convention on Climate Change  
UNHCR – United Nations High Commissioner for Refugees  
WBGU – German Advisory Council on Global Change

## Executive summary

With the certainty of global warming, the term “climate refugees” is gaining popularity in public discourse. There seems to be some fear in the developed countries that they, if not flooded literally, will most certainly be flooded by “climate refugees”. From a forced migration perspective, the term is flawed for several reasons.

The term “climate refugees” implies a mono-causality that one rarely finds in human reality. No one factor, event or process, inevitably results in forced migration or conflict. It is very likely that climate change impacts will contribute to an increase in forced migration. Because one cannot completely isolate climate change as a cause however, it is difficult, if not impossible, to stipulate any numbers. Importantly, the impacts depend not only on natural *exposure*, but also on the *vulnerability and resilience* of the areas and people, including capacities to adapt. At best, we have “guesstimates” about the possible form and scope of forced migration related to climate change.

Climate change will have several impacts on the environment which in turn can impact on forced migration and conflict. Gradual environmental degradation and slow-onset disasters such as drought are likely to increase due to climate change. Most vulnerable are developing countries where large sections of the population live directly from agriculture and many of these from subsistence farming. Importantly, adaptation, involving for example different land-use techniques and livelihood diversification, would lessen the need to migrate. Climate change is also likely to lead to an increase in the frequency and severity of sudden disasters such as floods and storms. Many of the affected are particularly vulnerable (typically poor) people in developing countries. Hence, they have little mobility. Climate change impacts can impoverish them and reduce their mobility even further. As is the case with drought, sudden disaster impact depends on several political and socio-economic factors, including adaptation measures (for example flood defence infrastructure). Forced migration is also likely to result from rising sea levels, and certain low-lying island states may disappear altogether, raising difficult questions of statelessness.

Forced migration can be triggered by – and itself also trigger – environmental conflicts. In transit or at the place of destination, migration can (be perceived to and/or) contribute to a competi-

tion for already scarce resources such as land and water. Most conflicts with an environmental element have historically occurred within countries. The degradation of freshwater resources can trigger competition and conflict. Sudden disasters such as storms and floods often highlight existing domestic problems, revealing weaknesses of the government in power and may thereby exacerbate conflict. Conflict potential normally depends on a range of socio-economic and political factors often similar to those that can trigger forced migration. Governance and the role of the state are often crucial factors. In fact, cooperation rather than conflict may be the response to some environmental challenges.

It is likely that developing countries in lower latitudes will continue in the near future to be the hotspots in several senses of the word. Faced with climate change, there may be some increase in planned migration that is longer-distance, longer-term and more permanent. Increased urbanisation with the possibility of secondary migration can also be expected. But most of the forced migration and conflict related to climate change, is likely to remain internal and regional. While the developed countries bear the main responsibility for climate change, one could question whether the dynamics of climate change, conflict and forced migration can and should be portrayed as a threat image of masses of refugees flooding over western borders. The sad truth is that there will be real floods, and if nothing changes, many of the affected will have little choice but to return and risk further flooding.

From a legal point of view the term climate refugees is also inaccurate. Some authors have suggested amending the 1951 Refugee Convention to accommodate for environmental displacement. Others suggest drafting a separate convention. Resorting to quick-fix solutions of new laws and policies often fulfils an action function, the need to be seen to act, but closer consideration of the existing prevention and protection possibilities may prove helpful before new measures are enacted.

In cases of severe environmental degradation and sudden disasters, the human rights principle of *non-refoulement* could apply. When there is a risk of certain ill-treatment, people are protected against return. A need for international protection could be met by granting humanitarian asylum or another protected status.



Many of the forced migrants are likely to be internally displaced. Disaster displacement is recognised in the 1998 Guiding Principles on Internal Displacement. Those displaced due to more gradual environmental degradation could be considered displaced due to slow-onset disasters, (the lack of) development or as a separate displaced category covered by the descriptive and non-exhaustive definition of the Guiding Principles. Many face challenges and have needs similar to conflict-induced displaced persons, but protection and assistance will largely depend on whether or not international organisations include them in their mandates. While there is often political will, money and media coverage when sudden disasters hit, those who move primarily due to gradual environmental degradation are often less visible. The degree of force in the migration may be considered differently at the different stages of gradual environmental degradation. Particularly for this group, there may be operational and normative protection gaps, internally and internationally, because they risk being considered economic or voluntary migrants.

Existing law and protection possibilities should be further investigated to identify and address potential protection gaps. An approach similar to the one taken with regard to IDPs, with the creation of the Guiding Principles, could be considered. Many of the forced migrants may be included in already existing categories of protected persons, but they may need to be made more visible and recognised within the categories. For the internally displaced persons in general there is still a severe protection deficit that must be better addressed.

If it is better to prevent than to cure, one should also try to deal with the root causes of forced migration and conflict. Adaptation to climate change in developing countries must be made a top priority along with mitigation. Alongside more typical information and infrastructure measures, addressing general factors of forced migration and conflict can contribute to vulnerability reduction and adaptation. A broad approach to climate change adaptation is needed. Hopefully, climate change will foster a new and stronger sense of solidarity. It provides an opportunity for cooperation in addressing global issues such as conflict and displacement.

# Warming up

Migration is one of the oldest coping strategies for dealing with environmental change. Throughout the millenniums people have moved temporarily or permanently during periods of drought and other environmental change. Lately, however, due to the perceived increase in the intensity and scale of environmental change, many people see environmentally induced forced migration as a new type of phenomenon. The fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC)<sup>1</sup> authoritatively establishes that global warming is accelerating and that humans are directly responsible. The warming is unequivocal and evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising sea level. Climate change is expected to have considerable impacts on the environment – first and foremost in developing countries. This, in turn, can trigger conflict and displacement of people.

“Climate refugees” are increasingly referred to in the debate on global climate change. However, the usage of the term seems unclear and at times misinformed. There is a paucity of information about how climate change can trigger migration and what forms of migration one can expect. There is also much confusion about the conflict potential in climate change and forced migration. Finally, there is the question of how the migrants should be treated, particularly as to whether or not the label “refugee” is appropriate. The objective of this report is to shed some light on the dynamics between climate change, conflict and forced migration. Furthermore, it will identify challenges and develop recommen-

dations, both to protect the displaced, and, indeed, to prevent forced migration related to climate change. Hopefully, this report will also contribute to bridging the disciplinary gap between environmentalists and natural scientists on the one hand, and migration and refugee specialists and lawyers on the other.

## The algae, the cloud and the human

In the early 1970s, James Lovelock and Lynn Margulys postulated a hypothesis that has since evolved into what is today known as the Gaia theory: The Earth (Gaia is a mythological name for the Earth Goddess) is a self-regulating system, in which life and its physical environment evolve as a single entity. Their holistic theory met with resistance in reductionist / isolationist science circles, but has with the evidence of climate change become widely acknowledged. How everything is connected, can be illustrated by looking at the algae: Almost all ocean plants are algae. Through a process involving sunlight, they remove CO<sub>2</sub> from the air and emit a sulphide gas. This gas oxidizes in the air to seed the droplets of clouds. Algae cannot flourish in surface waters above 10–12 °C. While the sun warms and lights up, the clouds help to cool the waters. Fossilized algae are the source of petroleum. The petroleum combustion of humans results in the emission of huge amounts of CO<sub>2</sub> that trap heat and create global warming. Humans have now upset the natural self-regulation of Gaia, and Lovelock believes it is time for “sustainable retreat.” We will not be able to kill off Gaia, but Gaia will rid herself of parts of her that are too destructive – humans, unless we make peace with her. According to Lovelock’s predictions, large regions of the planet may become uninhabitable within a few decades, and human civilization itself could well collapse. (See Lovelock, J (2006), *The Revenge of Gaia*, London: Penguin Books.)

## Climate and environment

While weather is the day-to-day state of the atmosphere, climate is the average state of weather over time and space. Mean temperature and the seasonal cycle in temperature over large areas are the clearest signals of change in the climate. Another important indicator is the amount and pattern of rain and snow. Some climate change is natural – that is, not caused by humans – and can be linked to processes on Earth such as volcanic eruptions or external forces such as variations in sunlight intensity. Today, however, the greenhouse gases emitted due to human activity (such as CO<sub>2</sub> through fossil fuel combustion), are the main cause of global warming.

The environment can be defined as the “totality of the surrounding conditions (WordNet, Princeton University).” Changes in climate can impact on the environment and vice versa. Altering the environment by for example deforestation, impacts on the climate because trees and plants cleanse the air of CO<sub>2</sub>. While floods are linked to climate factors such as temperature and rainfall, they do not occur independent of the general environment: human-made environmental change such as deforestation, add to the risk of for example floods. These so-called non-climate drivers include land use, land degradation, urbanisation and pollution. They affect the environment both directly and indirectly through the effect on the climate. In sum, societies change their environments, and thus may alter not only the climate but also their own vulnerability/resilience to climate change impacts.





Photo: Marcus Bleasdale/VII

# The “climate refugees”

Different actors have used the term “climate refugees” to refer to a broad range of situations. Today, it normally seems to imply a focus on climate change and its effects. The broader concept of environmental refugees has a longer history. In the mid-1980s, the issue of environmental refugees was addressed by the International Institute for Environment and Development (IIED) and the United Nations Environment Programme (UNEP). Essam El-Hinnawi suggested a definition.<sup>2</sup> The environmental researcher Norman Myers was prominent in popularising the term amongst high-profile officials such as former US President Bill Clinton and former UN Secretary-General Boutros Boutros-Ghali. Naturally this also facilitated its adoption by the media. A search on Google results in almost half a million listings on “environmental refugees”, and the term “climate refugees” is quickly catching up.

## Examples of usage

*The strong currency makes life even better under the sun for Norwegian climate refugees.*

(Norwegian newspaper Dagbladet on Norwegian senior citizens who choose to settle under the Spanish sun, 2002 (Author’s translation from Norwegian), <http://www.dagbladet.no/dinside/2002/07/08/341679.html>)

*The first massive movement of climate refugees has been that of people away from the Gulf Coast of the United States.*

(Earth Policy Institute in Washington describing the flight of hundreds of thousands from Hurricane Katharina in September 2006, [http://www.earth-policy.org/Updates/2006/Update57\\_printable.htm](http://www.earth-policy.org/Updates/2006/Update57_printable.htm))

*If Norway is going to receive as many climate refugees as we create, we will have to open up for half a million in 2050.*

(General Secretary, Norwegian Church Aid, at a security conference, January 2008 (Author’s translation from Norwegian), <http://web3.aftenbladet.no/lokalt/article574018.ece>)

## Definitions and typologies

Two of the most well known definitions of environmental refugees are those of El-Hinnawi and Myers.

Environmental refugees are:

- “people who have been forced to leave their traditional habitat, temporarily or permanently, because of a marked environmental disruption (natural and/or triggered by people) that jeopardised their existence and/or seriously affected the quality of their life. By ‘environmental disruption’ in this

definition is meant any physical, chemical and/or biological changes in the ecosystem (or resource base) that render it, temporarily or permanently, unsuitable to support human life.” (El-Hinnawi, 1985)<sup>3</sup>

- “persons who no longer gain a secure livelihood in their traditional homelands because of what are primarily environmental factors of unusual scope.” (Myers and Kent, 1995)<sup>4</sup>

A fundamental difficulty in dealing with this topic, however, is that there is still no agreed definition and typology of environmental refugees or migrants – and even less so in the case of the so-called “climate refugees”. Some events or phenomena relating to the environment that may lead to migration and provide the basis for a typology, include the following:

- 1) Natural disasters / sudden disasters
- 2) Gradual environmental degradation / slow-onset disasters
- 3) Environmental conflicts
- 4) Environmental destruction as a consequence of or as a weapon in conflicts
- 5) Environment conservation
- 6) Development projects (such as dam construction)
- 7) Industrial accidents (such as Bhopal and Chernobyl)

There may be even further sub-categories based on distinctions such as:

- A. Human-made or natural change
- B. Climate change-induced or all environmental change
- C. Temporary or permanent environmental change
- D. Temporary or permanent migration
- E. Internal or international/cross-border migration

Of course, it matters little for the people affected if a disaster is related to human-induced climate change or not, but for some research and policy purposes this may be a useful distinction. In the following, this report concentrates on human-induced climate change and its consequences for forced migration and mainly addresses points 1, 2 and 3.

## The game of name and numbers

According to a report published by the Internal Displacement Monitoring Centre of the Norwegian Refugee Council (IDMC),



## Environmentally displaced persons and environmental migrants

The term “environmentally displaced persons” would be contrary to “climate refugees” and “environmental refugees” not being dependent on location and could be used to describe those that are internally displaced as well as the refugees.

“Environmentally displaced persons” has been defined as “persons who are displaced within their own country of habitual residence or who have crossed an international border and for whom environmental degradation, deterioration or destruction is a major cause of their displacement, although not necessarily the sole one.” (Environmentally-Induced Population Displacements and Environmental Impacts Resulting from Mass Migration. International Symposium, Geneva, 21–24 April 1996. International Organization of Migration (IOM)).

While this term emphasizes the force element, IOM has suggested a broader 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.” (Opening statement of Brunson McKinley, Director General, IOM, Conference on Climate Change, Environmental Degradation and Migration: Addressing Vulnerabilities and Harnessing Opportunities, Geneva, 19 February 2008).

there is no overarching organisation collecting or collating statistics on non-conflict displacement.<sup>5</sup> Figures for the number of environmental refugees worldwide vary depending on the definition and the source of data. Some estimates are alarming. Norman Myers claims that there were already at least 25 million environmental refugees in the mid-1990s, and that we can expect 50 million by 2010 and up to 150 million by 2050.<sup>6</sup> Myers has been much cited, but his theories have also been criticized for being inconsistent, impossible to check and failing to take proper account of opportunities to adapt.<sup>7</sup> To better understand this use of names and numbers, one can look closer at the different agendas and discourses.

The term “environmental refugees” may at first have served a humanitarian agenda. It was introduced before internally displaced persons (IDPs) were recognised as a group with rights to protection and assistance. In the 1980s, the environment was high on the international political agenda and refugees were generally perceived as being innocent victims in need of help. Thereby, the term may have helped direct international attention to for example the drought-affected internally displaced in Sudan.<sup>8</sup> Today, the internally displaced are recognised as a group of forced migrants, and depoliticising the complex causes of crises such as famines is no longer considered necessary.

Kibreab argues that the continued use of the term may relate to the agenda of those who wish to further restrict asylum laws and policies in the developed countries: Because “environmental” can

imply a sphere outside politics, environmental refugees may be treated in much the same way as so-called economic migrants.<sup>9</sup> This speculation does not fit well with the fact that most literature on environmental or climate refugees today argues for an extension of international law, protection and assistance to cover this group. Although it may not be the intention of these authors, however, the use of the term can, nevertheless, have unfortunate side-effects: It may benefit actors trying to restrict asylum policies so long as there is not a public consensus to extend protection and assistance while there is increasingly a public misperception that many of those seeking asylum are so-called environmental migrants and not refugees entitled to protection by law.

Arguably, the prevalent use of the term today is linked to the agendas of environmentalists, conflict researchers and a heterogeneous group of security people. The estimated numbers of climate or environmental refugees are often used to sensitise public opinion and decision-makers to the issue of global warming. There seems to be some fear in the developed countries that they, if not literally flooded, will most certainly be flooded by the “climate refugees”. With the end of the Cold War, attention shifted away from super-power rivalry, and the environment as a potential cause for conflict and forced migration has provided new material for conflict and security researchers. By “securitizing” the issue of climate change, environmentalists and others may have succeeded in getting it on the international agenda and into the minds of decision-makers. On the other hand, the security discourse can serve to make new areas relevant for military

considerations and promote repressive tendencies. A fundamental critique is found in the context of north-south discourse where “environmental security” is seen as a colonisation of the environmental problems, suggesting that the underdeveloped south poses a physical threat to the prosperous north by population explosions, resource scarcity, violent conflict and mass migration.<sup>10</sup>

The environment and security discourse may not see the problem entirely from the perspective of the so-called environmental or climate refugees themselves. The concept of environmental or climate refugees, including speculations on their numbers and the threat they pose, can be instrumentalised for purposes other than the protection of and assistance to the forced migrants. The term is most often used in plural, suggesting threat images of floods of refugees. The use of plural also indicates the challenges of identifying the individual climate or environmental refugee. Interestingly, there is a divide within the literature between environmental and conflict researchers on the one hand, including Norman Myers and Thomas Homer-Dixon, and migration and protection specialists, prominently Richard Black, on the other. The main criticism from Black relates to both parts of the term environmental refugee: “environmental” assumes that the migrants in question have moved as a direct consequence of environmental factors; “refugee” is legally inaccurate and suggests that the migration was forced and involved persecution and thereby a strong need for international protection.<sup>11</sup> The same criticisms can apply in the case of “climate refugees”, but the criticised assumption is then that climate change, with a somewhat narrower range of environmental factors, is the main cause of the migration. While looking closer at these criticisms in the context of climate change, this report aims to be a cross-disciplinary discussion in the sense that concepts and research from both migration and refugee studies as well as environmental (and climate) and conflict studies will be drawn upon.

- One should be cautious when dealing with the estimations of numbers of “climate refugees” since there is not one common definition and the names and numbers are coloured by different discourses and agendas (such as the environmentalist, security, protection etc.)

# The myriad of factors in forced migration

Migration is normally considered a general term, covering all forms of movement taking place voluntarily or involuntarily and across or within national borders. In one sense we are all migrants of some sort, and place is a question of time. According to the International Organization for Migration (IOM), there are approximately 192 million international migrants today.<sup>12</sup> More people are on the move now than at any other time in history. In order to better consider the validity of the assumption of force and causality between climate change and migration, one needs to look closer at factors influencing why people move.

Humans are not entities that can be understood easily within the natural science reductionist / isolationist cause-and-effect framework. Migrants should no more than others be reduced to and seen as mere passive victims. There is a myriad of factors in a person's life that may motivate him or her to act in one way or another and the degree of force will vary. In a fundamental sense, there is perhaps always a choice of how to respond to the circumstances (for example one can always surrender to death), but the voluntary-forced dichotomy has been a commonly used distinction in migration studies and it also has legal implications. In reality this distinction will often be blurred, and describing force along a continuum may be more appropriate.

Displacement usually describes a situation where people have been uprooted from their home by an external event or process that they have little or no control over.<sup>13</sup> A form of displacement will often be part of the “forced” element of forced migration, while the “migration” element acknowledges the agency of forced migrants. In addition to debates about broadening the definition of displacement, there is also disagreement about when displacement should be considered to have ended. According to UN Secretary-General Ban Ki-moon, displacement is “arguably the most significant humanitarian challenge that we face.”<sup>14</sup>

There has always been a link between the climate and the environment on the one hand and human migration on the other. Despite this history and the present media focus, the amount of research on these links by migration specialists is still rather limited. Much of this migration is internal and affects developing countries, the south, while researchers have prioritised international and north-south migration. The scarcity of research may also be on account of what can be called the “economic para-

digim” and the “political paradigm” in explanations of migration.<sup>15</sup>

In recent years the environmental factor has become more recognised as one factor among many that may influence migration. Most researchers today agree on the multi-causality of all migration, including forced migration. Even in the middle of civil war in Angola, Nina M. Birkeland found that displacement had complex causes.<sup>16</sup> Lack of access to health care and education, lack of infrastructure and environmental degradation were some reasons mentioned by the displaced themselves.

Importantly, not all migration related to environmental change is necessarily forced migration. Migration is one of the oldest coping strategies for dealing with environmental change. Particularly in semi-arid regions such as the Sahel (the area between Sahara and the more fertile region in the south), there are traditions of migration such as nomadic pastoralism and long-distance trade. Much of this migration is internal and temporary following weather cycles. Where people have a history of crossing borders, it may be considered legitimate and legal due to custom and tradition, but the control of borders has increased drastically in the last decades. Having looked at case studies and historical material from the Sahel, Black concludes that much of the migration could be seen as an essential part of the economic and social structure of the region, rather than forced migration caused by environmental degradation.<sup>17</sup>

Migration can depend both on personal characteristics of the affected individuals and on various other external conditions. Vulnerability can be defined as the “susceptibility of individuals and societies to such hazards as conflict and climate change, and their capacity to plan for, adapt to and resist changes in their environment and living conditions.”<sup>18</sup> The degree of vulnerability and resilience is contextual and depends on socio-economic condition (poverty often makes people vulnerable), gender, age, disability, ethnicity, the realisation of human rights and other criteria that influence people's ability to access resources and opportunities. Factors often overlap or reinforce each other: families' economic vulnerability may be increased by the regional economic structure or activity, such as unequal rights of ownership or the absence of social security arrangements.<sup>19</sup> Migration is significantly determined by the role of local and national



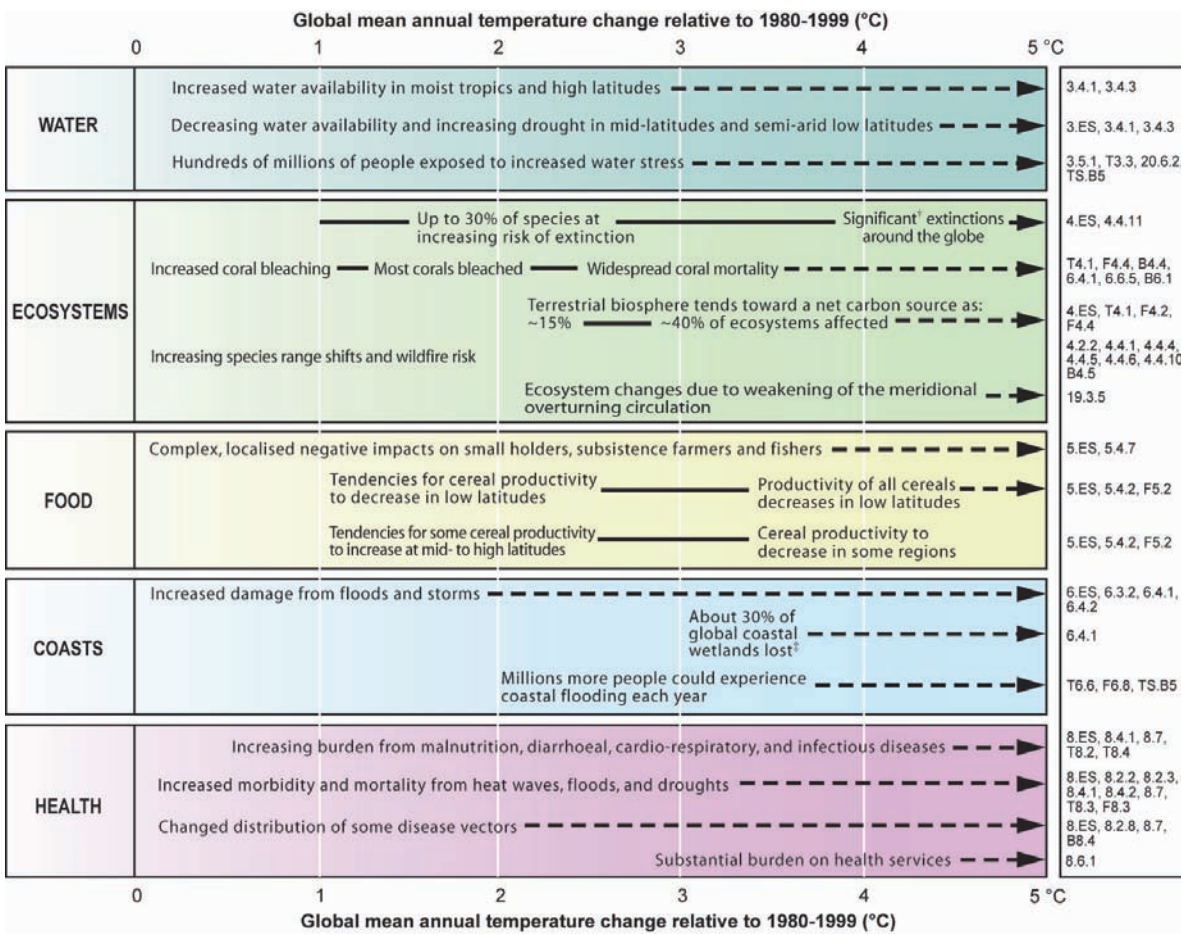
institutions, which in turn can be influenced by global socio-economic and political factors.

The term "climate refugees" implies a mono-causality rarely found in human reality. No one factor, event or process, inevitably results in migration. This is not to downplay the importance of climate change and its effects. Although there is no direct causality between the environmental factor and forced migration, it is a relevant factor and a root cause that migration specialists must take more into account. When it comes to environmental

and conflict research, there is a corresponding need to import the rest of the relevant factors and see the environmental factor in the full social, political and economic context. This would result in a more realistic picture of future migration related to climate change.

- The term "climate refugees" implies a mono-causality, while in migration there are degrees of force and a complex set of influencing factors.

### Key impacts of climate change



Source: Intergovernmental Panel on Climate Change IPCC (2007)

† Significant is defined here as more than 40%.

‡ Based on average rate of sea level rise of 4.2 mm/year from 2000 to 2080.

# Climate changing migration

There are great methodological challenges in combining climate and migration models. Because of the multi-causality of migration, calculating the population at risk from climate change impacts is a long way from predicting mass flight. This relates to an important difference in methodology between the migration specialist Black and the environmental researcher Myers. While Black looks for the links between the environment and migration in specific cases, Myers has focused on broad-ranging global prognoses, including those of the IPCC, which have less direct applicability on local levels where adaptation and other factors will have an influence. Where Myers does look at specific cases, the argumentation appears largely deductive and reductionist / isolationist: country x has environmental problems and also large numbers of migrants, so there must be a causal link.<sup>20</sup> Correlation does not mean that there is necessarily a positive correlation, however, and even less that there is causality. It would be rash to base predictions on such evidence and methodology.

Particularly when it comes to counting the “new” migrants it is important to keep in mind the general demographic trends. According to a 2008 paper by Black and others, global population is projected to rise to around 9 billion by 2050.<sup>21</sup> If international migration remains at 3% of the world’s population, it means that number-wise it will rise to 275 million by 2050. Furthermore, the young and those living in urban areas, are generally more likely to migrate, and an increase of these groups is expected.

Naturally, the impacts will be most significant when the different factors of migration, demography and climate change coincide. Importantly, the climate change impacts depend not only on natural *exposure*, but also on the *vulnerability and resilience* of the areas and people, including capacities to adapt. Who are left to live in areas that are most exposed to hazards in the first place? Often people know about the risks, but urbanisation and poverty may force the most vulnerable to accept them. In the 2008 paper, Black and others stress that economic losses associated with climate change can make people even more vulnerable and prevent many potential migrants from investing in long-distance migration. One can expect an increase in the internal and regional migration.

In the following, some of the expected climate change impacts are considered, comparing them where possible to past experiences,

in order to “guesstimate” in more detail about the possible form and scope of this future migration. The most extreme climate change scenarios are based on climate change tipping points or thresholds that could have devastating consequences such as the accelerated melting of the Greenland ice sheet with an associated rise in sea level and weakening of the Gulf stream. Along with these extreme and more unpredictable scenarios, effects of global warming on health and economic life that may have additional consequences for migration, are also left aside. Sudden disasters such as storms and floods; drought and impacts on food and water; and sea level rise as forecast by the IPCC for the end of the 21st century, appear highly relevant for “guesstimates” on migration. It is difficult, if not impossible, to attribute specific events to climate change, but it is clear that climate change will increase the exposure of already vulnerable areas and people to natural disasters and severe environmental degradation.

## Disasters and displacement

A disaster can be defined as “a situation or event, which overwhelms local capacity, necessitating a request to national or international level for external assistance; an unforeseen and often sudden event that causes great damage, destruction and human suffering.”<sup>22</sup> Among natural disasters some authors distinguish between sudden impact disasters (for example floods, earthquakes and landslides), slow-onset disasters (for example drought and desertification) and epidemic diseases (for example cholera and malaria). Among human-made disasters some authors include so-called complex emergencies which can have multiple contributing factors such as conflict *and* natural disaster. An overwhelming majority of those affected by natural disasters every year (possibly as many as 98 percent) is affected by weather-related (hydro-meteorological) disasters, such as floods or droughts.<sup>23</sup>

Every year millions of people lose their homes and belongings in disasters, either directly through the destruction of their homes or as a consequence of being evacuated from affected areas for their own safety or to facilitate emergency relief operations. The evidence for actual numbers of “displaced” as opposed to “affected” persons is disputed, though. In the most authoritative reports from the Emergency Events Database (EM-DAT) and the International Federation of the Red Cross and the Red Crescent Societies (IFRC), numbers of “fatalities” and “affected”



are presented, but there are no separate statistics on “displaced”. Some would say affected is synonymous with displaced in these cases, but often disaster displacement is more limited in both space and time and has characteristics distinguishing it from other forms of displacement.

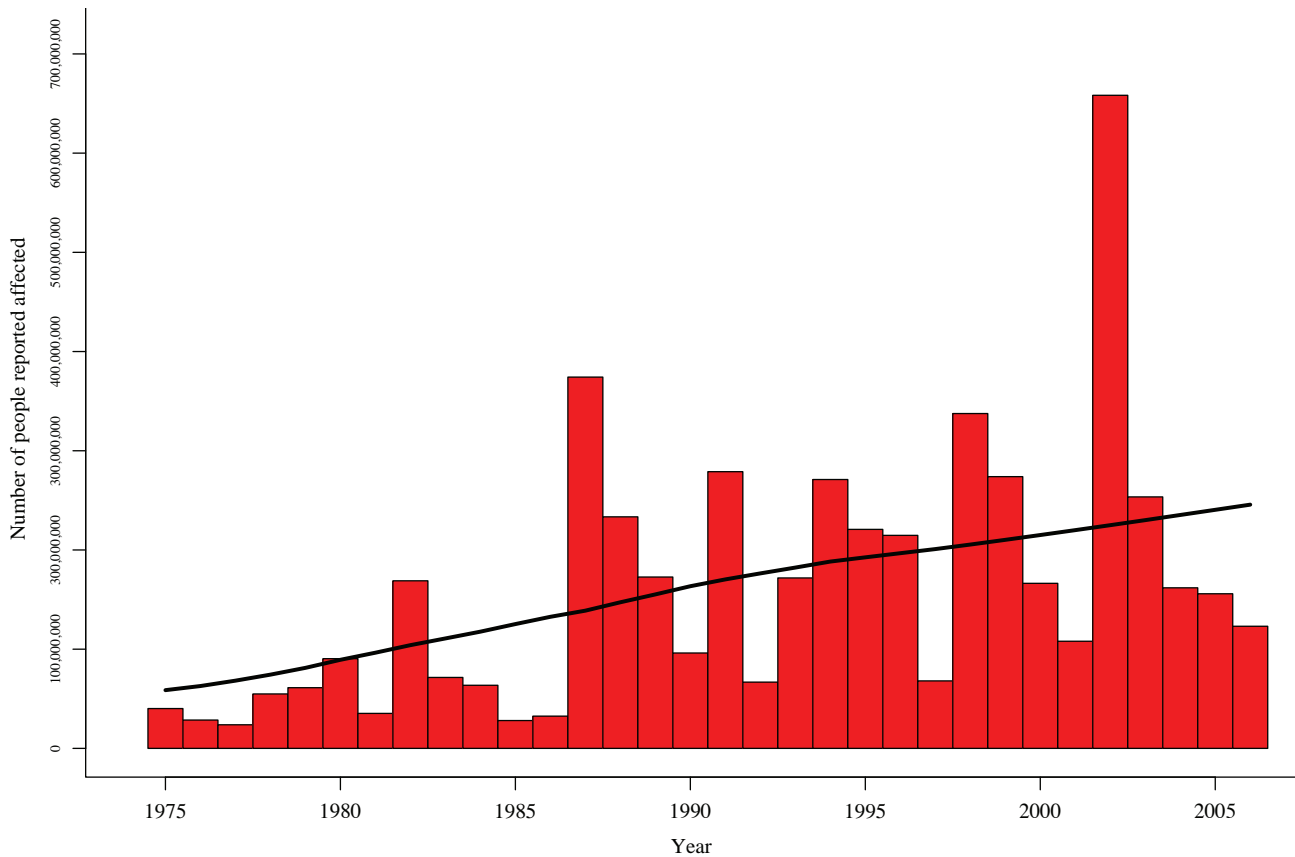
**Sudden disasters such as storms and floods**

According to the disaster database EM-DAT, more than 9000 people are killed and more than 115 million are affected by floods on average every year.<sup>24</sup> Over the last decade, more than 96 percent of the affected lived in Asia. In the same period, the number of reported floods has strongly increased, and with cli-

mate change there is a high likelihood of a further increase in frequency and severity.<sup>25</sup> According to the IPCC, climate change is likely to result in sea level rise and more intensive storms and heavy precipitation. This will greatly increase the risk of disasters occurring, especially in heavily populated coastal zones. This risk is further amplified by deforestation along the upper reaches of rivers, land subsidence in urban areas (due to abstraction of groundwater and heavy loading) and the ever greater concentration of populations.

According to some authors, natural disasters may become a major cause for longer-distance, longer-term migration in Bangla-

**Number of people reported affected by natural disasters 1975–2006**



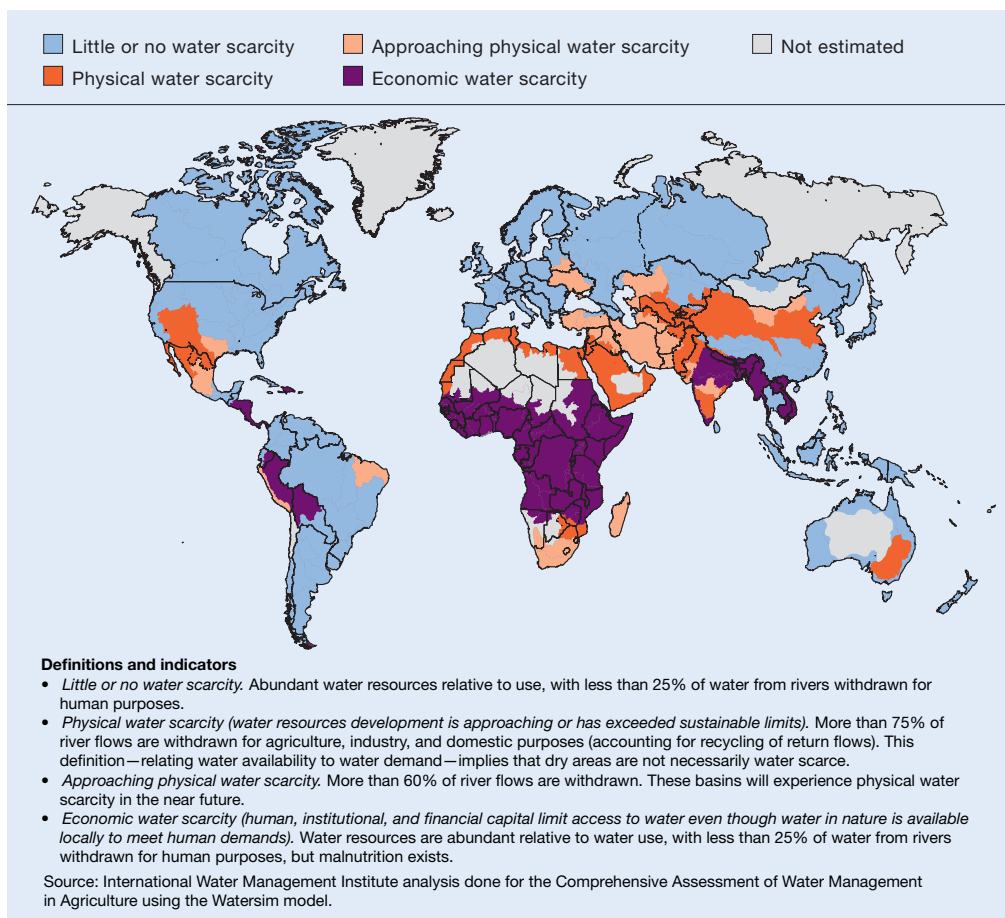
EM-DAT: The OFDA/CRED International Disaster Database – www.em-dat.net – Université Catholique de Louvain, Brussels – Belgium

desh.<sup>26</sup> Neighbouring India is already building a fence-wall along the border. The displacement considered most typical of sudden disasters is short-distance and often temporary however. Most of the affected are particularly vulnerable (typically poor) people in developing countries. Hence, they have little mobility and the majority return as soon as possible to reconstruct their homes in the disaster zones.<sup>27</sup> Climate change impacts are likely to impoverish and may reduce their mobility even further. The longer-term effects of sudden disasters, such as the loss of livelihood opportunities, can also trigger migration similar to that triggered by drought and slow-onset disasters.

### Drought and impacts on freshwater and food production

Hundreds of millions of people are currently without access to safe drinking water, and the demand is increasing due to the world's growing population and mounting aspirations. The IPCC report predicts a decrease of rain in the already semi-arid to arid sub-tropics, increasing evaporation, rising sea levels resulting in salinization of coastal groundwater, and glaciers (in for example the Himalayas) melting away. According to the report, water problems could affect 74 to 250 million people in Africa by 2020 and more than a billion people in Asia by the 2050s. Food insecurity in the lower latitudes will also increase with temperature rise.

## Areas of physical and economic water scarcity



*Water for Food, Water for Life: A Comprehensive Assessment of Water Management in Agriculture.* London: Earthscan, and Colombo: International Water Management Institute, 2007.

The land degradation is reinforced by desertification, erosion, soil salinization and water scarcity. Most vulnerable are developing countries where large sections of the population live directly from agriculture and many of these from subsistence farming.

Drought as any other disaster is a complex phenomenon, but for some it is always more comfortable to seek explanations in nature's vagaries. In reality, however, many areas today experience agricultural drought without there being meteorological or hydrological drought. On the contrary, the areas may in fact have an abundance of rainwater, but the poor still suffer acute drought because available water resources are colonised by the powerful. Not "everyone loves a good drought", but there may be quite a few people with vested interests in the national and international drought industry: Droughts sell well and funds are made available for everyone from politicians to private contractors.<sup>28</sup> While not losing eye of climate change, it is still necessary to distinguish between economic and physical water scarcity and consider closely how droughts and other disasters are human-made. The climate and environmental factor should not overshadow other and often intimately inter-linked political and socio-economic factors of migration and conflict. We should keep in mind Amartya Sen's famous statement that there has never been serious famine in a country with a democratic government and a free press.<sup>29</sup> The Irish Potato Famine is but one among many historical examples to support this statement.

The migration literature is rather divided on the issue of drought-related migration.<sup>30</sup> On the one hand, there are many historical examples of mass population movements during droughts. In the early 1900s, when severe droughts affected the West African Sahel, millions of people migrated southward. On the other hand, many migration specialists claim that the lack of drinking and irrigation water normally generates gradual migration which is only one (often the last) of several coping strategies considered. Thus, the element of force or when the migration must be considered forced, may also be less clear than in sudden disasters. Long-distance and permanent migration may in some cases actually decrease because of increased impoverishment.

### **The increase in sea level**

The sea level is expected to rise due to water expansion (because of higher temperatures) and melting ice. According to one IPCC

emission estimate (scenario A1B), the sea level could increase by almost half a meter by 2100. More than 600 million people live in low-lying coastal zones. Out of this number, 438 million live in Asia and 246 million in the poorest countries of the world. The flood zones are particularly populated in South Asia (with the Indus and Ganges-Brahmaputra) and East Asia (Mekong and Yangtze). If effective measures of mitigation and adaptation are not taken, large numbers of people may have to migrate. Such migration is most likely to manifest itself gradually as a response to the (most likely) long-term process of sea level rise. The element of force or when the migration must be considered forced, may therefore not always be clear. (The particularities of submerged island states are dealt with later as a question of international law and protection.)

- Climate change is likely to lead to an increase in the frequency and severity of sudden disasters such as floods and storms, triggering an increase in short-term, internal and regional displacement particularly in Asia.
- Drought and physical water scarcity is also likely to increase, triggering gradual, internal and regional migration particularly in Africa and Asia. The element or degree of force may be unclear.
- Climate change is likely to result in a rise in sea level, triggering an increase in gradual migration particularly in Asia. The element or degree of force may be unclear.





Photo: Marcus Bleasdale/VII

# A climate of conflict

Some argue that climate change will trigger environmental conflicts that in turn trigger migration. There are also those who argue that migration may in itself trigger environmental conflicts. The two conflict constellations relating to the environment and migration can be simplified as the following:

- 1) Climate change impacts on the environment -> conflict -> migration
- 2) Climate change impacts on the environment -> migration -> conflict

There has been scientific research into environmental conflicts since the 1970s. A recent development, however, is the security discourse and the emphasis on climate change. In April 2007 climate change and security was brought up for the first time in the UN Security Council by the UK Foreign Secretary Margaret Beckett who compared the situation to the looming threat of war before 1939, and claimed that “an unstable climate risks some of the drivers of conflict such as migratory pressures and competition for resources – getting worse.” The same month some high-ranking retired US generals released a report claiming that climate change poses a serious threat to US security by its impacts on extremism and terrorism in unstable regions.<sup>31</sup> Since then there has been a mass production of studies claiming that climate change may turn out to be the greatest threat to both national and international security.<sup>32</sup> The framing of climate change in a conflict discourse, culminated of course in October 2007 when Al Gore and the IPCC won the Nobel Peace Prize.

*Extensive climate changes may alter and threaten the living conditions of much of mankind. They may induce large-scale migration and lead to greater competition for the earth's resources. Such changes will place particularly heavy burdens on the world's most vulnerable countries. There may be increased danger of violent conflicts and wars, within and between states.*  
(Excerpt from the Nobel Committee's explanation for the award of the 2007 Nobel Peace Prize)

The two main schools of thought in environmental conflict research are the neo-malthusians and the cornucopians.<sup>33</sup> The neo-malthusians, among them Thomas Homer-Dixon,<sup>34</sup> claim that population growth leads to over-consumption of resources, resource degradation, and finally scarcities, resulting in violent competition. Myers operates with premises that are similar to the neo-malthusian.

The cornucopians, on the other hand, emphasise the role of technology, human ingenuity and cooperation in overcoming scarcity. Cooperation rather than conflict may be the response to environmental challenges. Some researchers, among them Nils Petter Gleditsch,<sup>35</sup> claim that it is abundance rather than scarcity of resources that often leads to conflict – because rebel groups draw funding from the exploitation of natural resources and / or it is a conflict about the control of valuable resources. Black seems closer to the position of the cornucopians. While Somalia, Rwanda and Haiti are used as examples by the neo-malthusians, those who claim abundance, rather than scarcity, fuels conflict point to countries such as the DR Congo, Sierra Leone, Nigeria, Angola, Algeria, and Colombia.

Approaching the issue of climate change with the premise that it leads to violent conflict may be an obstacle to a more precise examination of the processes and adaptive mechanisms and strategies involved. It is axiomatic that conflict, as such, is not necessarily a problem. Conflicts can be productive and linked to social progress. What matters is how the conflicts are handled so that they do not become violent. In general, the role of the state and adaptive capacity are crucial for whether violent conflict breaks out or not. A consensus remains in environmental conflict research regarding the main findings on multi-causality, locality and the role and capacity of the state and society. Unsurprisingly, these are similar to the conclusions regarding forced migration:<sup>36</sup>

- The environment is only one of several inter-connected causes of conflict and is rarely considered to be the most decisive factor.
- The conflicts believed to involve an environmental element, have mostly taken place within a country (intrastate conflicts).
- The role of the state, and more generally society's problem-solving capacity, is crucial. In places where political and societal institutions are weak, there is a higher probability of conflict occurring.

## Causes of conflict

Due to the multi-causality of conflicts, the major factors that are generally considered important in escalation or de-escalation of conflict should also be taken into account. There is widespread unanimity that countries especially prone to violent intrastate conflict have at least one – though generally several – of the following characteristics:

- They are **anocratic** (neither clearly democratic nor clearly autocratic). While democracies permit the expression of opinions and autocracies effectively prevent and suppress uprisings, anocracies do not permit expression of opposition yet cannot suppress it effectively.
- They have **weak state structures and capacities**. Ineffective management of the state monopoly of violence, will for example make the state more vulnerable.
- They do badly when it comes to **economic performance and distributive justice**. Some researchers believe there is a linear causality – i.e. the higher per capita economic performance, the lower risk of conflict – while others see a non-linear dynamic and claim that economic growth in very poor countries can actually give rise to political instability while growth causes a reduction of such risk in already rich countries. The distribution of economic prosperity seems undoubtedly relevant: States where the gap is large between the most affluent and the poorest, are prone to conflict. In this regard some authors emphasise the importance of land rights and land use systems in agriculture-based economies. The existence of natural resources and how these are used are a crucial factor.
- They have a large **population** and/or a high population density. Some see a high population growth in combination with a scarcity of utilizable land as a decisive factor. Cultural and ethnic differences do not necessarily increase the risk, but collective identities can be instrumentalized for political purposes. Thus the real danger is in deliberate political exploitation of such differences.
- They have **rough terrain**. This may function as defensive cover for rebel groups.
- They border on a **neighbouring country in which a violent conflict** is being waged. Such a location has the risk of overspill because of infiltration, provision of rebel cover, refugee movement, so-called ideological infection and feelings of solidarity.
- They have **recently experienced violent conflict** on their own state territory.

The research shows that interstate conflicts and wars are likely to occur above all when:

- There is a conflict of interest **between a democracy and an autocracy**. Democracies will seldom wage war against each other.
- **Territorial conflicts** become virulent.
- A **balance of power** exists between states (or an existing imbalance of power decreases).
- No or only few (economic, political etc.) **interdependencies** exist.
- The countries are **neighbours**.
- They have a **history of violence**, i.e. the conflicting parties have already been in conflict or at war in the past.

(Based on the presentation of causes of conflict in *Climate Change as a Security Risk*, German Advisory Council on Global Change (WBGU), London, 2007.)

## Environmental conflict influencing migration

Forced migration can be triggered by environmental conflicts. In this case the link between the environmental factor and forced migration is indirect. Initially the environmental change results in violent conflict, and only in a second phase are the affected forced to flee due to the violence. These migrants appear to fall into the category of persons fleeing generalised violence (often popularly referred to as war refugees). The environment may be seen as a root cause, however, and from this point of view conflict can be interpreted as the transfer mechanism.

There are several climate change-related conflict constellations that can result in migration. The climate change impacts that can impact on migration, are also relevant for considering conflict potential, and again one can draw upon historical examples in

the speculations and predictions. Furthermore, conflicts themselves often exacerbate environmental degradation which may as already demonstrated, result in migration. These vicious circles make the isolation of different factors difficult.

## Sudden disasters and conflict

As a rule, sudden disasters tend to heighten dissatisfaction with the ruling government.<sup>37</sup> Weak and/or unsatisfactory state structures are exposed during and after disasters. When a devastating typhoon hit Bangladesh in 1970, the country was part of Pakistan and dominated politically and militarily by (West-)Pakistan. The trifling aid and apparent indifference of central political leaders strengthened the Bangladeshi separatist movement. Pakistani oppression of the movement eventually led to civil war and independence for Bangladesh in 1971.<sup>38</sup> Hurricane Katharina

(in the USA in 2006) illustrated that not only what we normally think of as developing countries, have their weaknesses and injustices revealed by climate change impacts.

Where a conflict between two clearly defined parties has already entered a phase of reduced tension, natural disasters can represent opportunities to overcome entrenched differences.<sup>39</sup> This may have manifested itself in for example the peace agreement between the Free Aceh Movement and Indonesia after the 2004 tsunami and agreements on relief efforts between India and Pakistan after the 2005 earthquake in Kashmir. (Related to earthquakes, neither of these natural disasters were influenced by climate.)

According to the German Advisory Council on Global Change (WBGU), the sudden disaster conflicts are likely to occur more frequently in future: Firstly, regions at risk, particularly Central America, generally have weak economic and political capacities, making adaptation and crisis management very difficult. Secondly, storm and flood disasters along the densely populated coasts of the Indian subcontinent and China can cause major damage and trigger or intensify migration processes which in turn could trigger conflict.<sup>40</sup> Parallel with the growing risk of sudden disasters, Bangladesh is furthermore plagued by political violence and a growing trend toward Islamist extremism.

### **Drought and conflict**

Water scarcity may trigger distributional conflicts. Water scarcity by itself does not necessarily lead to conflict and violence, though. There is an interaction with other socio-economic and political factors: The potential for conflict often relates to social discrimination in terms of access to safe and clean water. The risk can therefore be reduced by ensuring just distribution so that people in disadvantaged areas also have access to the safe and clean water. As already pointed out, a main problem today (and probably for the near future) is still the so-called economic water scarcity, and good water management can prevent conflict.

Within states, groups have often defended or challenged traditional rights of water use: In semi-arid regions such as the Sahel there have been tensions between farmers and nomadic herders. According to *The Stern Review on The Economics of Climate Change*,<sup>41</sup> the droughts in the Sahel in the 1970s and 1980s may

have been caused partly by climate change and contributed to increased competition for scarce resources between these groups. The Tuareg rebellion in Mali in the beginning of the 1990s, is also mentioned as an example of a climate change-related conflict. Many of the drought-struck nomads sought refuge in the cities or left the country. The lack of social networks for the returnees, the continuing drought, competition for land with the settled farmers and dissatisfaction with the authorities, were factors that fuelled the armed rebellion.

In the past there have been few examples of “water wars” between states. In fact there are several cases of cooperation (for example between Palestine and Israel), but these have generally concerned benefit-sharing, not burden-sharing. According to Fred Pearce, the defining crises of the 21st century will involve water.<sup>42</sup> He sees the Six Day War in 1967 between Israel and its neighbours as the first modern “water war”, specifically over the River Jordan. Most of the world’s major rivers cross international boundaries, but are not covered by treaties. According to Pearce, this is a recipe for conflict and for upstream users to hold downstream users to ransom. This could be helped by internationally brokered deals for sharing such rivers.

Soil degradation can also trigger food crises and further undermine the economic performance of weak and unstable states, thereby leading to destabilisation, the collapse of social systems, and violent conflicts. Yet it is migration, rather than violence, that has been the typical response to the famines that have affected the most people.<sup>43</sup>

### **Migration influencing environmental conflict**

In research into environmental conflicts, the environmental change–migration–conflict linkage is one of the most frequently mentioned scenarios and topics for case studies, and several climate and security reports consider migration to be one of the most worrisome aspects of climate change.<sup>44</sup> There is some empirical evidence that migration may trigger or exacerbate existing conflicts. Politicisation of ethnicity, the financial role of a diaspora and export of existing conflicts are possible connections between migration and conflict. Much focus has been on how forced migration can create environmental problems, and the UNHCR has operated programmes such as planting trees around camps. Their 1996 Environmental Guidelines recognised that

## Darfur

Darfur is often used to illustrate how climate change can interact with other factors to trigger violent conflict. When Darfur first made headlines, the most common explanation of the violent conflict emphasised the ethnic differences between Arabs and Africans. More recently, prominent officials such as UN Secretary-General Ban Ki-Moon have argued that “the Darfur conflict began as an ecological crisis, arising at least in part from climate change (“A Climate Culprit in Darfur,” in *The Washington Post*, 16.06.2007).”

UNEP’s post-conflict environmental assessment (*Sudan: Post-Conflict Environmental Assessment*, UNEP, 2007) indicates that there is a very strong link between land degradation, desertification and conflict in Darfur. The boundary between desert and semi-desert is shifting southwards partly due to declining precipitation. Several authors attribute this to climate change, while others maintain that the semi-arid Sahel with strong climate variability is not a good case for illustrating or proving climate change. The 20-year drought, regardless of cause, played an important role by reducing the land available for farming and herding, but as the UNEP assessment also recognises, climate (and/or environmental) change alone does not offer the full explanation for the outbreak or the extent of the violent conflict. All countries in the Sahel have felt the impact of global warming, but so far only Sudan has experienced such devastating conflict.

The ethnic dimension does not offer a full explanation either: Political and military alliances frequently shifted depending on pragmatic rather than ethnic considerations. Furthermore, some tribes practice both herding and crop cultivation so there is not always clear tribal distinctions between farmers and herders.

When the north-south civil war broke out again in the mid-1980s, however, the central government used Arab militias as a means of keeping the southern rebels at bay in Darfur. Raising an army is expensive so the Khartoum regime used a strategy often employed in warfare: they armed others to do the work of the army. A balance was upset, and ethnic identity became more politicised. This fed into the escalation of conflicts over land issues.

The conflict itself has taken a further toll on already scarce resources. Militias in Darfur intentionally destroyed forests and the natural livelihood base of people, resulting in further displacement. The massive scale of displacement also has serious consequences for the environment. Around the camps for displaced people, the collection of shelter materials and firewood can cause serious deforestation and soil erosion. UNEP’s assessment indicates that some international aid programmes may also cause significant harm to the environment, and there may be vicious circles of (particularly food) aid dependence, agricultural underdevelopment and environmental degradation. This is detrimental to Darfur’s existing problems of drought, desertification and disputes over land-use – factors that contributed to the conflict in the first place.

“the negative environmental impacts associated with refugee situations must be better understood and dealt with.”

Much of the forced migration related to climate change, is likely to be internal, regional and short-term or temporary. In transit or the place of destination, (particularly mass) migration may (be perceived to and/or) contribute to competition for already scarce resources such as land and water. During a drought people may move to a less affected region, resulting in rising demand there. A competitive situation is more likely where population growth is strong. Climate change may also lead to further increases in rural-urban migration because of the degradation of land and people searching for better livelihoods. This may result in growing slums and an increased competition for resources in cities. There may also be competition and potential for conflict when migrants return to areas of origin and issues arise such as ownership or rights of use.

The conflict potential of migration depends to a significant

degree on how the government and people in the place of transit, destination or return respond. Governance, the degree of political stability, the economy and whether there is a history of violence are generally important factors.

- Sudden disasters such as storms and floods often highlight weaknesses of the government in power, thereby triggering or exacerbating existing intrastate conflict which in turn can trigger forced migration.
- The degradation of freshwater resources can trigger intrastate conflict which in turn can trigger forced migration. Migration has been more likely than violent conflict as a response to famines.
- The forced migrants can contribute to a competition for already scarce resources such as land and water, but several other factors, including governance, are important in determining conflict potential.

### The Transmigrasi

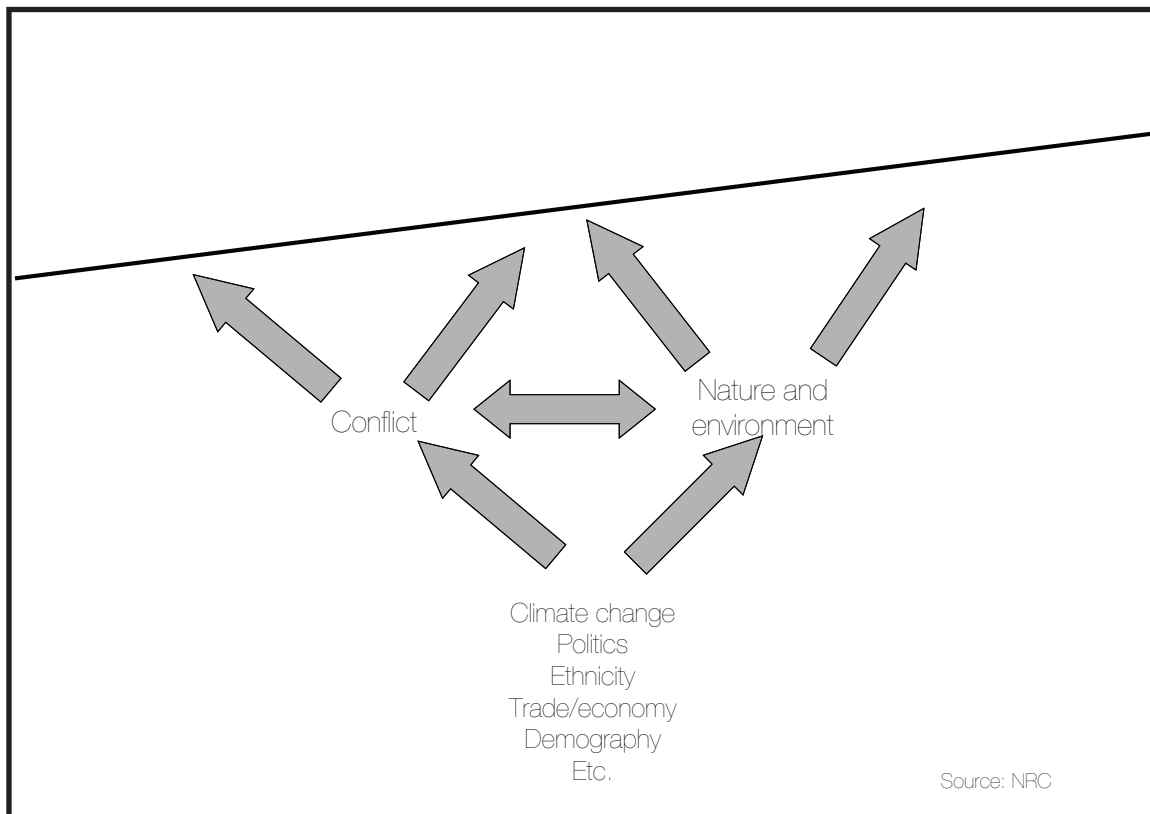
Indonesia's *Transmigrasi* programme was designed to resettle families from the densely populated inner islands to the outer. When Suharto's regime collapsed in 1998, conflicts between indigenous groups and settlers became violent. A common portrayal sought the explanation in ethnic hatred that broke out as the military control weakened, but environmental factors also played a role.

The *Transmigrasi* was part of the government's modernisation and commercialisation plan. Market crops were introduced with the settlers into islands where the indigenous people lived off subsistence agriculture and hunting. The settlers cleared the land and native forest (and many worked for logging companies) and tried to set up agriculture and cash crops with little knowledge of local conditions. Soon the natural environment that had sustained the indigenous population for centuries, was devastated and the people marginalised and impoverished.

Clearly the environmental factor was an important factor of the resulting conflict. Other factors include the political (the establishment of Javanese military to strengthen central control of the outer islands), the economic and the demographic.

(See the IDMC non-conflict displacement report and Castles, Stephen (2002), "Environmental change and forced migration: making sense of the debate", Working Paper No. 70, UNHCR.)

### Forced migration model



## “Hotspots”

In one way or another, all countries will eventually be affected by climate change, but some are more immediately and particularly exposed and vulnerable. The IPCC report highlights the following group of countries:

- Small Island Developing States (SIDS)
- Africa
- Mega-deltas (particularly in Asia)
- The polar regions

As already mentioned, impacts of climate change depend not only on exposure to the physical effects of climate change, but also crucially on vulnerability/resilience and adaptive capacity. The location of the hazards/disasters are not predicted to change much in the near future, but the severity and frequency is likely to increase. Vulnerability and resilience is therefore likely to be a determining factor in the geographical location of “hotspots”. The IPCC have “high confidence” that “Africa is one of the most vulnerable continents to climate change and climate variability, a situation aggravated by the interaction of ‘multiple stresses’, occurring at various levels, and low adaptive capacity.”<sup>45</sup> The UN Framework Convention on Climate Change (UNFCCC) also recognises SIDS and Africa as being particularly vulnerable, and adds to this list the Least Developed Countries (LDCs). From migration and environmental conflict research, one can conclude that states and societies, in which the general factors of forced migration or conflict apply, are particularly vulnerable to climate change.

Whenever there is a disaster, it is likely to be largest in terms of the number of persons affected, in countries with high populations such as India and China. The Caribbean, amongst other regions, is also exposed to cyclones and other sudden disasters - though with fewer persons at risk. Apart from Africa, and particularly the Sahel and the Nile area, the Stern report focuses on Central Asia as a potential hotspot for future drought-related conflict. Central Asia is also highlighted by Pearce.

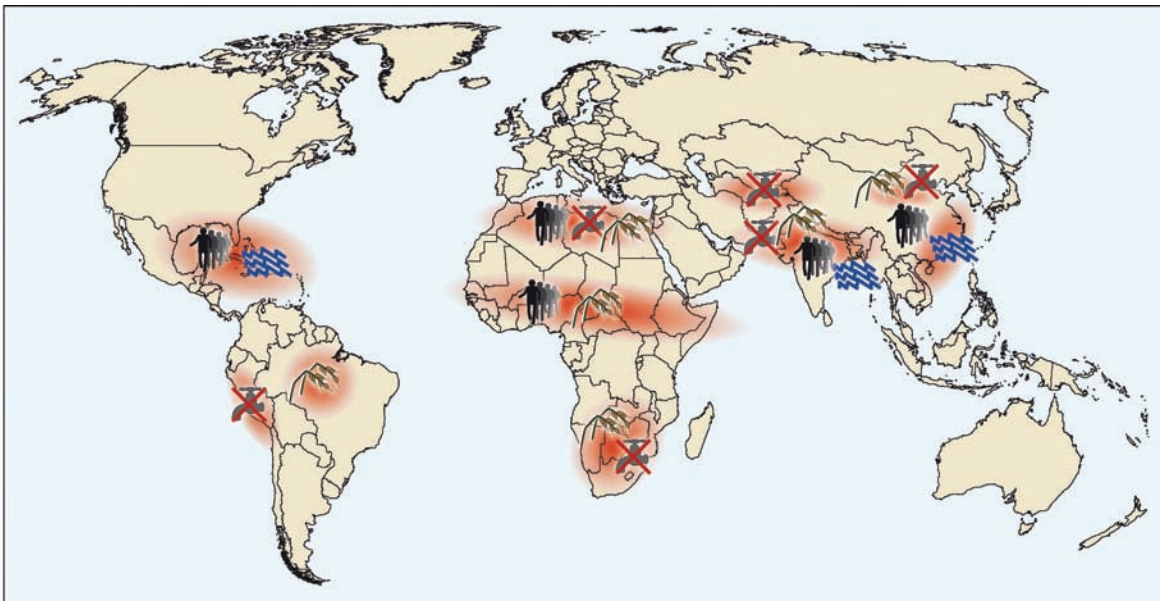
The conflict and forced migration hotspots largely overlap. Faced with climate change, there may be an increase in planned migration that is longer-distance, longer-term and more permanent. Increased urbanisation with the possibility of secondary migration can also be expected. Some studies include North America as a destination for migration, particularly from Central America

and the Caribbean, and Europe as a destination for migration particularly from Northern Africa.<sup>46</sup> But, as already mentioned, most of the forced migration related to climate change, is likely to be internal and regional, particularly concentrated in Asia and Africa. While the developed countries bear the main responsibility for climate change, one could question whether the dynamics of climate change, conflict and forced migration can and should be portrayed as a threat image of masses of refugees flooding over western borders. The sad truth is that there will be real floods, and if nothing changes, many of the affected will have little choice but to return and risk further flooding.

- **Considering that impacts of climate change depend on exposure as well as vulnerability/resilience, it is likely that developing countries in lower latitudes will continue in the near future to be the hotspots in several senses of the word.**



## Security risks associated with climate change: Selected hotspots



The map only shows the regions which are dealt with in the WBGU report 2007 and which could develop into crisis hotspots.

Source: German Advisory Council on Global Change WBGU (2007): *Climate Change as a Security Risk*.

### Conflict constellations in selected hotspots

- 

Climate-induced degradation of freshwater resources
- 

Climate-induced decline in food production
- 

Hotspot
- 

Climate-induced increase in storm and flood disasters
- 

Environmentally-induced migration



# International law and protection

Having looked at the form and scope of the forced migration that is likely to arise from climate change impacts, this second part of the report investigates how the migrants can be categorised, something which has a bearing on questions of protection and assistance. In an investigation of the concept of environmental or climate refugees and evaluation of protection gaps, one can draw upon some of the basic concepts and categories of migration.

## “Ecomigrants”

“Migrant” can be considered the overarching and general term (cf. migration). To various degrees, the different categories of migrants have their position regulated and protected by law.<sup>47</sup> So-called economic migrants do not have a very strong position in international law.<sup>48</sup> This migration is often very linked to socio-economic conditions. Marxist critique emphasises the element of force in such migration and claims it is not recognised because of the liberal-political nature of international law.

Some authors believe there is no significant difference between economic migrants and those migrating due to environmental change. “Ecomigrants” has been suggested as a concept that reflects that migration frequently has both an economic and an ecological element and a clear separation is difficult.<sup>49</sup> The small-scale farmer, who finally abandons his land due to gradual soil degradation, leaves because there is an increasing lack of opportunities of livelihood. In this aspect he or she is like the so-called economic migrant. Gradual environmental degradation can cause significantly more far-reaching and permanent migration than sudden disasters. The question of choice is linked to the degree of severity. When is the soil so degraded that the farmer is forced leave? At what stage in this gradual process are we dealing with forced migration rather than voluntary migration? These are questions that are best answered on a case-by-case basis, and there is a risk that many migrants will be treated as economic migrants in a liberal-political interpretation of law.

## Refugees

There are an estimated 14.3 million refugees in the world.<sup>50</sup> A moderate or strong increase over the past years has been recorded in all areas – with the exception of Europe where talk of “bogus asylum seekers”, “economic refugees”, the War on Terror and other factors have contributed to strengthening the walls of “Fortress Europe”. Pakistan and Iran together hosted more than

2 million refugees with Afghanistan being the main country of origin. One and a half million Iraqis have found refuge mainly in neighbouring countries. Sudan, with more than half a million of its nationals outside the country, is the third largest refugee-producing country.

Refugees have fled persecution and lack protection in their country. Therefore, they are considered to be in particular need of international protection and have a unique legal status with certain pertaining rights. In other words, “refugee” is a term with legal implications. According to the 1951 Convention relating to the Status of Refugees article 1A a “refugee” is

“[...] any person who [...] owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion, is outside the country of his nationality, and is unable, or owing to such fear, is unwilling to avail himself of the protection of that country [...]” (The 1967 Protocol has removed a geographical and temporal restriction.)

The 1951 Refugee Convention and its definition is a product of Europe in the immediate post-World-War-II period, and it has come under heavy attack for not catering for the problems of today’s world, such as mass displacement through war and generalised violence in several developing countries. A majority of the persons in need of protection and assistance do not qualify as refugees. How to deal with the asylum-migration nexus (or mixed migration), has become a frequent discussion topic in forced migration circles.

It is worth noting from this definition, that a refugee has fled his or her country due to persecution on one or more grounds in an exhaustive list. Climate change and environmental change is not to be found in this definition. There are regional instruments with somewhat broader definitions of refugees, but none explicitly grant refugee status for environmental or climate change reasons. (The African convention and the American Cartagena declaration recognise inter alia events that seriously disturb public order, however.)

The “social group” ground can be interesting to explore. There are two main theories regarding what constitutes a social group;





Photo: Marcus Bleasdale/VII

one arguing that it is crucial that the group has fundamental or inherent *protected characteristics*, the other emphasising (external) *social perception*. Environmental or climate refugees may constitute “a social group composed of persons lacking political power to protect their own environment.”<sup>51</sup> Persecution itself cannot define the social group, though, and such an interpretation of the generally underexplored and unclear “social group” ground is highly controversial. After assessing the criteria of the 1951 Convention, a majority of authors conclude that persons whose displacement relate to environmental change, do not meet the requirements to be defined as “refugees”.

Importantly, people leave because they are *persecuted* in some way on these grounds. Hence, persecution is a key term. In reality a person may not for example be politically active, but if someone believes him or her to be politically active and therefore persecutes him or her, (s)he may become a refugee. The term “persecution” is not defined, but serious or systematic human rights violations are normally considered to amount to persecution. The UNHCR *Handbook on Procedures and Criteria for Determining Refugee Status* concludes that “a threat to life or freedom on account of race, religion, nationality, political opinion or membership of a particular social group is always persecution. Other serious violations of human rights – for the same reasons – would also constitute persecution.”<sup>52</sup> As there is no set definition, there is place for evolution of the concept. Persecution through violation of economic, social and cultural rights is more and more recognised. The persecution and link to the convention grounds must be considered in light of the availability of state protection. The definition covers both the situations where the state does not provide protection for one of the grounds and the situations where someone is persecuted for one of the recognised grounds (by a non-state agent) and the state simply does not protect.

“Environmental persecution” has been defined as occurring “when governments knowingly induce environmental degradation and that degradation harms people by forcing them to migrate.”<sup>53</sup> It may be stretching the term too much to talk of climate change persecution. Who would in that case be the persecutor(s)? The state that directly fails to protect its citizens from the impacts, and/or the states that are the most responsible for the climate change? This sort of reasoning may however lead to innovation in international normative development. If a par-

ticular ethnic/religious/national/social/political group is discriminated against and left to live in an area prone to environmental degradation or sudden disasters such as floods, and the government does not protect them by for example adaptation schemes, one could argue that some of them may become refugees because of persecution on one of the recognised grounds. The environmental factor comes in not as a ground, but as a form of persecution. Such interpretations are not impossible, but they conflict with the liberal-political view that persecution is seen to require ill-will and a deliberate act (not merely an omission) on the part of the state or a non-state party. There may also be more direct persecution related to the environment: persecutors may use, as is often done in conflicts, environmental destruction to undermine people’s livelihood. The environmental destruction could then be seen as an active form of persecution.

Although environmental problems may have contributed in triggering social disorder and is seen as a root cause by some authors, those who flee a so-called environmental conflict, are in fact fleeing situations of generalised violence. In some places, these forced migrants (often popularly referred to as “war refugees”) are recognised and granted the same or a similar status to the 1951 Convention refugees. Alternatively, such as in the directives for a common European asylum system, they may be granted a subsidiary status of protection, or as a minimum be protected against return through *non-refoulement* (explained below).

### **Submerged islands and statelessness**

Situated only centimetres above water, Tuvalu, an island state in the western Pacific, is expected to become uninhabitable by 2050, and its leaders are actively seeking solutions to this strange problem.<sup>54</sup> The islanders risk becoming stateless – as stateless as you can possibly be. Not only the physical island, but all the institutions of a modern state – parliament, police, law courts, state education, healthcare and other welfare institutions – may disappear. In theory, the islanders could reconstitute their vanishing state elsewhere. Indeed, Tuvalu has considered the option of buying an island or piece of land from another country, but possible sellers, such as New Zealand, have not been overly positive. Despite the desire of the around 10 000 Tuvaluans to stay on the islands, and the fear that their cultural heritage might be lost, migration or relocation to other states may be the only realistic option.

The Pacific Access Category (PAC) is an immigration agreement with New Zealand. The country has decided to accept an annual quota of migrants from island states such as Tuvalu. It is not very different from ordinary migration arrangements. The PAC does not employ the term environmental or climate refugee, nor does it mention the threat of climate change or state any responsibility for the displacement of these populations.

Statelessness and attempts to deal with statelessness is not a new phenomenon. According to a *Refugees Magazine* with a special report on the stateless, the official figure of stateless persons in the world today is 5.8 million, while the United Nations High Commissioner for Refugees (UNHCR) estimates that the true total is probably closer to 15 million.<sup>55</sup> What must be a rather seldom phenomenon, however, is the complete extinction of a state without there being any successor state. Several difficult questions arise regarding the rights of the affected population and who would be responsible for protecting them, and there may be a serious protection gap in law on statelessness.

### ***Non-refoulement***

In human rights law (which has a much broader application than refugee law), the principle of *non-refoulement* is an absolute and general ban on returning people to places where they risk certain ill-treatment. The principle has a prominent place in several human rights instruments: According to case-law, the European Convention of Human Rights and Fundamental Freedoms article 3, the ban on torture and inhuman and degrading treatment, implies the duty not to expel a person to a place where he or she could be in danger of being exposed to the prohibited treatment.<sup>56</sup> The Human Rights Committee has said the same about article 7 in the International Covenant on Civil and Political Rights. Article 3 in the Convention Against Torture can also be relied upon by a person facing the danger of torture if returned. Most agree that the prohibition on torture is a customary principle, but there is disagreement regarding the extent to which one is protected by customary law against lesser ill-treatment. At some point one is dealing with more purely humanitarian considerations than hard legal obligations. The exact scope and interpretation of the peremptory norm may be contested, but clearly *non-refoulement* protection may be relevant in situations of climate change-related forced migration. Persons fleeing conflict situations with an environmental element, can find protec-

tion in *non-refoulement*, but it can apply even broader. In some cases people simply cannot return:

- The place they came from no longer exists as in the case of submerged island states. The question of statelessness may be partly addressed here.
- The place they came from can no longer sustain its entire population leading to the expulsion of certain groups. In such cases one can also consider whether it is persecution and the 1951 definition applies.
- The place they came from can no longer sustain its entire population leading to a prohibition to return once one has left.

In other cases, people cannot reasonably be expected to return to the place they came from, because of livelihood and quality of life considerations.<sup>57</sup> In all these cases the migrants could be in need of international protection – that is, protection outside their country – just like refugees are. One reason refugees are still considered a category apart among international migrants is the protection aspect: if other migrants choose to return home they will continue to receive the protection of their government, while refugees who flee because of persecution, cannot return safely to their homes unless there is a fundamental shift in the situation. With today's climate change scenarios even gradual environmental degradation may in some areas reach such a critical point that it would in fact be almost impossible to return or unreasonable to expect anyone to return. These persons could be granted humanitarian asylum or some other protected status. In the proposal for new asylum legislation in Norway the distinction between persons who cannot be returned due to international obligations such as *non-refoulement* and persons with refugee status (currently given only to those who meet the 1951 Convention criteria) ceases, and both groups are considered refugees. The principle of *non-refoulement* could also protect persons against internal returns to certain areas within the same country.

### **Internally displaced persons**

Most of the migrants will differ from the refugees for an important reason mentioned in the 1951 Convention: They are not “outside the country of (his) nationality”. Internally displaced persons (IDPs) have fled their homes, but unlike refugees they have not crossed an international border. According to the *Global Overview* from the Internal Displacement Monitoring Centre

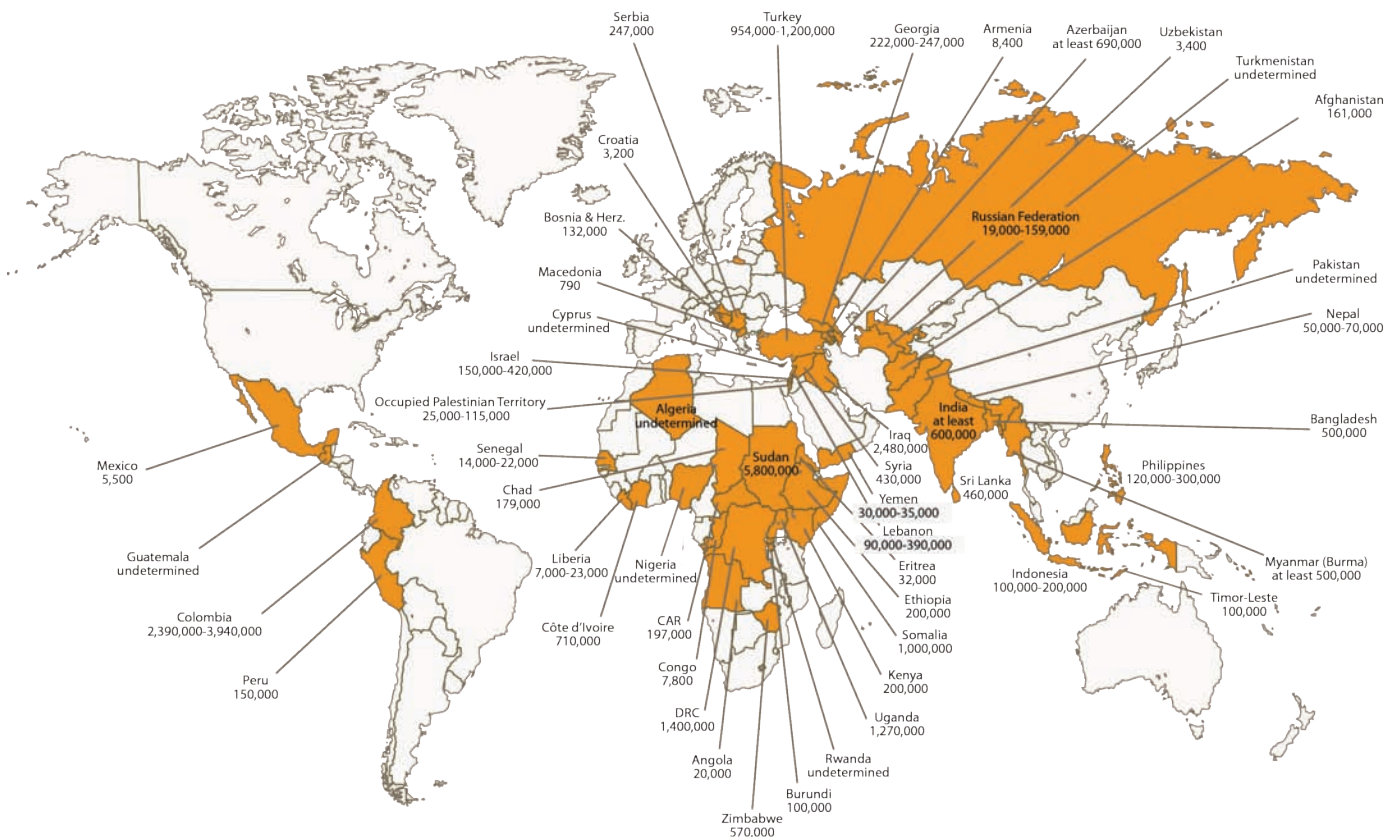
(IDMC), the total conflict-related IDP population was estimated to be 26 million at the end of 2007.<sup>58</sup> Africa hosted almost half of the population (12.7 million people), and Sudan with 5.8 million was the country with the highest number of IDPs. Although IDPs far outnumber refugees, their plight still receives much less international attention.

The protection needs of IDPs were not very clearly catered for in international law – there was an apparent protection gap. “Internally displaced person” is not itself a legal term with legal implications, but several rights and systems of law have eventually been identified as relevant in their particular situation.

Rather than creating a separate convention, the 1998 Guiding Principles on Internal Displacement is a synthesis, drawing out relevant parts of human rights law, refugee law by analogy and international humanitarian law / laws of war. Arguably, the principles should be considered legally binding to the extent that they reflect existing, binding international law. This approach has been considered an innovation in international normative development.

National governments have the primary responsibility for people on their territory, and this has been a main challenge in the protection of IDPs. In many cases it is the very same state that has

## Internally Displaced People Worldwide 2007



persecuted the displaced, which is supposed to provide protection. The state is often unwilling or unable to protect and in some cases even denies the entry of international protection and assistance agencies by referring to the principles of national sovereignty and non-interference. The first Special Representative of the Secretary-General on IDPs, Francis Deng, developed a concept of sovereignty as responsibility to protect (R2P). There is still not one mandated agency for the protection of and assistance to IDPs, but UNHCR now has a special role and accountability as cluster lead. According to the IDMC *Global Overview*, a significant number of IDPs still suffer from a protection and assistance deficit.

“Internally displaced persons” are according to the broad and descriptive definition in the Introduction of the Guiding Principles:

“[...] persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized State border.”

The inclusion of disasters is a recognition that persons displaced by disasters also have protection needs requiring international attention. The IDMC report on non-conflict induced displacement claims that many individuals and communities displaced by natural disasters confront similar problems and present similar challenges to those displaced in conflicts.<sup>59</sup> For example, the displaced may be in camps, be unable to return home, and may lack formal property title, thus hindering return and the reestablishment of livelihood. Occasionally, governments have been known to respond to natural disasters by discriminating against or neglecting certain groups on political or ethnic grounds or by violating their human rights in other ways. On the other hand, the IDMC report notes, the human rights aspects of disasters seem to be increasingly recognised, and there are national and international systems in place to respond to disasters backed by a political will and in most cases the financial resources necessary. The International Federation for the Red Cross and the Red Crescent Societies in particular plays an important monitoring and advocacy role.

It is not so clear whether those who move due to more gradual environmental degradation are covered by the Principles. Drought and environmental degradation can possibly be included as slow-onset disasters. Furthermore, the list is not exhaustive (“in particular”), and the definition may open for an evolutionary approach to displacement and protection. It could also be argued that environmental degradation could be considered development displacement because of the role of the state and influence of other political factors on such migration. “Development” as a cause of displacement is not explicitly included in the IDP definition but large sections deal with displacement related to development (or the lack of it) in the main document (particularly principle 6) and in the annotations by Walter Kälin. An important consideration here as well is whether (and when) those moving due to gradual environmental degradation are more similar to voluntary/economic migrants or those considered forcibly displaced. It is possible that in the beginning people will migrate voluntarily because the traditional forms of income or employment are insufficient. These would not necessarily be considered IDPs. Some of their needs may be addressed by development agencies. If with time, the question is not of economic improvement but of pure survival, then they could be considered IDPs. There can also be a visibility challenge in gradual environmental degradation in contrast to more sensational sudden disasters portrayed in the media.

The question of IDP categorisation is important not only from a legal point of view, but also when it comes to qualifying for assistance as many organisations provide relief and development support to target groups identified in their own mandates. Birkeland claims that environmental factors are seldom given due attention and that in many situations of displacement there are immense differences between those whom the displaced themselves perceive as displaced and whom the external actors will include in their mandates. Hence, she concludes, it is important to secure an inclusive understanding of the IDP category rather than trying to fit displaced into separate categories such as environmental or climate refugees in order to secure rights and assistance.<sup>60</sup>

#### **Better international burden- and responsibility-sharing**

An important rationale for international protection and assistance is that some of the states most vulnerable to climate change impacts, may be unwilling or unable to protect the migrants.

Even though one cannot isolate the environmental factor in the migration decision, and the line between forced and voluntary migration is often blurred, we should also remember that it is the rich and developed countries who are most at fault for the climate change and that climate change impacts can trigger or exacerbate conflict and migration. Albeit in a more indirect way (and even if one does not define it as persecution), these countries also have a responsibility towards those affected.

Different actors have come with a range of suggestions as to how the international protection gap should be dealt with. Some believe an additional element – fleeing for environmental reasons – could be incorporated in the 1951 Refugee Convention definition by the adoption of an additional protocol. As already mentioned, persecution is a key term in this convention, though, and the system and structure may not be suitable for the dynamics of climate change and forced migration. Moreover, there is, according to most migration specialists, a very real risk that it would weaken the protection available to the Convention refugees. Refugee law is already under pressure in many countries, and any change in the Convention could be for the worse.

Another way to address the protection gap, would be to draft and adopt a completely new and separate international convention. In a new convention one could draw upon environmental law as well as human rights and refugee law.<sup>61</sup> Weaknesses that need to be overcome in the environmental branch of international law relate to enforcement, and the difficulties in establishing liability, making protection based on responsibility difficult. Much more research would be needed, however, before concrete measures are identified and could be made binding in the form of a convention. In so far as one tries to deal with protection of individual forced migrants, the 1951 Convention refugees could risk being redefined and channelled into a new convention with possibly lower protection standards.

A third alternative is to follow an approach similar to the one taken in the case of IDPs, that is, investigate the protection gaps more closely and if possible, create a synthesis of existing (and analogy of) international law in the form of principles. As this chapter already indicates, further investigation of existing protection possibilities could prove useful. Much more research is needed in this field. Some of the protection gaps one is left with

after such research, could perhaps be addressed in the ongoing debate on how to deal with mixed migration / the asylum-migration nexus.

Since most forced migration will probably be internal and regional, resettlement and financial obligations are other important aspects of burden-sharing. A new international environmental migration fund could provide the financial basis for measures to deal with the forced migration.<sup>62</sup> In addition to “the ability-to-pay” principle, the burden-sharing mechanism could be based on “the polluter pays” principle (principle 7 of the 1992 Rio Declaration on Environment and Development), linking contributions to the level of country-specific greenhouse gas emissions as well as other indicators such as Gross National Product. The UN Framework Convention on Climate Change (UNFCCC) contains an appendix constituting a global adaptation fund. The costs of forced migrations could also perhaps be considered as costs of adaptation.

As already demonstrated, many of the forced migrants will probably fit into already existing categories of protected persons, but they may need to be made more visible and recognised within the categories. A strengthening and developing of these existing protection and assistance mechanisms is also needed. Hopefully, climate change increases the focus on the plight of people trapped in their own countries as well as forced migration more generally in the developing countries. The tenth anniversary of the Guiding Principles this year, can also help set the spotlight on the insufficiencies of the current protection regime for IDPs.

- The forced migrants whose displacement relates to climate change impacts, are not automatically excluded by the 1951 Refugee Convention definition. The environmental degradation or disaster cannot come in as a persecution ground, but it could perhaps be considered the form of persecution.
- A person fleeing an environmental conflict should be granted the same protection status as others fleeing generalised violence.
- When it comes to the island states that risk becoming submerged, there may be a serious protection gap in

existing law on statelessness. Some sort of regulation or agreement on a regional or international level should be considered.

- In cases of severe environmental degradation and sudden disasters, the human rights principle of non-refoulement could protect against return when this must be seen to involve ill-treatment above a certain threshold.
- Many of these forced migrants will fall in under the definition of internally displaced persons (IDPs), but their protection will largely depend on whether or not the international organisations include them in their mandates (operational protection gaps).
- Particularly for those considered to have moved due to gradual environmental degradation, there may be operational and normative protection gaps, internally and internationally, because they risk being considered economic or voluntary migrants.
- Existing law and protection possibilities should be further investigated to identify and address potential protection gaps. More research is needed.
- Financial resources must be made available for countries to deal with problems of forced migration related to the environment.





Photo: Marcus Bleasdale/VII

# Prevention

If it is better to prevent than to cure, one should not only address the question of how to protect and assist those forced to migrate by environmental and other factors, but also address the factors themselves – that is, try to deal with the root causes of forced migration and conflict. Here Myers has several constructive recommendations such as foreign aid measures to help developing countries deal with environmental challenges. Developed countries must take the lead in mitigation. Because developing countries are the most exposed and vulnerable, it is also crucial to provide assistance to these countries in dealing with displacement and prevention, including climate change adaptation.

## Mitigation now

The impacts of human-induced climate change can have serious consequences for conflict and forced migration. From a humanitarian perspective, mitigation must be a top priority. We must keep this century's global temperature rise within the critical 2 °C threshold above pre-industrial levels. *The Stern Review on The Economics of Climate Change* concluded that solutions to climate change are affordable. If we fail, it will be because there was a lack of political will to cooperate.

Mitigation is about transforming the way that we produce and use energy so it will be sustainable. Mitigation measures include emission cuts through carbon budgeting, better technology and carbon capture and storage, but also sequestering carbon through reforestation. These measures have long-term effects globally. Because emitted greenhouse gases stay in the atmosphere for a long time (we are currently living with the consequences of emissions since the industrial revolution), mitigation must start for full now to have an effect for the second half of our century. Because of these climate change characteristics, there is a need for legally binding, long-term commitments rather than ad hoc measures. The commitments in the Kyoto Protocol of the UNFCCC expire in 2012, and a committing, long-term framework must be put in place. Negotiations on a new protocol started in 2007 and are to be concluded by 2009 in Copenhagen.

Developed countries carry the main responsibility for today's climate change and they have the financial and technological resources to deal with it. Driving a car in Texas has consequences for a farmer in Bangladesh. The rich, developed countries have 15 percent of the world's population, yet still account for almost

half of the CO<sub>2</sub> emissions.<sup>63</sup> It is crucial that major developing countries, such as China and India, also commit to mitigation, but the developed countries must take the lead in these efforts and assist developing countries through technology transfers and other measures.

## Ecological and feminist perspectives on progress

Climate change fundamentally challenges how we think about progress and development. Leading ecologists say Gross National Product is meaningless as a measure of progress. Measuring all goods and services produced in the money economy, it is just as much a measure of everything that is going wrong, counting money spent on pollution, human casualties, increased waste and so on.<sup>64</sup> While Stern maintains that all countries can contribute to combating climate change while still achieving economic growth, Lovelock and deep ecologists advocate for a more fundamental shift in attitude and "sustainable retreat."

Vandana Shiva claims that western, patriarchal categories of development see "destruction as "production"", assuming that it takes place only when mediated by technologies for commodity production, and "regeneration of life as "passivity"". <sup>65</sup> From the perspective of Third World women, productivity is a measure of producing life and sustenance, she argues. That this kind of productivity has been rendered more or less invisible, merely reflects the domination of modern economic categories which see only profits, not life.

## Global and gender inequalities in adaptation and resilience

Global warming is already a fact. The world average temperature has increased 0.7 °C compared to pre-industrial levels. Past emissions of greenhouse gases are estimated to involve some unavoidable further warming. By 2100, the IPCC expect that the average global temperature will have risen at least by another 1.8 °C. The worst-case scenario is a rise in excess of 5 °C. Even the smallest rise in average temperature can have drastic effects. There are some impacts for which adaptation is the only available and appropriate response. During the UN Climate Change Conference in Bali in December 2007, the developing countries sent a clear message that they are already feeling the climate change impacts and that adaptation must be a priority alongside mitigation. Future generations are not the only ones that will suffer from a problem they did not create; the world's poor suffer from the



earliest and most damaging impacts.

Adaptation is about finding and implementing ways of adjusting to climate change. Local and regional adaptation will be crucial in the short to medium-term especially in the more exposed and vulnerable countries. Successful adaptation would lessen the need to migrate and reduce the risk of conflict. Moreover, there can be synergies between adaptation and mitigation: For example, not only can reforestation prevent land degradation and floods, but it also influences the greenhouse effect by the sequestering of carbon.

There is a long record of practices to adapt to the impacts of weather as well as natural climate variability. Among proactive measures one finds crop and livelihood diversification, famine early warning systems, insurance, water storage and supplementary irrigation. Floods often happen with some likelihood in the same areas at the same times. This makes a good case for adaptation through for example flood defence infrastructure. Drought and gradual environmental degradation can be prevented and adapted to by different land-use techniques and livelihood diversification. Examples of reactive adaptations are emergency response and disaster recovery. Climate change impacts will increase the need for local, national as well as international humanitarian response significantly. Climate change also challenges the dichotomy and gaps between relief and development. It can strengthen the case for better mainstreaming of disaster risk reduction in development planning. Adaptation is integral to both humanitarian (relief and rehabilitation) and development work.

The global inequalities in capacities to adapt are glaring. Rich countries are already investing heavily in climate change adaptation in their own countries. The UK spends more than a billion US\$ a year on flood defence infrastructure. While there are investments in homes that float in the Netherlands, people are taught how to float themselves – that is, to swim – in the Mekong delta. “Adaptation” in many African countries involves women and girls walking longer stretches to collect water and firewood, exposing them, some say, to an even greater risk of rapes and sexual violence in unstable areas. Clearly, there is a gender dimension to the climate change impacts and adaptation. According to the United Nations Development Programme (UNDP), Indian women born during a flood in the 1970s were 19 percent less

#### Adaptation actions

Afforestation/ reforestation	Integrated agriculture-aquaculture
Agroforestry	Livestock breeding
Animal pest control	Ponds
Appropriate irrigation methods	Portable household appliances
Aquaculture	Poultry breeding
Check dams	Promotion of handicrafts
Cold-resistant housing	Rangeland management
Crop processing	Restoration of coastal ecosystems
Disaster mitigation	Retaining walls
Disaster preparedness	Saline-tolerant crops
Disaster rehabilitation	Sea dykes
Drought-resilient crops	Seed priming
Early warning	Seed selection and storage
Exterminating vectors	Soil fertilization
Flood-resistant housing	Storm-resistant housing
Food processing and storage	Tanks
Forest management	Temporary land redistribution
Harvesting of wild foods	Vermicomposting
Heat-resistant housing	Vocational training
Horticulture	Water allocation
Hydroponics	Weed control
Improved cropping systems	
Indigenous forecasting	

Source: UNFCCC; [http://maindb.unfccc.int/public/adaptation/adaptation\\_list.pl?id\\_hazard=&id\\_impact=&id\\_strategy=](http://maindb.unfccc.int/public/adaptation/adaptation_list.pl?id_hazard=&id_impact=&id_strategy=)

likely to have attended primary school.<sup>66</sup> Women and children make up seven out of ten of the persons affected by famines.<sup>67</sup> In general, displacement can make people particularly vulnerable to climate change impacts. The IDMC global overview report elaborates on the extra risks confronted by internally displaced women and children, groups that make up the vast majority of IDPs. In sum, the most vulnerable people in the most vulnerable states are affected most and have the least capacities to adapt.

Often the developing countries simply lack the capacity and resources to get the information they need. While Africa is particularly exposed and vulnerable to climate change, the continent has the world’s lowest density of meteorological stations. Many developing countries also lack the financial resources for infrastructural adaptation, such as the development of flood

defences. As part of adaptation to climate change, a system of insurance for social protection, such as micro-insurance, is also needed. For adaptation strategies to translate into changed behavior, institutions or technologies, one must also take into consideration the context-specific social, cultural, and psychological barriers to change.

Adaptation in the most exposed and vulnerable states must be an international task for several reasons. One reason is the rich countries responsibility for the climate change. The UNFCCC contains an appendix constituting a global adaptation fund to meet the costs of adaptation to climate change. Article 4.4 of the Appendix states that “developed country Parties and other developed Parties in Annex II shall also assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects.” Not enough money has been made available for adaptation through this and other funds such as the Special Climate Change Fund and the Least Developed Countries Fund. Up until the end of 2007, the total financing through these mechanisms was the equivalent to one week’s worth of spending under the UK flood defence programme (around 26 million US\$).<sup>68</sup> The developed countries have done far too little with regards to adaptation in the developing countries. It is important that new, additional money be made available, rather than merely shifting the money from development and humanitarian work to climate change adaptation. Resources have to be invested in the whole spectrum of measures contributing to adaptation, including disaster management, humanitarian response and development work.

#### **Addressing general factors of forced migration and conflict**

The IPCC stresses the importance of addressing climate change adaptation in vulnerable states, especially where these responses are so-called “no regrets” measures – that is, measures that turn out to be of benefit no matter how or if the predicted climate change impacts. The report notes that most analyses of adaptation propose that successful adaptations involve marginal changes rather than fundamental changes in location and development paths. From environmental conflict research and migration and refugee studies, it is clear that addressing factors of conflict and forced migration can help prevent the worst impacts of climate change. Climate change has impacts that may trigger conflicts, but they need not rise to the level of violent conflict. The capaci-

ties needed to adapt successfully to climate change are similar and often the same as those needed for general development and to reduce the risk of conflict and forced migration. Strengthening and improving state structures and capacities as well as economic and distributive justice are ways of adapting. Thus, conflict- and migration-sensitive climate change policies can actively promote general development, and climate-proof humanitarian and development policies can be effective climate change adaptation.

Although the responsibility for climate change and its impacts primarily lies with the developed countries, the vulnerable states are also responsible for addressing general factors of forced migration and conflict. Protection of people on its territory is the primary responsibility of national states. Adaptation is to a large extent a question of resources, information and infrastructure, but the role of the state and institutions and other political and socio-economic factors are crucial in the prevention of climate change impacts, conflict and displacement.

In our globalised, privatised and free trade world it is increasingly difficult to isolate politics in one country and place blame on individual states alone. Much of the economy of exposed and vulnerable states, is often largely controlled by western-owned and -based transnational companies. These companies are motivated by profit and may even have vested interests in the malfunctioning of the states as well as an inherent opposition to adaptation and mitigation measures. To illustrate the role of large, transnational companies in root causes of conflict and displacement, one can consider the illegal trade in arms. Attempts to control the illegal trade in small arms have failed several times because US arms manufacturers, referring to market freedom, rejected any control of arms.<sup>69</sup> They were backed by their government. Obviously, small arms can play an important role in conflicts and the displacement of people. The challenges of developing countries must be seen in this larger context. If we want to deal with the root causes of forced migration and conflict, we should also seek to find them in the policies and practices of developed countries.

Hopefully, climate change will foster a new and stronger sense of solidarity. It provides an opportunity for cooperation in addressing global issues such as conflict and displacement. Climate change reminds us how everything is connected – that humans are also part of an overarching whole. The world may be divided

and people categorised in many ways, but we all share and are part of the Earth – at least for now.

- Adaptation measures by reducing the impact of climate change, can lessen the need to migrate as well as reduce the risk of conflict.
- Adaptation in developing countries must be made a top priority along with mitigation. Resources have to be invested in the whole spectrum of measures contributing to adaptation, including disaster management, humanitarian response and development work.
- Alongside information and infrastructure measures, addressing general factors of conflict and forced migration can also contribute to vulnerability reduction and adaptation.



Photo: Marcus Bleasdale/VII

# Main conclusions and recommendations

## The form and scope of forced migration and conflict

1) Climate change impacts are likely to contribute to an increase in forced migration. The climate change and environmental factor is one among several root causes of conflict and forced migration.

2) The term “climate refugees” and the stipulation of numbers can be misleading. It is not possible to isolate climate change as a cause of forced migration; the form and scope of migration will depend on mitigation, adaptation and other factors; the names and numbers of these migrants are coloured by different discourses and agendas; the term is legally inaccurate; and many of the displaced are likely to be internally displaced.

3) Climate change is likely to lead to an increase in the frequency and severity of sudden disasters such as floods and storms, and an increase of physical water scarcity. This can trigger internal and regional displacement and environmental conflicts. Sudden disaster displacement is typically short-distance and temporary, while drought may trigger gradual and longer-distance migration. Migration can trigger or exacerbate environmental conflicts and vice versa.

4) Since impacts of climate change depend on both exposure and vulnerability/resilience, it is likely that developing countries in lower latitudes will continue in the near future to be the hotspots in several senses of the word. Most forced migration and conflict is expected to be internal and regional.

## Protection and prevention

1) The forced migrants whose displacement relates to climate change impacts, are not automatically excluded by the 1951 Refugee Convention definition. The environmental degradation or disaster cannot come in as a persecution ground, but it could perhaps be considered a form of persecution.

2) A person fleeing an environmental conflict should be granted the same protection status as others fleeing generalised violence.

3) When it comes to the island states that risk becoming submerged, there may be a serious protection gap in existing law on statelessness.

4) In cases of severe environmental degradation and sudden disasters, the human rights principle of *non-refoulement* could protect against return when this must be seen to involve ill-treatment above a certain threshold.

5) Many of the forced migrants will fall in under the definition of

internally displaced persons (IDPs), but their protection will largely depend on whether or not the international organisations include them in their mandates (operational protection gaps).

6) Particularly for those considered to have moved due to gradual environmental degradation, there may be operational and normative protection gaps, internally and internationally, because they risk being considered economic or voluntary migrants.

7) Adaptation measures, by reducing the impact of climate change, can lessen the need to migrate as well as reduce the risk of conflict.

## Recommendations

1) Existing law and protection possibilities should be further investigated to identify and address potential protection gaps in climate change-related displacement. An approach similar to the one taken with regard to IDPs, with the creation of the Guiding Principles, could be considered. More research is needed.

2) Many of the forced migrants may be included in already existing categories of protected persons, but they may need to be made more visible and recognised within the categories.

3) For the internally displaced persons in general there is still a severe protection deficit that must be better addressed.

4) When it comes to the island states that risk becoming submerged, some sort of regulation or agreement on a regional or international level should be considered.

5) Adaptation in developing countries must be made a top priority along with mitigation. There is a need for a broad approach to adaptation, and resources have to be invested in the whole spectrum of measures contributing to adaptation, including disaster management, humanitarian response and development work.

6) Alongside information and infrastructure measures, addressing general factors of conflict and forced migration can also contribute to vulnerability reduction and adaptation.

7) Financial resources must also be made available for countries to deal with problems of climate change-related displacement.



# References

- <sup>1</sup> The Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) is divided in three working group reports: the first deals with the physical science basis (IPCC 2007a), the second with impacts, adaptation and vulnerability” (IPCC 2007b) and the third with mitigation (IPCC 2007c). The entire report is available here: <http://www.ipcc.ch>
- <sup>2</sup> El-Hinnawi, E (1985), *Environmental Refugees*, United Nations Environment Program (UNEP), New York.
- <sup>3</sup> El-Hinnawi, E (1985), *Environmental Refugees*, United Nations Environment Program (UNEP), New York.
- <sup>4</sup> Myers, N and Kent, J (1995), *Environmental Exodus: An Emergent Crisis in the Global Arena*, Climate Institute, Washington DC.
- <sup>5</sup> McDowell, C, and Morrell, G, (2007), *Non-conflict Displacement: A Thematic Literature and Organisational Review*, Internal Displacement Monitoring Centre of the Norwegian Refugee Council (IDMC).
- <sup>6</sup> Myers, N (1993) “Environmental refugees in a globally warmed world”, *Bioscience* 43: 752–61. Myers, N (2002) “Environmental refugees: a growing phenomenon of the 21st century”, *Philosophical Transactions of the Royal Society of London Series B-Biological Sciences* 1420: 609–13.
- <sup>7</sup> Black, R (2001), “Environmental Refugees: Myth or Reality?” UNHCR Working Paper No. 34. Kibreab, G (1994) ‘Migration, environment and refugeehood’ in *Environment and Population Change*, International Union for the Scientific Study of Population, Liège, Belgium.
- <sup>8</sup> Haug, R (2003) “What’s in a name: Environmental refugees in Sudan”, in *In the Maze of Displacement*. Kristiansand (Norway): Høyskoleforlaget.
- <sup>9</sup> Kibreab, G (1997), “Environmental causes and impact of refugee movements: a critique of the current debate”, *Disasters* 21(1): 20–38.
- <sup>10</sup> Dalby, S (2002), “Environmental change and human security”, *Isuma – Canadian Journal of Policy Research* 3(2): 71–9.
- <sup>11</sup> Black, R (2001), “Environmental Refugees: Myth or Reality?” UNHCR Working Paper No. 34.
- <sup>12</sup> [www.iom.int](http://www.iom.int)
- <sup>13</sup> McDowell, C, and Morrell, G, (2007), *Non-conflict Displacement: A Thematic Literature and Organisational Review*, Internal Displacement Monitoring Centre of the Norwegian Refugee Council (IDMC).
- <sup>14</sup> UN Security Council, Report of the Secretary-General on the protection of civilians in armed conflict, 28 October 2007 (S/2007/642).
- <sup>15</sup> Piguet, E, (2008), “Climate change and forced migration,” UNHCR Research Paper No. 153.
- <sup>16</sup> Birkeland, N (2003) “Last time I fled because of war, this time because of hunger” – Environmental Change and Internal Displacement in the Huambo Province, Angola”, in *In the Maze of Displacement*, Kristiansand (Norway), Høyskoleforlaget.
- <sup>17</sup> Black, R (2001), “Environmental Refugees: Myth or Reality?” UNHCR Working Paper No. 34.
- <sup>18</sup> Report No. 9 (2007-2008) to the Storting, *Norwegian policy on the prevention of humanitarian crises*
- <sup>19</sup> Black, R (2001), “Environmental Refugees: Myth or Reality?” UNHCR Working Paper No. 34.
- <sup>20</sup> Castles, S (2002), “Environmental change and forced migration: making sense of the debate”, UNHCR Working Paper No. 70.
- <sup>21</sup> Black, R, Kniveton, D, Skeldon, R, Coppard, D, Murata, A, and Schmidt-Verkerk, K (2008), Unpublished paper prepared for DFID.
- <sup>22</sup> EM-DAT: <http://www.emdat.be/>
- <sup>23</sup> *World Disaster Report*, (2006), International Federation of the Red Cross and Red Crescent Societies. *Human Development Report 2007/2008*, United Nations Development Programme.
- <sup>24</sup> EM-DAT: <http://www.emdat.be/>
- <sup>25</sup> *CRED Crunch* 11/2008, available here: <http://www.emdat.be/Publications/credcrunch.html>
- <sup>26</sup> Piguet, E, (2008), “Climate change and forced migration,” UNHCR Research Paper No. 153.
- <sup>27</sup> Piguet, E, (2008), “Climate change and forced migration,” UNHCR Research Paper No. 153.
- <sup>28</sup> Sainath, P, (1996), *Everybody loves a good drought*, Penguin Books, New Delhi.
- <sup>29</sup> Sen, A (1993), *Overcoming global hunger. Actions to reduce hunger world-wide*, Washington DC.
- <sup>30</sup> Piguet, E, (2008), “Climate change and forced migration,” UNHCR Research Paper No. 153.
- <sup>31</sup> *National Security and the Threat of Climate Change*, CNA Corporation, April 2007.
- <sup>32</sup> For example *The Age of Consequences: The Foreign Policy and National Security Implications of Global Climate Change*, Center for Strategic and International Studies (CSIS) and Center for a New American Security (CNAS), 2007.
- <sup>33</sup> Gleditsch, N P (2003), “Environmental Conflict: Neomalthusians vs. Cornucopians”, in *Security and the Environment in the Mediterranean: Conceptualising Security and Environmental Conflicts*, Berlin: Springer.



- <sup>34</sup> Homer-Dixon, T (1994), "Environmental scarcities and violent conflict: evidence from cases", *International Security* 19(1): 5-40.
- Homer-Dixon, T (1999), *Environment, Scarcity, and Violence*, Princeton: Princeton University Press.
- Percival, V and Homer-Dixon, T F (1995), "Environmental scarcity and violent conflict: the case of Rwanda," *The Journal of Environment and Development* 5(3): 270.
- <sup>35</sup> Gleditsch, N P (1998), "Armed Conflict and the Environment: A Critique of the Literature," *Journal of Peace Research* 35(3): 381-400.
- Gleditsch, N P (2003), "Environmental Conflict: Neomalthusians vs. Cornucopians", in *Security and the Environment in the Mediterranean: Conceptualising Security and Environmental Conflicts*, Berlin: Springer.
- Nordås, R and Gleditsch, N P (2005) *Climate Conflicts: Common Sense or Nonsense? Paper presented at the 13th Annual National Political Science Conference, Hurdalsjøen, Norway, 5-7 January 2005*. Centre for the Study of Civil War (CSCW) at the International Peace Research Institute (PRIO), Oslo.
- <sup>36</sup> *Climate Change as a Security Risk*, German Advisory Council on Global Change (WBGU), London, 2007, available at: [http://www.wbgu.de/wbgu\\_jg2007\\_engl.html](http://www.wbgu.de/wbgu_jg2007_engl.html)
- <sup>37</sup> Drury, A C and Olson, R S (1998), "Disasters and political unrest: an empirical investigation," *Journal of Contingencies and Crisis Management* 6: 153-61.
- <sup>38</sup> Ibid.
- <sup>39</sup> *Climate Change as a Security Risk*, German Advisory Council on Global Change (WBGU), London, 2007.
- <sup>40</sup> *Climate Change as a Security Risk*, German Advisory Council on Global Change (WBGU), London, 2007.
- <sup>41</sup> *The Stern Review on the Economics of Climate Change*, HM Treasury, London, 2006.
- <sup>42</sup> "Rivers Run Dry: An Interview with Fred Pearce" by Paul Comstock, *California Literary Review*, 03.04.2007.
- <sup>43</sup> *Climate Change as a Security Risk*, German Advisory Council on Global Change (WBGU), London, 2007.
- <sup>44</sup> For example *The Age of Consequences: The Foreign Policy and National Security Implications of Global Climate Change*, Center for Strategic and International Studies (CSIS) and Center for a New American Security (CNAS), 2007, p.10: "Perhaps the most worrisome problems associated with rising temperatures and sea levels are from large-scale migrations of people — both inside nations and across existing national borders."
- <sup>45</sup> IPCC 2007b p. 435.
- <sup>46</sup> *The Age of Consequences: The Foreign Policy and National Security Implications of Global Climate Change*, Center for Strategic and International Studies (CSIS) and Center for a New American Security (CNAS), 2007.
- <sup>47</sup> The IOM International Migration Law Database: <http://www.imldb.iom.int/section.do>
- <sup>48</sup> The 1990 Convention on the Protection of the Rights of Migrant Workers is a step to improve the situation of the economic migrants who are migrant workers. The International Labour Organization are engaged in the rights and legal regulation of migrant workers.
- <sup>49</sup> Wood, W.B. (2001), "Ecomigration: Linkages between Environmental Change and Migration," in *Global Migrants, Global Refugees*, Oxford: Berghahn.
- <sup>50</sup> The 2006 UNCHR Statistical Yearbook is available here: <http://www.unhcr.org/cgi-bin/texis/vtx/home/opendoc.pdf?id=478ce0532&tbl=STATISTICS>  
In addition to the 9.9 million, 4.4 million Palestinian refugees falling under the responsibility of UNRWA are not included in UNHCR statistics.
- <sup>51</sup> Cooper, J, (1998), "Environmental Refugees: Meeting the Requirements of the Refugee Definition," 6 *N.Y.U. Envtl. L.J.* 483 1997-1998
- <sup>52</sup> *United Nations High Commissioner for Refugees Handbook on Procedures and Criteria for Determining Refugee Status under the 1951 Convention and the 1967 Protocol relating to the Status of Refugee*, paragraph 53.
- <sup>53</sup> Cooper, J, (1998), "Environmental Refugees: Meeting the Requirements of the Refugee Definition," 6 *N.Y.U. Envtl. L.J.* 483 1997-1998
- <sup>54</sup> Gemenne, F (2007) "Climate Change and Forced Displacements: Towards a Global Environmental Responsibility?" Paper presented at the 47th Annual Convention of the International Studies Association (ISA), San Diego (CA), 22-25 March 2006.
- <sup>55</sup> *Refugees Magazine*, No. 147, 2007, UNHCR.
- <sup>56</sup> See the landmark judgments *Soering v. the United Kingdom* 7 July 1989 and *Chahal v. the United Kingdom* 15 November 1996.
- <sup>57</sup> A case that illustrates what can be included as ill-treatment and of interest to the environmental cases, is *D. v. the United Kingdom*, 2 May 1997, concerning a man with AIDS who was not returned from the UK to St. Kitts because of inadequate medical services on the island.
- <sup>58</sup> The IDMC *Global overview of trends and developments in 2007*, available from April 2008: [www.internal-displacement.org](http://www.internal-displacement.org)
- <sup>59</sup> McDowell, C, and Morrell, G, (2007), *Non-conflict Displacement: A Thematic Literature and Organisational Review*, Internal Displacement Monitoring Centre of the Norwegian Refugee Council (IDMC).
- <sup>60</sup> Birkeland, N (2003) "Last time I fled because of war, this time because of hunger" – Environmental Change and Internal Displacement in the Huambo Province, Angola", in *In the Maze of Displacement*, Kristiansand (Norway), Høyskoleforlaget.
- <sup>61</sup> Lafontaine, E (2007), *The Need for A New Instrument to Deal With "Environmental Refugees"*, Master thesis at the University of Oslo, available at:

<http://wo.uio.no/as/WebObjects/theses.woa/wa/these?WORKID=65668>

<sup>62</sup> *Climate Change as a Security Risk*, German Advisory Council on Global Change (WBGU), London, 2007

<sup>48</sup> The 1990 Convention on the Protection of the Rights of Migrant Workers is a step to improve the situation of the economic migrants who are migrant workers. The International Labour Organization are engaged in the rights and legal regulation of migrant workers.

<sup>49</sup> Wood, W.B. (2001), "Ecomigration: Linkages between Environmental Change and Migration," in *Global Migrants, Global Refugees*, Oxford: Berghahn.

<sup>50</sup> The 2006 UNCHR Statistical Yearbook is available here: <http://www.unhcr.org/cgi-bin/texis/vtx/home/opendoc.pdf?id=478ce0532&tbl=STATISTICS>  
In addition to these 9.9 million, there are 4.4 million Palestinian refugees falling under the responsibility of UNRWA who are not included in UNHCR statistics.

<sup>51</sup> Cooper, J. (1998), "Environmental Refugees: Meeting the Requirements of the Refugee Definition," 6 *N.Y.U. Envtl. L.J.* 483 1997-1998

<sup>52</sup> *United Nations High Commissioner for Refugees Handbook on Procedures and Criteria for Determining Refugee Status under the 1951 Convention and the 1967 Protocol relating to the Status of Refugee*, paragraph 53.

<sup>53</sup> Cooper, J. (1998), "Environmental Refugees: Meeting the Requirements of the Refugee Definition," 6 *N.Y.U. Envtl. L.J.* 483 1997-1998

<sup>54</sup> Gemenne, F (2007) "Climate Change and Forced Displacements: Towards a Global Environmental Responsibility?" Paper presented at the 47th Annual Convention of the International Studies Association (ISA), San Diego (CA), 22-25 March 2006.

<sup>55</sup> *Refugees Magazine*, No. 147, 2007, UNHCR.

<sup>56</sup> See the landmark judgments *Soering v. the United Kingdom* 7 July 1989 and *Chahal v. the United Kingdom* 15 November 1996.

<sup>57</sup> A case that illustrates what can be included as ill-treatment and of interest to the environmental cases, is *D. v. the United Kingdom*, 2 May 1997, concerning a man with AIDS who was not returned from the UK to St. Kitts, where the medical services were inadequate and he lacked a social network.

<sup>58</sup> The IDMC *Global overview of trends and developments in 2007*, available at: [www.internal-displacement.org](http://www.internal-displacement.org)

<sup>59</sup> McDowell, C, and Morrell, G, (2007), *Non-conflict Displacement: A Thematic Literature and Organisational Review*, Internal Displacement Monitoring Centre of the Norwegian Refugee Council (IDMC).

<sup>60</sup> Birkeland, N (2003) "Last time I fled because of war, this time because of hunger" – Environmental Change and Internal Displacement in the Huambo Province, Angola", in *In the Maze of Displacement*, Kristiansand (Norway), Høyskoleforlaget.

<sup>61</sup> Lafontaine, E (2007), *The Need for A New Instrument to Deal With "Environmental Refugees"*, Master thesis at the University of Oslo, available at: <http://wo.uio.no/as/WebObjects/theses.woa/wa/these?WORKID=65668>

<sup>62</sup> *Climate Change as a Security Risk*, German Advisory Council on Global Change (WBGU), London, 2007

<sup>63</sup> *Human Development Report 2007/2008*, UNDP.

<sup>64</sup> Porritt, Jonathan, *Seeing Green* (1984), Oxford: Blackwell.

<sup>65</sup> Shiva, Vandana: *Staying Alive: Development, Ecology and Women* (1989), London: Zed Books.

<sup>66</sup> *Human Development Report 2007/2008*, UNDP.

<sup>67</sup> Report No. 9 (2007-2008) to the Storting, *Norwegian policy on the prevention of humanitarian crises*

<sup>68</sup> *Human Development Report 2007/2008*, UNDP.

<sup>69</sup> Castles, S (2002), "Environmental change and forced migration: making sense of the debate", UNHCR Working Paper No. 70.





# **NORWEGIAN REFUGEE COUNCIL**

## **The Norwegian Refugee Council (NRC)**

is an independent, humanitarian non-governmental organisation which provides assistance, protection and durable solutions to refugees and internally displaced persons worldwide.

**[www.nrc.no](http://www.nrc.no)**