

Climate change and migration:

The debate on causality and the legal position of affected persons

Climate change and its consequences have become a fixture for many political agenda. Controversial though discussion about climate change may be, there is international and cross-party political consensus that global warming is going to be one of the greatest political, economic and social challenges for the coming years.

In social terms in particular climate change plays an increasingly important role. The consequences of global warming already present are confronting whole societies with enormous burdens, whether this is due to increasing rainfall and floods in some areas, the scarcity of rainfall and prolonged drought periods in others, or failed harvests or a shortage of drinking water. International organisations, representatives of various governments as well as experts on climate and migration all around the world are meanwhile discussing the possible effects of climate change on global migration processes.

Climate experts assume that global warming may well lead to a global shortage or at least to a displacement of cultivable land. The reasons for this are as diverse as are the impacts of climate change; rising sea levels will lead to more frequent flooding and storms in coastal and delta regions, small island states and low-lying coastal regions could disappear completely as a result. In some regions rainfall will increase significantly, provoking periodic flooding, while in other regions precipitation will quickly decrease, rapidly promoting droughts and desertification. Soil erosion caused by sandstorms and the decline in vegetation will reduce agricultural productivity in these areas — often already low — to a minimum, potentially endangering the food supply for major regions as a whole. The creeping effects of global warming and the associated increase in extreme weather events, as well as the deterioration in living conditions, may give rise to new migration streams.

This policy brief deals with the phenomenon of *environmental migration*. It focuses entirely on the effect of climate change on global migratory movements without neglecting the environmental consequences on the regions of origin and destination. The following paragraphs will firstly contain a comparison of estimates as to how many people will be affected worldwide and an introduction of those areas where climate change is most likely to cause migration. The brief will then examine the two main controversies concerning this phenomenon: the causality relationship between environmental factors and new migratory movements as well as the legal position of the persons concerned. The conclusion emphasises the necessity of extending the protection of people affected by the phenomena of

climate change at the international level, even if it cannot be assumed that there is an exclusive causal relationship between climate change and migration.

Estimates

Reliable statistical data cannot be collected as there is not an internationally recognised definition for the phenomenon of climate-induced migration. In addition, estimates are also hindered by the fact that an immediate connection between the consequences of climate change and migration cannot be clearly demonstrated. In the absence of authoritative forecasts, there is a series of estimates based on unsupported assumptions (so-called *guesstimates*). The figures vary depending on which climatic, demographic and social values the estimates are based on. Under favourable conditions, there may be only a slight increase in current migratory movements, but under unfavourable conditions even high estimates appear to be too low.¹

In 2002 the UNHCR estimated the number of people forced into migration as a result of flooding, famine and other environmental factors at 24 million² and later the number of persons displaced internally as a result of natural catastrophes alone at 25 million.³ The German Advisory Council on Global Change (WBGU) assumes that 10-25 % of all global migratory movements are the result of climate change and its consequences; that would be the equivalent today of an absolute number of 25-60 million migrants. The *United Nations University – Institute for Environment and Human Security*, or UNU-EHS, in Bonn estimated the number of environmental migrants up to 2010 to be at least 50 million. The Intergovernmental Panel on Climate Change anticipates a total of up to 150 million migrants as a result of climate change by 2050.⁴ The United Kingdom's Stern Review bases its estimate on a review of a large number of studies and forecasts and concludes that there are likely to be 200 million environmental migrants by 2050. The figures of Oxford professor Norman Myers are also widespread; he anticipates more than 200 million environmental migrants by 2050.⁵

Affected areas

In addition to the estimates given above, even the size of the population in areas that will be particularly affected by climate change can provide a useful reference as to the number of peo-

ple who will be facing special climatic challenges in future and who may possibly regard migration as an alternative. The United Nations standing committee responsible for determining internationally recognised terminology (*Inter-Agency Standing Committee, IASC*)⁶ has identified four important scenarios that are likely to trigger migratory movements:

- I. *Hydro-meteorological extreme hazard events*
- II. *Environmental degradation and/or slow onset extreme hazard events*
- III. *Significant permanent losses in state territory*
- IV. *Armed conflict/violence over shrinking natural resources*

It is a decisive aspect in all scenarios that climate-related migratory movements may take place both within the affected nation states and across international borders, and may be further assigned case-by-case to a continuum of voluntary migration, preventative migration and refugeeism. Such migration may also be either temporary or permanent.

Endangered states are deemed in general to be the poorly developed island states (Small Island Developing States, or SIDS), the sub-Saharan states, Asian coastal states, the Polar region, African developing states (Less Developed Countries, or LDC), the least developed countries worldwide (Least Developed Countries, or LLDC), the Near and Middle East, and Central Asia.⁷ Depending on the nature of the consequences of climate change, areas affected in line with the IASC scenarios may be divided into the following categories.

Areas affected by significant, permanent losses in state territory

This phenomenon comes as a result of rising sea levels and will most probably affect the South Pacific island states in particular (Carteret Islands, Kiribati, the Maldives, the Marshall Islands, Palau, the Solomon Islands, Tokelau, Tuvalu and Vanuatu), which have come to be known as “Sinking Islands”, but also low-lying coastal regions in Alaska and the Bay of Bengal. As a result of land losses and the salinisation of coastal regions, some states have already started to permanently relocate inhabitants of their island states, while other countries are not ruling out the possibility of the permanent relocation of all or large parts of their populations.⁸ The possibility of relocation to a receiving

country or else the founding of new states on uninhabited islands or ceded territories could be considered.

Flood areas

The rise in sea levels in particular, as well as its hydro-meteorological consequences (increase in periodic floods, tropical storms, coastal erosion, salinisation of coastal waters), represents an important possible inducement for mass-migration. This would affect coastal regions, in addition to small island nations. According to the Stern Review, by 2080 between 10 and 300 million people will have been affected by the rise in sea level alone, assuming a temperature rise of between 2°C and 4°C. The IOM estimates that an one-metre rise in sea level would affect 360,000 kilometres of coastline worldwide. Roughly two thirds of the world’s population live no further than 100 km from the coast, and areas that lie a maximum of ten metres above sea level alone, the so-called *Low Elevation Coastal Zone (LECZ)*, are home to 634 million people – nearly a tenth of the world’s current population. Of these, 360 million live in large towns near the coast (in other words, 13% of the global population living in towns). Most of the people in the zone that is affected by rising sea levels live in Asia, Africa and Europe. A current study on the rate of urbanisation in the LECZ recently showed that, alongside the small island states, the densely settled and heavily urbanised deltas and coastal areas in Asia and Africa are particularly exposed to an increased risk of flooding.⁹

Not everyone in the LECZ will have to leave their homes, but rising sea levels could place those in low-lying areas and areas near the coast in acute danger. According to a study carried out by the Potsdam Institute for Climate Impact Research, there are already about 200 million people living in coastal areas that lie less than a metre above sea level. Thirty of the world’s 50 biggest cities lie directly on a seacoast. In the event of a rise of just one metre, according to the study, Egypt’s Nile Delta and close

Table 1: Most strongly affected states with coastal areas up to a maximum of 10 m above sea level (LECZ)

States ranked according to population in LECZ			States ranked according to population percentage in LECZ		
State	Population	In Percent	State	Population	In Percent
1. China	143,879,600	11	1. Bahamas	266,580	88
2. India	63,341,208	6	2. Suriname	317,683	76
3. Bangladesh	62,524,048	46	3. Netherlands	11,716,861	74
4. Vietnam	43,050,593	55	4. Vietnam	43,050,593	55
5. Indonesia	41,609,754	20	5. Guyana	415,456	55
6. Japan	30,477,106	24	6. Bangladesh	62,524,048	46
7. Egypt	25,655,481	38	7. Belize	91,268	40
8. USA	22,859,359	8	8. Djibouti	248,394	39
9. Thailand	16,478,448	26	9. Gambia	510,159	39
10. Philippines	13,329,191	18	10. Egypt	25,655,481	38

Source: Balk (2008).

The listed countries have a minimum population of 100,000 people and a minimum area of 1,000 km². This therefore omits, for example, the Maldives, whose total population according to the study carried out by the Potsdam Institute for Climate Impact Research is resident within the LECZ. In addition, there are 15 small island states with a total population of 423,000 where more than 39% of the population is living in low-lying coastal regions.¹² These are also not included here.

to a fifth of Bangladesh (with 35 million inhabitants) would be especially affected, as too would large areas of Suriname, Guyana, French Guiana, the Bahamas, Benin, Mauritania, Tunisia, the United Arab Emirates, Pakistan, India, Vietnam and China.¹⁰ In Europe, an estimated 13 million people would be threatened by a one-metre rise in sea level (especially in the Netherlands and Denmark), including about 3.2 million in the German flood plains.¹¹ Should sea levels rise by up to one metre, as anticipated, people living in low-lying coastal areas and sea deltas around the world will have hardly any other alternative than to emigrate to other areas.

Drought zones

Numerous other areas will in future have to contend with a shortage of drinking water due to climate change. The authors of several UN Millennium Ecosystem Assessment studies established that droughts, desertification and the associated decline in agricultural yields are among the strongest factors that will cause people from arid areas to migrate to other regions. The reason for this lies in the far-reaching impact of water shortage, which will bring with it difficulties in supplying drinking water, loss of harvest and health and hygiene problems.¹³

Already today there are more than 1.2 billion people living in regions where there is a shortage of fresh water, i.e. where natural fresh water resources are insufficient to cover the needs of the people living there.¹⁴ This especially affects the northern and sub-Saharan states of Africa, the Near and Middle East, the former constituent republics of the Soviet Union in Central Asia, as well as South East Asia and extensive parts of North China. Some countries in Central and South America also already have to contend with a shortage of water. In all these regions the impact of climate change may lead to longer drought periods, desertification and substantial soil erosion.

Regions vulnerable to conflict over natural resources

In addition to emigration movements, the impact of climate change may also lead to conflict over resources. An external WBGU report concludes that, where possible climate-related conflict is concerned, the core regions are in Africa, Asia and Latin America. The climate-induced decrease in cultivable land and water resources affects a population with a growing percentage of youth who already today are likely to migrate into the cities. This could promote religious, ethnic and civil conflict.¹⁵ The number of inhabitants in regions directly at risk of conflict over resources is approaching one hundred million. If we then add to these the number of inhabitants in areas at indirect risk, the number of potentially concerned persons rises to over one billion.

No matter which trigger for possible environmental migration we examine more closely, those most severely affected will be the small island states as well as the LDCs and LLDCs of Africa and Asia. But not all of the people living there will migrate for environmental reasons. Infrastructure measures to shore up the coasts, water management plans and new technologies might suffice in a large number of countries and regions to lessen the impact of climate change. Yet, even if only a few percent of the people affected by climate change become environmental migrants, their numbers may reach the scale of the currently

estimated refugees and internally displaced people (IDPs) (as at the end of 2008: approx. 42 million).

Debates on environmental migration

The connection between climate change and migration

The fact that the rise in sea levels or salinisation of coastal areas as *climatic processes*, or hydro-meteorological natural catastrophes as *climatic events*, may trigger migratory movements is not disputed. However, environmental migration does not result from a single cause, but rather incorporates complex interactions of existing social, demographic and political contexts.¹⁶ When considering migratory movements in association with climatic processes or events, therefore, a distinction must be made between climatic and non-climatic migration factors, since migration is not necessarily going to occur for reasons of climatic events alone.

In this regard, adaptation strategies play a decisive role, for a society's vulnerability always results from its particular risk situation in a geographic sense and the efforts such a society makes to adapt.¹⁷ Thus hydro-meteorological catastrophes such as floods or tropical storms only lead to relevant migration phenomena if there have previously been political and social failures to adapt to the specific geographical risk. In the absence of early warning systems, cross-institutional rescue plans, flood plains or dams, a society's vulnerability in the event of hydro-meteorological catastrophes is increased, as evidenced by the impact of the 2004 seaquake in the Indian Ocean. The tidal waves of the resultant tsunami destroyed entire coastal regions in the Bay of Bengal and South East Asia. At least 165,000 people were swept to their deaths and 1.7 million were left homeless. Some of the main reasons for the devastating impact of the tsunami were the lack of an international early warning and information system as well as the uncoordinated and partially non-existent evacuation of coasts in the affected region. The razing of mangrove forests and elimination of flood zones in coastal areas, as well as their settlement, also contributed to the enormous casualty figures.

Not only catastrophes lead to emigration. It is even estimated that the steady degradation of habitable land due to climate change will in future be the most important trigger for international migration.¹⁸ These predictably long-term consequences of climate change already represent a special challenge to the societies that may be affected, for the ecologically induced loss of habitable land is fundamentally "a social problem that can be avoided."¹⁹

Environmental migration is related to issues that make migration not only necessary, but also attractive, the so-called *pull* factors. These may be of a demographic, social, political or cultural nature. Population pressure, poverty, poor social welfare systems as well as poor governance in states affected by climate change are as decisive triggers for migration as climatic conditions. At the same time, environmental migration takes place in developing countries in an environment of urbanisation for economic reasons, making it difficult to distinguish environmental migration from "normal" migration in metropolitan catchment areas. Climate change is only one factor in a bundle

of factors of varying strength. Migration itself can be interpreted as a means of adapting to the socio-economic and political realities under the conditions of a changing environment.²⁰ In cases of particularly drastic governmental mismanagement this can mean that a climatic event serves solely as an inducement to migrate, although the main causes are of a political and socio-structural nature.²¹

Environmental migration is therefore not solely based on a simple matter of cause and effect wherein migration is always triggered by climatic conditions alone. It is in fact much more complex than that.²² If we wish to understand the motives for migratory movement, then previously-existing *pull* factors in particular play a decisive role.²³

This mutual influence and overlapping of environmental factors with political, social and cultural aspects of migration means that it is not possible to differentiate clearly between voluntary and forced migration,²⁴ which in turn affects the definition and treatment of people affected by environmental migration.

Categorisation of affected persons

There have been numerous attempts to find terminology and definitions for the migration scenarios described above. In addition to the term *environmental migration* used here, there are such expressions as *climate change migration*, *forced migration* and *environmental refugeeism*. In the English-speaking world the composite term *climigration* is increasingly common. As environmental migration also concerns a mingling of economic and ecological factors and it is virtually impossible to make a clear distinction between these aspects, some authors also refer to *ecomigration*.²⁵

The affected people are mostly referred to as *environmental migrants*, but also as *forced climate migrants*, *environmental refugees* or *environmentally displaced persons*. The terms used for affected people is of decisive importance for categorisation as a migrant or refugee and the resulting consequences with regard to the international obligation to protect or provide for such people. In contrast to migrants, refugees are granted rights by the Geneva Convention concerning aid and services of the United Nations High Commissioner for Refugees (UNHCR) and may not be deported by receiving states (non-refoulement).

The term *environmental migrant*, coined by the IOM, is finding increasing international acceptance. To facilitate an initial basis for further research and data collection on the phenomenon, the IOM presented a working definition, according to which environmental migrants are “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”. This definition seizes on the dimensions considered by the IASC of duration, direction and voluntariness of the migration.

Scientists involved in the European research project EACH-FOR (*Environmental Change and Forced Migration Scenarios*) based their studies on a three-part working definition. They distinguish between *environmentally motivated migrants*, *environ-*

mentally forced migrants and *environmental refugees*. The environmentally motivated migrants differ from the latter two insofar as their change of location is voluntary. The difference between environmentally forced migrants and environmental refugees lies in the fact that forced migrants are subjected to a planned and long-foreseeable, but inevitable migration, whereas climate refugees are forced into sudden emergency migration by catastrophic scenarios. The EACH-FOR working definition does not consider whether in addition to the consequences of climate change there are also social, economic or political inducements to migration, whether the migration is temporary or permanent or whether the migration is only internal or also includes crossing state borders.²⁶ Like the IOM, the EACH-FOR study picks up on the idea of three levels of duration, direction and voluntariness, but emphasises more strongly than the IOM the possibility of there being mixed causes for migration.

Analogous to the term *Internally Displaced Persons* (IDP), the Norwegian Refugee Council pleads for the descriptive term *Environmentally Displaced Persons* (EDP). This description includes all 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”.²⁷ The NRC picks up solely on the aspect of direction, i.e. both internally displaced persons and international refugees are included in the definition. The organisation does not consider either the possibility of voluntary migration, such as is allowed for in the IOM definition. The variation of migration triggers are not relevant for the categorisation as a climate migrant, but only the fact that the consequences of climate change are the main trigger of migration.

Controversy has developed in expert circles in particular with regard to the term *environmental refugee*.²⁸ The reason for this lies in the special legal protection enjoyed by refugees in accordance with the Geneva Refugee Convention (GRC) and additional protocols.

Essentially the question is whether persons affected by climate change should in future be granted refugee protection in accordance with the GRC and its additional protocols. Article 1 A(2) of the convention states that the term refugee shall apply to any person who “owing to 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; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it.” As soon as these facts have been proven, the person concerned is granted refugee status.

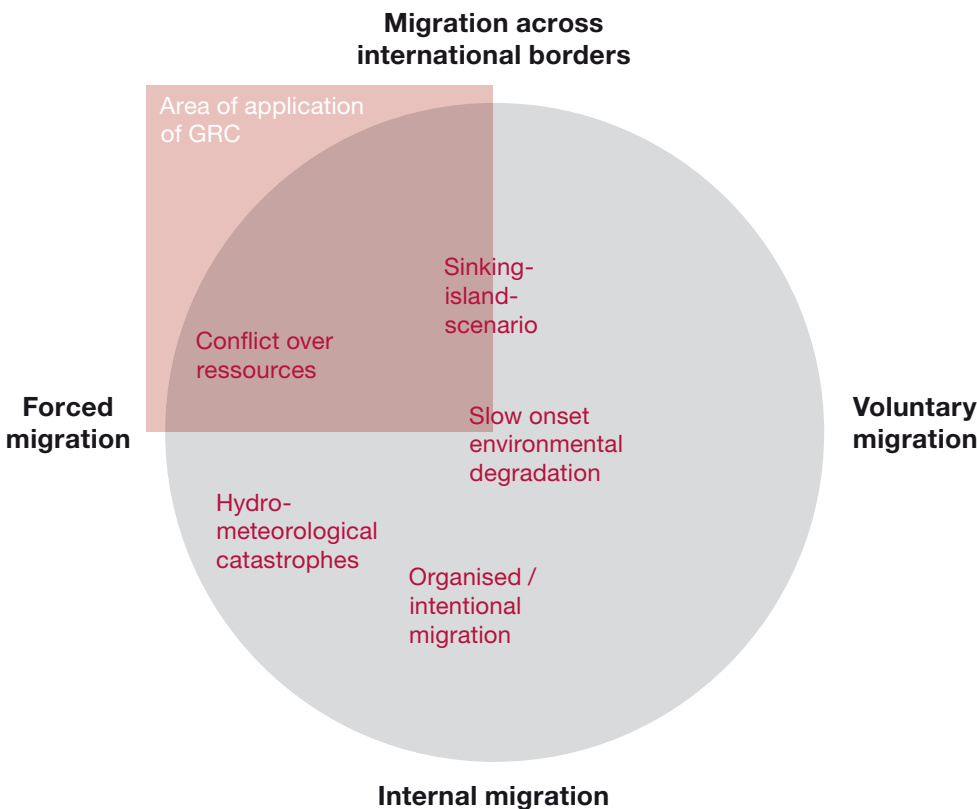
The UNHCR rejects the use of the terms climate and environmental refugee as a matter of principle, since it fears that the term refugee established by the GRC and its additional protocols could be undermined by the category *environmental refugee*. Other UN organisations²⁹ that come together under the aegis of the IASC, as well as the IOM, fear that the introduction of the term *environmental refugee* may undermine the established legal instruments for protecting refugees.

The basic conditions for refugee status formulated in the GRC, i.e. the fact of persecution and cross-border migration, would not be met in the case of environmental migration. The impact of climate change does not as yet count as persecution, the majority of the affected persons are internal migrants and therefore still within the protection of their own country. They are therefore less in need of international aid than Convention refugees, according to the UNHCR.³⁰

The UNHCR points out that under some circumstances some persons affected by climate-induced migration would meet the conditions for the granting of refugee status in accordance with the GRC. If persecution can be proved for persons fleeing conflict caused by climate problems, then the refugee condition is satisfied. Citizens of the “sinking islands” could also satisfy the GRC conditions if they migrate across borders, because such cases would potentially be a new form of statelessness. If countries of origin were to lose their entire territory, the affected persons could then be treated as stateless and thereby fall under the protection of the Geneva Refugee Convention (GRC) and the attached protocols.

However, the granting of refugee status in the case of the sinking islands scenarios is disputed because it is closely associated with organised or intentional migration. Such intended or tolerated migration can be the result of governmental projects such as the construction of dams or the establishment of flood plains.³¹ Both voluntary internal migration (motivated by compensation payments) and forced relocation both within national borders and across international borders occur here.

Figure 1: Climate-induced migration within the continuum of the GRC-definition of refugee



Source: Author.

Essentially, however, the UN Refugee Agency seems to be concerned with preventing the extension of its own mandate due to its already considerable burden at a time when it is financially stretched. It may indeed be one of the organisation’s obligations, according to a UNHCR paper, to point out to the international community the gaps in the protection offered to the people concerned, but it is by no means striving to extend its own remit by this means.³²

In addition, the industrialised nations in particular, which are primarily responsible for climate change, reject the term environmental refugee.³³ Both UN organisations and representatives of industrialised nations constantly refer to the fact that, given the multifaceted and overlapping causes of migration (see above “The connection between climate change and migration”), it is almost impossible to identify the impact of climate change as a main trigger of migratory movements, voluntary or otherwise, with the result that it cannot be proved that any flight is caused primarily by the effects of climate change.

Two scientists working on the EACH-FOR project, Olivia Dun and François Gemenne, counter this argument by pointing out that under the Geneva convention refugees are not anyway required to demonstrate persecution as the main reason for their migration, but rather, the decisive factor for granting refugee status is whether persecution in accordance with Article 1 has actually taken place or not. As soon as any association has been shown between persecution and flight, then according to Dun und Gemenne decision-makers could grant refugee status.³⁴

The Norwegian Refugee Council (NRC), which can identify no conclusive definition of the required state of persecution in the UNHCR regulations, also believes that it is entirely possible to recognise climate change as a form of persecution.³⁵ Thus Paragraph 53 of the *UNHCR Handbook on Procedures and Criteria for Determining Refugee Status* provides for the recognition of refugee status on the basis of “cumulative grounds”, not in themselves amounting to persecution, but which, if taken together “produce an effect on the mind of the applicant that can reasonably justify a claim to well-founded fear of persecution”.³⁶ According to the NRC, this concept leaves room for interpretation such that environmental refugees can be protected under the GRC and associated UNHCR regulations.

Moreover, human rights organisations assert that people affected by environmental migration are being robbed of their fundamental right to protection in a situation similar to that of refugees. These people are, by virtue of this, permanent refugees and

Table 2: Environmental migration scenarios: major aspects

Scenario	Nature of Migration	Affected Countries & Regions	Legal Protection	Legal Loopholes
Natural catastrophe	<ul style="list-style-type: none"> - Temporary, voluntary or forced movement within national borders or across international borders - Permanent forced relocation 	Coastal areas and sea deltas <i>China, Bangladesh, India, Indonesia, Vietnam, Japan, Egypt</i>	<ul style="list-style-type: none"> - Internal movement protected by guiding principles for IDPs and international human rights law (HRL) 	<ul style="list-style-type: none"> - Unlike refugees, those moving across international borders are not legally entitled to admission to another country - UNHCR protection only for persons who are excluded from other aid due to their ethnic, religious or national affiliation
Slow-onset environmental degradation	<ul style="list-style-type: none"> - Gradual processes, beginning with voluntary movement in- and outside a country through to flight - Possible relocation processes 	Coastal areas and arid regions <i>Sub-Saharan Africa, Central and South East Asia, Latin America</i>	<ul style="list-style-type: none"> - Internal movement protected by guiding principles for IDPs and international HRL - Environmental migrants crossing international border protected by individual national regulations 	<ul style="list-style-type: none"> - Recognition of impact of climate change as “cumulative grounds” in the context of the GRC is questionable - EU protection is at the discretion of the European Council - Application of the principles of <i>non-refoulement</i> questionable
Sinking islands	<ul style="list-style-type: none"> - Gradual processes with voluntary movement inside and outside a country through to flight - Forced and permanent migration due to loss of state territory 	Small island states <i>Maldives, South Pacific island states such as Kiribati, Tuvalu and Palau, Caribbean Islands</i>	<ul style="list-style-type: none"> - Internal movement protected by guiding principles for IDPs and international HRL - UNHCR protection in event of ensuing statelessness - Protection due to obligation of every state to protect against a threat to the right to life 	<ul style="list-style-type: none"> - If a state loses its territory it is unclear whether the citizenship of those affected would continue to be recognised or whether they would be rendered stateless, thereby becoming the responsibility of the UNHCR - EU protection is at the discretion of the European Council
Conflict	<ul style="list-style-type: none"> - Flight from regions of conflict within a state or across international borders 	States and regions lacking resources <i>Sub-Saharan Africa, Near and Middle East, South and South East Asia</i>	<ul style="list-style-type: none"> - Internal flight protected by guiding principles for IDPs and international HRL - Movement across international borders protected in cases of verifiable persecution under the Geneva Refugee Convention as well as the principles of <i>non-refoulement</i> 	<ul style="list-style-type: none"> - Protection after movement over international borders only in cases of verifiable persecution
Expropriation	<ul style="list-style-type: none"> - Programmes for permanent internal forced relocation 	States prone to natural catastrophe and lacking resources <i>China, India, Bangladesh</i>	<ul style="list-style-type: none"> - Possibly protected by national legislation - International HRL 	<ul style="list-style-type: none"> - No binding international protection

Source: Author.

should therefore also be treated as such. A corresponding category of *environmental refugee* is therefore only logical.³⁷ Moreover, the migratory movement is a reaction to an externally induced circumstance, similar to a threat or persecution as provided for by the GRC as a condition of refugee status. The organisations therefore plead both for the introduction of the term *environmental refugees* and for an extension to the content of the GRC to recognise such people as “genuine” refugees.

The protection offered to environmental migrants is currently precarious. To date there is still no internationally recognised document requiring that the international community of nations should provide support for environmental migrants in

the event that their country of origin is unable to do so. Existing regulations do not oblige international states to take in environmental migrants.³⁸ Those agreements that do exist can either only be applied in exceptional cases or can be interpreted too broadly to offer reliable protection, or else they are only “can” regulations with no binding effect.

Conclusion

The effects of climate change, alongside other socio-economic factors, are a trigger for existing and future migratory

movements. In practice, however, it will be difficult to make a clear distinction between these triggers in order to identify environmental migration as demanded by some scientists. Specialist literature is divided on the subject of environmental migration. Whereas some scientists deny its existence and speak instead of economic and poverty-driven migration, others regard climate change to be the main reason for migratory movements worldwide.

Environmental migration, like every other social process, takes place within a socio-economic context, so that attempts to draw a precise dividing line between it and other causes of migration, such as war, poverty or climate change, are, in the author's view, doomed to failure from the outset. Nonetheless, it can be assumed that a considerable number of people will be confronted in coming decades with such phenomena as rising seas levels, expanding desert regions and a lack of fresh water. As a result, many of these people will migrate within national borders or across international borders either voluntarily or in flight. Nonetheless, economic, political and cultural aspects of migration must also be considered in order to take account of the complexity of environmental migration. It takes place under the influence of various push- and pull-factors so that answers based on a single cause are not sufficient.

It will be a great challenge in future to decide what status – and consequently what legal status – the affected people are to be granted. International legal norms provide too little protection for environmental migrants, partly due to the absence of any recognition of this new migration phenomenon. The Geneva Refugee Convention (GRC) and its additional protocols only consider some environmental migrants under certain circumstances and therefore do not offer any comprehensive protection. Only a few of today's environmental migrants satisfy the conditions of the GRC, so the majority of persons affected are not currently treated as refugees under current legal conditions. Nor do the legal instruments of nation-states or regions provide environmental migrants with comprehensive protection. It is therefore urgently necessary that regulations should recognise the phenomenon of environmental migration and be adapted to accommodate it. In order not to endanger existing categories, an additional protocol or a new convention appears more meaningful and likely of success than amending the GRC. Furthermore, new regional and national agreements could additionally protect the rights of environmental migrants.

Since the responsibility for climate change rests primarily with the western industrial nations, they are especially responsible for those suffering environmental migration. How far they are ready to meet that responsibility – whether through taking in such people or by providing considerable support in lessening the impact of climate change – will be decisive for the protection of environmental migrants. However, the countries from which environmental migrants originate also have great responsibility towards their citizens and are obliged to do their best to protect their lives. They must take preventive measures to adapt to the consequences of climate change and lessen their impact over both the short and long term.

Climate change presents the international community with great challenges, which can only be overcome if communities work together. Dealing with environmental migration is one of

those challenges. If appropriate measures are to be taken, then it is vital to gather additional information about environmental migration. Research into this area should therefore be significantly intensified.

Endnotes

- ¹ Brown 2008.
- ² UNHCR 2002.
- ³ UNHCR 2008b.
- ⁴ Acketoft 2008.
- ⁵ Stern 2006, Graeme 2008.
- ⁶ IASC, 2008.
- ⁷ Kolmannskog 2008.
- ⁸ Kelman 2008; Loughry & McAdam 2008; Cameron-Glickenhau 2008.
- ⁹ Balk 2008.
- ¹⁰ Jakobeit & Methmann 2007.
- ¹¹ Endlicher & Gerstengabe (eds.) 2008.
- ¹² Endlicher & Gerstengabe (eds.) 2008.
- ¹³ Millennium Ecosystem Assessment 2005.
- ¹⁴ Molden 2007.
- ¹⁵ Clark 2007.
- ¹⁶ Acketoft 2008, WBGU 2007.
- ¹⁷ Brown 2008.
- ¹⁸ Warner 2009.
- ¹⁹ Bogardi et al. 2007.
- ²⁰ Graeme 2008, Warner 2009, WBGU 2007.
- ²¹ Acketoft 2008.
- ²² Brown 2008.
- ²³ Jakobeit & Methmann 2007.
- ²⁴ UNHCR 2008a, Zehrer 2009.
- ²⁵ Kolmannskog 2008.
- ²⁶ Bogardi et al. 2007.
- ²⁷ Kolmannskog 2009.
- ²⁸ Bogardi et al. 2007.
- ²⁹ UNICEF, UNDP, FAO, WFP, WHO, UNFPA, OCHA.
- ³⁰ UNHCR 2002.
- ³¹ Graeme 2008; UNHCR 2008a.
- ³² UNHCR 2008a.
- ³³ Acketoft 2008.
- ³⁴ Dun & Gemenne 2008.
- ³⁵ Kolmannskog 2008.
- ³⁶ UNHCR 2003.
- ³⁷ Biermann & Boas 2008, Pelzer 2008.
- ³⁸ Bogardi et al. 2007.

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