

Conference on “Environmental Change and Migration: From Vulnerabilities to Capabilities”

Jeanette Schade and Thomas Faist

Center on Migration, Citizenship and Development (COMCAD), Bielefeld University

Expert bodies such as the Intergovernmental Panel on Climate Change (IPCC) have claimed that climate change induces and reinforces the deterioration of living conditions in many parts of the world. Moreover, they have also warned of a dramatic increase in the flows of so-called environmental refugees. More recently the plight of the Maldivians, some of whom are already emigrating to Sri Lanka due to the permanent threat of inundation, reached the main television news all over the world. What is often overlooked, however, is that the impact of climate change goes much beyond land-loss due to sea-level rise, and that it is not just climate change but environmental degradation in general that imperils the livelihoods of hundreds of millions of people. Such degradation often results, for example, from overuse of natural resources, population pressure, and unsustainable development programmes. Current climate change – without much doubt itself predominantly anthropogenic – often aggravates such degradation and puts additional pressures on living conditions and the environment. As climate change increases vulnerability, experts and observers in the mass media have claimed that this vulnerability will be a major factor driving future migration flows, particularly in the global south. But as plausible as this argument may be, it neglects the fact that migration may not function simply as an expression of vulnerability but also of capability. Migration – in certain circumstances – serves to increase life-chances indirectly by insuring against risks such as crop failure or income loss more generally. Or it may open new possibilities for earning a living. This conference is meant to shed light on environmentally induced migration by integrating a *capabilities* perspective into current debates.

Vulnerability is usually defined as the propensity to be exposed to the risks of climate change and as a lack of capacity for resilience. Climate change researchers, who produced the influential forecast of 200 million environmental refugees by 2050, thereby interpret migration lopsidedly as a lack of adaptive capacity or as “adaptation of last resort” (Stern Review 2007). Environmentalists and, more recently, humanitarian aid organisations, have increasingly followed this argument in their claims for improved adaptation policies and

increased refugee aid. The underlying assumption is that more adaptation leads to less migration due to reduced vulnerability.

The main shortcomings of such a perspective are, first, that humans are mainly seen as being driven by external shocks, and not as autonomously acting creatures who make use of their options. Taking this view, migration turns out very often to be an expression of capabilities that allow for mobility. On other words, migration may not simply be a reactive response to external shocks but a proactive choice to improve living conditions. First, in many cases, migration as “exit” may be a reasonable choice, in addition or preferred to other options, to improve living conditions, such as improving living conditions through “voice”, that is, voicing dissent and engaging in improvements *in situ* (Hirschman 1970). Migration is just one of many adaptation strategies, including infrastructural measures (e.g. building dykes and embankments) or agricultural innovations (e.g. floating gardens to grow produce in areas threatened by inundation). Also, local degradation can just as equally contribute to a decrease of migration flows, because people lose or are deprived of assets necessary for geographical mobility. Second, the strong emphasis on refugees assumes that environmental stress is confined to places of origin. Yet environmental change in destination places and along migration routes equally influences migration patterns.

Keeping these shortcomings in mind, the crucial question, then, is how environmental change impacts the interplay between vulnerabilities on the one hand and capabilities on the other hand, and how this relationship affects mobility patterns. A more comprehensive and interdisciplinary approach to the phenomenon of environmentally induced migration is thus necessary. To explore the issue in an interdisciplinary manner, the conference draws on the livelihood model which is appropriate to the capabilities approach, and regards those affected by environmental stress -above all as autonomous actors, not simply as victims.

The conference “Environmental Change and Migration: From Vulnerabilities to Capabilities” will take place December 05 to 09, 2010. It will focus on the relationship between vulnerabilities and capabilities and will serve as a platform to facilitate intensive discussions on open questions and methodological challenges. Invited researchers represent a wide range of fields, such as sociology, ethnology, gender studies, geography, economy, development, international relations, health care, geology, and climate or environmental change. The conference will bring together not only junior and senior scientists, but also experts from all sectors concerned with environmental change and migration, state representatives as well as non-state actors, to participate in discussions of research results, and to consider possible

consequences for policy formulation. Based on this first conference which highlights the role of capabilities for the study of environmentally induced migration, two prospective follow-up conferences will focus on the disputed issues of environmental refugees and threats to security.

Conference on “Environmental Change and Migration: From Vulnerabilities to Capabilities”

Concept Note

The following considerations outline in greater detail the ideas and concepts that will guide our conference. First, we clarify our point of departure, proposing to go beyond the current narrow focus on vulnerabilities. Second, we explain the approach envisioned for the conference, which broadens the vulnerability perspective and adds the dimensions of capabilities and transnationality. Third, an outline of the programme presents the questions to be addressed.

From vulnerabilities to capabilities

During the last two decades climate change research generated valuable data on the progress and impact of climate change. In its last report the IPCC ascertained that some of its previous predictions have been surpassed, particularly with respect to core climate change indicators such as carbon dioxide emissions, the rise of average temperatures, and the melting of glaciers and ice sheets. The latter, as well as desertification, will result in considerable land-loss, a condition which led various experts to put forward the plight of so-called climate migrants, who must leave their homes because climate change ostensibly forces them to do so (IPCC 2007a: 133-4; IPCC 2007b: 57; Jakobeit et al. 2007: 26f). The most influential estimate is that of Norman Myers, who predicted the number of climate refugees to be around 200 million by 2050 (Myers 2002). Most of these migration dynamics, according to the Stern Review on the economics of climate change, will take place in developing countries due to their geographic exposure to climate change events, the often poor state of their economies, the lack of adaptation capacities, and the large numbers of impoverished people. States in Africa and in South- and Southeast Asia especially will face major challenges. Subsequently, Stern calls environmentally induced migration “a last-resort adaptation for individuals, but one that could be very costly to them and the world” (Stern 2007: 111).

Indeed, through the negotiations of the successor to the Kyoto Protocol in the run-up to Copenhagen the expected migration flows and the question of how to manage them figure prominently in the public imagination and in policy debates. Some of the widely discussed related issues include the consequences for social stability, human security, the need for legal

recognition of environmental refugees, and finally the need for more public funds for adaptation measures to enable people to remain in their homes. The Stern Review estimates that it would cost about 1.3 billion USD to implement the most urgent protection measures for the 50 least developed countries. The costs of adaptation for all developing countries are, according to the World Bank, in the tens of billions USD (World Bank 2006). By comparison, international contributions to dedicated adaptation funds are projected to stay probably below 0.3 billion USD a year. These figures are striking when compared to the hundreds of billions approved to tackle the current financial crisis. No matter how this kind of funding is evaluated, the assumption underpinning much of the public discussion — that more adaptation leads to less migration due to reduced vulnerability — oversimplifies the issue.

The moment now seems to be at hand to ask what we actually know about environmentally induced migration. Should we rely on approaches that are usually based on calculating the extent to which densely populated coastal areas and mega-cities, located in flood prone areas, will be affected by sea-level rise? How reliable are the extrapolations made by humanitarian organisations who often consider every individual displaced by a natural event an environmental refugee, even though societal factors might have equally contributed to their fate? Indeed, there are only a few empirical studies on the subject of environmentally induced migration. And even those, as for example the studies of Each-For project financed by the EU-FP6, do not usually confirm the picture of the “human tide” (Christian Aid 2007). Therefore, migration experts such as Steven Castles strongly criticize the current constructions of environmentally induced migration for their lack of empirical and methodological depth, and lopsided focus on sudden and forced displacement. Current estimates, forecasts, and policy recommendations look at the relationship of environmental change and migration through the lens of ‘climate refugee’. (Indeed, a discussion on the various types of environmentally induced migration has already begun, ranging from terms such as ‘environmental refugee’ to ‘environmentally motivated migrant’ (see Renaud et al. 2007).)

By focusing primarily on vulnerabilities, current research and public debates interpret migration as a lack of coping capacities to deal with environmental change. Yet the established body of knowledge in migration studies clearly contradicts such an assumption. Migration research asserts that spatial mobility requires a range of assets which cannot be reduced to “having no other choice.” Overall, migration research has emphasized that cross-border migration in particular depends on the financial and social resources of persons involved and their significant others. It is not, therefore, mainly the poorest of the poor who

migrate long distances and across borders. Instead, resources such as financial means, information, supportive institutions, and access to migrant and migration networks are of prime importance. Destitute and poor persons usually do not have the means to migrate – beyond short distances and domestic movement. Their opportunities for both “voice” and “exit” are rather restricted (Faist 2000: chapters 1 and 2). The field studies of the Each-For-project support such a perspective, as they revealed that it is usually not the very poor who choose migration as a coping strategy. Migration may even slow down, because an environmental disaster deprives potential migrants and their families of the assets necessary to obtain mobility.

Certainly, the experiences of experts in climate change and humanitarian aid in collecting climate change data and carrying out disaster management have to be acknowledged. But it seems that such approaches are excessively focused on evaluating risks and vulnerabilities. The assumption underlying this perspective is that persons affected are simply victims, not autonomous acting subjects actively using assets at their disposal. What is missing is a fair assessment of the capabilities of individual, household, community, regional, and state levels. Vulnerability assessment is simply incomplete without examining potential capabilities. In looking at both vulnerability and capability we tread on more solid ground in our attempts to analyze migration and mobility patterns in the context of environmental degradation and climate change.

Unfortunately, misconceived understandings of mobility and migration quickly lead to a focus on conditions in sending countries, combined with the assumption that western states will be the main destinations. But to our knowledge, most environmentally induced migration flows – indeed, migration flows more generally – are internal to nation-states. There are only few examples of significant cross-border migration as, for example, in the cases of Ecuador and Tuvalu. Moreover, thinking in nation-state categories implicitly perpetuates the image that states are not only the main regulators of migration regarding exit and admission – which is certainly true – but are the main and primary unit in which social life is contained. This fallacy of conflating social life almost exclusively with the nation-state has been called “methodological nationalism”. Such a perception does not support a systematic examination of the transnational dynamics, including subnational dynamics, inherent in migration processes.

In sum, there are various research and policy gaps. First, although academic and even more so public discourse have started to differentiate between various categories of migrants as well as

diverse types of environmental change, there is little recognition of the underlying dynamics of mobility. Second, research in this field has not yet developed appropriate methodological approaches and tools to capture migration in the context of environmental change. Third, the one-sided focus on vulnerability harbors the danger of reinforcing clichés about the poor South, whose poor people will flood the rich North, which may lead to serious policy ramifications. Such stereotypes quickly dissolve into the usual politics of accusation and have no place in the type of analysis required to understand the phenomenon as well as to develop adequate policy measures. And there is some risk of losing the perspective of long-term development for the benefit of short-term relief.

The purpose of this conference is, therefore, to look beyond vulnerabilities and the fallacies of methodological nationalism. While we focus on the origin of migration flows within the south, we trace the transnational ties to the north. We take into account the predictions of climate change experts, according to which the global south will be hit harder than the developed world by environmental change. In doing so, however, we likewise intend to differentiate and counter widespread clichés regarding the helplessness of those vulnerable groups. Our main analytical lens for the conference will be that of capabilities and their relationship to vulnerabilities, which must be combined with a transnational approach.

Migration and environmental change: The methodological frame of the conference

Vulnerability, in climate change research, is understood as “a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity” (IPCC 2007b: 89). Within that discipline the term “system” is usually applied to ecosystems and geographical regions, and vulnerability is often treated as a characteristic of states.

The disaster relief and humanitarian aid communities, for their part, focus on the plight of people. To them the most vulnerable are usually the poorest persons. With the knowledge that poverty has many roots that are strongly related to societal structures, many in this community work with the concept of social vulnerability. This allows for the fact that not everybody in a region suffering sudden or slow-onset environmental changes is equally vulnerable. Further, it implies that vulnerabilities are closely linked to inequalities, which are, more often than not, reproduced by social structures and institutional settings. The capability to migrate is a result of inequality in assets. Migration, especially cross-border migration, is thus selective along resource availability, such as financial means, skills, social contacts, and networks of

reciprocity. Moreover, migration has the potential to increase inequalities as migrants often send monetary or in kind remittances to their households of origin, thereby improving the latter's assets in comparison to others. Such features also apply to environmentally induced migration. Thus, it can be both an expression of capabilities to improve livelihoods but also a result of no choices left other than the exit option.

Environmentally induced migration should, therefore, be embedded within the broader frame of the capabilities approach pioneered by Amartya Sen for development studies and since then adapted to various purposes (Sen 1982, 1992, 1999). According to Sen, capabilities are not the things that people may be able to do – their 'functionings' – but their capacity to choose and to live a life they value. For that of course, they need basic resources to make decisions on the functions they want to be fulfilled. Such functions include access to food or education, or mobility, and which are important to her/his idea of a good life, strongly depend on the assets at her/his disposal. Fulfilling functions may necessitate natural, physical, mental, cultural, social, economic, financial, and political assets as well as their embeddedness in societal structures and institutions. In general, the term capability connects to the broader issue of human development which depends axiomatically on freedom to achieve those chosen goals.

From the viewpoint of development cooperation agents, a higher degree of capabilities is usually equated with decreasing vulnerability – which is certainly true for the populations falling within their purview. If assets can be multiplied, livelihoods are more sustainable, and the eventual loss of one asset can be compensated for by the use of others. Accordingly, we understand vulnerability as lacking or being deprived of essential assets necessary to realize capabilities to cope with environmental change. The specific role of migration has thus to be contextualized with regard to the other assets available to a person or household.

Sen himself confines his capability approach to the level of the individual. Nevertheless, he appreciates the vital role of social networks as well as of organisational and institutional capacities of states, local authorities, political parties, private sector, civil society, and other proximate organisations that can offer support and security nets. He notes, for example, the critical role of institutions such as democracies for avoiding famines (Sen 1982). According to Sen, for capabilities to work and human development to be achieved, market mechanisms alone will not suffice. The question comes up in which direction policies should go that alter legal and socio-political structures. Assessing capabilities would therefore include, first, the role of civil society, the private sector, and local governments in coping with environmental

change. Second, the capacities of nation-states to support those entities as well as to implement their own protection and prevention measures have to be analyzed more thoroughly. Third, the role of international organisations is crucial. The Bretton Woods institutions, for example, have a major impact on social and economic policies, in turn providing opportunities and restrictions not only for adaptation policies in the face of climate change but also capabilities for livelihoods more generally. Needless to say, the role of public policies is not only relevant for adapting to climate change but also for mitigation (Giddens 2009).

But we even have to think beyond such supporting institutions. In light of this analysis it makes sense to extend the capability concept from the individual level at least to households and groups. These are social formations which accumulate assets and help or constrain persons to realize capabilities. Migration research supports such broadening of the concept, as decisions to migrate are often taken on the household level, and not individually (Faist 2000, chapter 3). Without disregarding power inequalities within households or families, migration often can be understood as a household strategy to broaden assets and the realisation of capabilities. Such an extension of the capability approach beyond the individual is, implicitly or explicitly, already built into the livelihood approach adopted by migration researchers and many development organisations. The same can be said of the new economics of migration (Stark 1991). But often, in practice, the livelihood concept is again restricted to an assessment of vulnerabilities (see for example FAO 2008).

To consider international migration in its fullest context, the capabilities approach should be enriched with a transnational perspective. Migrants, families, and other agents involved in migration often sustain durable and continuous ties across the borders of nation-states (see, for example, Basch et al. 1994). A transnational perspective is not confined strictly to cross-border ties and mobilities but also includes intra-state ties. The important point is that it takes into consideration ties above and below the state level, including local ties within and across borders. The clear advantage of a transnational approach over the more widespread methodological nationalism is that it embraces not just push factors in sending countries, such as high unemployment rates or adverse environmental conditions. Rather, it looks beyond national or local conditions to include transnational relations and spaces that enable and perpetuate migration dynamics – factors such as established migration routes, social networks, professionalized agents, international regimes, and other alternative sources of information and support. Such spaces can also be affected by environmental change.

An example from the Sahel zone might serve to clarify the relevance of environmental change to established migration routes. During the droughts in the Sahel zone the nomads could no longer follow their traditional trading routes, because the distance to be covered without new water resources became too long for their camels (Spittler 1986). This lack of mobility put their livelihoods at risk. The solution was not provision of food aid but of cars and fuel, thereby enabling their mobility. Moreover, environmental changes in destination places must also be considered. Dry seasons in the USA, for example, may slow down migration from Mexico, as demand for seasonal harvest-workers decreases (Kniveton et al. 2008). Such a breakdown of existing migration flows can in turn lead to development losses as remittances run dry. In consequence, such a depletion of resources may endanger coping with environmental changes in the regions of origin.

Assets required for spatial and social mobility are not restricted to those available at the place of departure. In reverse fashion, the mobility of individual household or group members, sending monetary or in kind remittances back home, helps the accumulation of assets in places of origin in order to realize diverse functions. Remittances might enable households or groups to improve their resilience and coping capacities with regard to environmental change, that is to say, to improve conditions for remaining at home. Or it might just as equally help them to migrate. Indeed, such disruption of routes, environmental changes in destination places, and possible impacts on the flows of remittances are relevant not only to cross-border movements, but also to migration within nation-state borders. In Northwest Ghana, for instance, it is a common household strategy to acquire a piece of land in more fertile parts of the country in order to sustain families located in that arid zone (Geest 2009). In such cases migration takes the form of seasonal mobility or the migration only of selected family members. But over a period of time, that strategy can lead to the continuous relocation of entire families.

A transnational analysis focusing on vulnerabilities and capabilities must include the wider societal context, including economic and political structures or cultural norms. In Bangladesh, for example, the expansion of shrimp production resulted in the destruction of large mangrove areas which had protected the coastal areas against salt water intrusion (Stern 2007: 433). Such unsustainable economic practices can be rooted in political exclusion and subsequent disregard of marginalized interests on the one hand, and the strength of vested interests on the other. The political marginalisation of the indigenous people in Chiapas, for instance, is one of the reasons for the absence of lobbies to protect the rain forest from extensive logging by large wood traders. Deforestation resulted in huge mud-slides during exceptionally heavy

rains that buried small villages of exactly those indigenous people (Alscher 2008). In the case of Inner Mongolia, cultural norms played a role in perpetuating the desertification of grasslands. Increased reproduction of cattle, seen as a sign of prosperity by local habitants, led to overgrazing, and eventual soil degradation due to decreasing rainfalls (Zhang 2008).

Altogether, numerous examples suggest that a broadened capability concept allows for a more comprehensive approach to the complex dynamics of environmentally induced migration.

Aim and structure of the conference

The conference aims to shed light on the complex dynamics of environmentally induced migration and the associated societal processes. Toward this end, we seek to further the interdisciplinary debate and exchange of knowledge from the fields of migration, climate change, disaster, development, and others. Connecting vulnerability, capability and transnationality approaches will help to link existing research and open new research venues for the future. The conference is structured along seven issue areas which congeal in panels:

(1) Participants are introduced to the debate on “climate refugees” and its shortcomings from the point of view of migration studies. The central question is: **What are the contentious issues of the environment migration debate?** In particular, the question needs to be addressed how migratory strategies are embedded within the broader livelihood context, and beyond climate change. In order to do so, leading scientists from migration studies, on the one hand, and one from climate change studies, on the other hand, dispute contending approaches.

(2) According to the sustainable livelihood approach, we reflect on the vulnerability context. The first part of such reflection takes the perspective of natural science. It seeks to make climate change projections, including the uncertainties of climate change modulation, accessible to participants from the social sciences. The central question is: **What do we know about climate and environmental change in developing and developed regions of the world?**

(3) We continue with the social science perspective and the challenges of climate change to precarious livelihoods. The guiding question is: **What impact do climate and environmental change have on the livelihoods of vulnerable groups?** The discussions focus on the basic categories of areas and persons which have been identified as highly affected by climate change. The categories include fields crucial for livelihood such as food and water systems. Food systems are understood to embrace agriculture, breeding, and

fishery, but also wild food and therefore forests and other ecosystems. Further, basic services such as health and housing systems will be an issue. The vulnerability of those systems will be analyzed from the perspective of extremely vulnerable groups. The latter might include, for example, slum dwellers living in the flood-prone areas of mega-cities; elderly, sick people and children who can cope less well physically with high climate variability and extreme weather events; a workforce that is exposed to risky environments; people who are dependent on agriculture, fishery, or forests for their livelihoods; and women who often face additional discrimination in various spheres of life.

(4) The focus then shifts to what existing field research has to say about the relationship between vulnerabilities and capabilities. The guiding question is: **What do field research and case studies tell us about vulnerabilities and capabilities with regard to mobility?** We interpret mobility as a potential asset that might have been consciously chosen to mitigate the effects of environmental change. As vulnerabilities and capabilities do not depend only on environmental change, the discussion will consider structures of inequality and how relevant institutions, policies, and processes feed into constraints and opportunities for mobility.

(5) Subsequently, we shift from vulnerabilities to capabilities and deliberate upon other approaches that promise to incorporate the capabilities perspective more deeply into applied methodologies. The leading question is: **How can we support and benefit from the capabilities perspective in our research on environmentally induced migration?** Taking into account the previous sessions, suggestions and open questions will be gathered and summarized, with the aim to establish a basis from which the academic community can begin to develop an elaborated approach to the questions at stake.

(6) A second panel with results from field research focuses on those who could be called environmental refugees in a more narrow sense. These are the victims of sudden and extreme weather events, whose plight raises the question whether and to which extent a capabilities approach can be applied to their situation as well. The subject of the panel is therefore the question: **How does the mobility perspective apply to the humanitarian crisis caused by climate and environmental change?**

(7) Finally, the conference strives to facilitate **reflections on the political dimension of the acquired findings and insights**. At the centre are questions about **the role and function of (social) sciences and (social) scientists in public debates and for policy-making**. The current lobbying efforts for extended adaptation and refugee regimes to tackle the problem of the “human tide” will be reflected upon in view of the conference results. Conference

participants are invited to analyze policy approaches, and to examine how a more sophisticated exploration of environmentally induced migration would feed back into those approaches. It is crucial to consider that the linkage between the sciences and policy is not built on a purely instrumental-rationalistic flow of knowledge but functions above all as a tool for agenda-setting and legitimating political decisions. In addition, it is not only the link between science and policy but also between the former and the public sphere and thus public debates that are crucial for an understanding of the prospects for science-based discussions (Faist 2009).

In sum, the cumulative knowledge of the disciplines involved and other experts is geared towards facilitating exchange of knowledge and to developing questions and concepts on the issue of environmentally induced migration. Social scientists and practitioners of humanitarian and development cooperation are at the forefront of establishing comprehensive assessment methodologies. Diverse approaches will be discussed jointly, seeking mutual reflection and possibilities to learn from one another. Finally, results, challenges, and open questions for further research are gathered, keeping in mind possible consequences for existing policies and for public debates.

BIBLIOGRAPHY

| |
|--|
| Alscher, Stefan (2008) Environmental factors on Mexican migration: The cases of Chiapas and Tlaxcala. Mexico case study report; Environmental Change and Forced Migration Scenarios (EACH-FOR); www.each-for.eu/documents/CSR_Mexico_090126.pdf |
| Basch, Linda et al. (1994): Nations unbound. Transnational projects, postcolonial predicaments and deterritorialized nation-states; London: Routledge. |
| Christian Aid (2007): Human tide: the real migration crisis; London, May 2007 |
| Faist, Thomas (2000): The volume and dynamics of international migration and transnational social spaces. Oxford: Oxford University Press. |
| Faist, Thomas (2009): Academic knowledge, policy and the public role of social scientists – The case of migration and development, ZiF-Mitteilungen (forthcoming). |
| FAO (2008) Climate change and food security: A framework document; Food and Agriculture Organization, Interdepartmental Working Group on Climate Change; ftp://ftp.fao.org/docrep/fao/010/k2595e/k2595e00.pdf . |

| |
|---|
| Geest, Kees van der (2008): Migration and natural resources scarcity in Ghana. Ghana case study report; Environmental Change and Forced Migration Scenarios (EACH-FOR); www.each-for.eu/documents/CSR_Ghana_090126.pdf . |
| Giddens, Anthony (2009): The Politics of Climate Change. Cambridge: Polity Press. |
| IPCC (2007a): Climate change (2007): Impacts, adaptation and vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [M.L.Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden, C.E. Hanson (eds.)], Cambridge, UK: Cambridge University Press. |
| IPCC (2007b): Climate change (2007): Synthesis report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)]; IPCC, Geneva, Switzerland. |
| Myers, Norman (2002): Environmental refugees: A growing phenomenon of the 21 st century; in: Philosophical Transactions: Biological Sciences, Vol. 357, No. 1420, Reviews and a special collection of papers on human migration, published by The Royal Society, 609-613. |
| Renaud, F., Bogardi, J.J., Dun, O., Warner, K. (2007) Control, adapt or flee how to face environmental migration? InterSecTions. Interdisciplinary Security Connections UNU-EHS No. 5/2007. http://www.ehs.unu.edu/file.php?id=259 . |
| Sen, Amartya (1982): Poverty and famines: An essay on entitlements and deprivation; Oxford: Clarendon Press. |
| Sen, Amartya (1992): Inequality reexamined; Cambridge/ Massachusetts/ London: Harvard University Press. |
| Sen, Amartya (1999): Development as freedom; Oxford: Oxford University Press. |
| Spittler, Gerd (1986): Nomaden, Dürren und Entwicklungshilfe, in: C. Antweiler, T. Bargatzky, F. Bliss (Hg.) Ethnologische Beiträge zur Entwicklungspolitik, Bonn 1987, 109-127. |
| Stark, Oded (1991): The migration of labor; Oxford: Basil Blackwell. |
| Stern, Nicholas (2007): The economics of climate change. The Stern review; Cambridge: Cambridge University Press. |
| World Bank (2006): An Investment Framework for Clean Energy & Development. A |

Progress Report; Washington, DC: World Bank.

Zhang, Qian (2008): China (Inner Mongolia) case study report; Environmental Change and Forced Migration Scenarios (EACH-FOR);
www.each-for.eu/documents/CSR_Inner_Mongolia_090331.pdf