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Climatic turn in migration studies? Geographical perspectives on the relationship between climate and migration

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Looking at the rapidly growing stock of literature linking climate change and migration, one could find evidence that there seems to be a “climatic turn” (Neverla 2007) concerning the explanation of migration. Climate change and its relevance for migration has undoubtedly developed into a strong argument, be it in migration research or in climate impact studies. Interestingly, already in the 19th century, scholars like Friedrich Ratzel and Ernest George Ravenstein considered ‘climate’ or ‘environment’ as relevant factors for triggering human mobility, although generally subordinated to other factors (Piguet 2013: 149). These assumed drivers of migration have been neglected for most of the last century. However, since Essam El-Hinnawi (1985) published an influential report for the United Nations Environmental Programme in which he coined the term ‘environmental refugee’, the idea that natural environments can force people to move, is back on the agenda. Ever since, we have witnessed a dynamic inter- and transdisciplinary field of research on the relation of climate and migration. In this field, environmental and climate scientists as well as scholars from social sciences and humanities participate. From the very beginning, geographers were engaged in this endeavour, too. This is hardly surprising as it is the main goal of geography to bridge the gap between human and physical sciences; therefore geographers seem predestined to contribute to the debate. Certainly, the geographical contribution is just as diverse as the interdiscipli-

nary field itself. It differs in scope and scale, but also in perspective and epistemological position.

This special issue explores the potential of new geographical approaches and perspectives in order to push the debate forward. While in the context of ‘climate and migration’ studies more and more empirical investigations are funded, conducted and published, important methodological problems remain unsolved. There is no consensus on how the assumed nexus should be conceived theoretically and how – in accordance to the conceptual decision – it should be approached in empirical research. Did migration researchers, for instance, miss that climatic and ecological conditions are important determinants of human behaviour? Are there specific kinds of locations where coupled natural and human systems are put under additional pressure by climate? Or can migration be sufficiently explained by well-known conditions and factors like uneven economic development, educational aspirations, poverty, social networks or vulnerability of precarious livelihood systems? What role do spatial constructions, socio-technical arrangements, images of climate change or figures and calculations play? Should we not pay more attention to power, interest groups, communication and the social production of nature? Do we witness a new migration regime when it comes to climate or environmentally induced migrants? In which discourses and political frameworks do we encounter such migrants?

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Questions like these point at a multiple demand: There is a demand to reassess the framework and theoretical mindset of interdisciplinary research on the climate-migration nexus; there is a need for empirical data produced within a theoretically sound approach; there is space to bring in new perspectives, derived from promising disciplinary debates in social and cultural geography, into the interdisciplinary arena. In order to do so, let us try to map the respective field of research, however fast it may currently transform and diversify.

Significant differences within the vast field of research

Since *El-Hinnawi's* (1985) report, several hundred academic papers and books have been published on the migration and environment nexus. There are too many differences, many distinctions are much too subtle to be exposed and reanalysed here in detail. Nevertheless, in order to give an overview, we would like to distinguish between four strands of research:

(1) Environmental causation of migration

At the outset, the key argument was a very simplified one. It considered flight and migration as being determined by environmental conditions or environmental changes. This explanation was soon criticized as environmental determinism. Definitions of “environmental refugees” were far from being exact and clear (cf. *El-Hinnawi* 1985). Soon environmentalists predicted that millions of people, especially in poor countries, had to and would flee from environmental degradation in the near future (*Jacobson* 1988). Such predictions were criticized as alarmist or as “educated guesswork” (*Loneragan* 1998: 8). Empirical proof of environmental causes was difficult, but plausible for the media and the public that soon developed an interest in the issue. Flight and involuntary migration in the Global South found a natural and naturalized explanation, reference to push factors (and neglect of pull factors) seemed sufficient. Those said to be environmental refugees were basically portrayed as victims, but soon another, concurrent frame appeared which represented them as a threat for national states, even for rich industrialized countries (*Wissenschaftlicher Beirat Globale Umweltveränderungen* 2007). Overpopulation was felt to be part of the problem. Mobility due to environmental forces was understood as problematic and it could

lead to further problems like uncontrolled moves and fights for resources (*Kliot* 2004: 69).

With the discovery of climate change, the role which the *environment* formerly played in socio-ecological models could now easily be substituted by *climate*, causing analogue consequences on the part of the people affected. Again, as the ‘human face’ of climate change, those labelled as “climate refugees” were seen as victims of man-made changes to the environment but at the same time as a potential threat to national security of the Global North (*Bettini* 2013).

Both concepts, the environmental condition as well as the climatic condition or the “climate refugee”, were highly politicized and controversial – and therefore often criticized. The label “refugee” appeared as misleading for people who were said to be displaced by environmental (or climatic) change: Since the 1951 Geneva Convention on Refugees, international law defines refugees in a different way (*Castles* 2010: 241)¹. Moreover, various critics challenged the concept’s mono-directional causal reference to the environment (or climate). Against an all too simple explanation it is stated that environmental (or climatic) factors can have negative, neutral *or* positive impacts. Changes in the environment or climate, for example, can both improve *or* deteriorate livelihood opportunities (*Suhrke* 1994; *Kibreab* 1997; *Black* 2001; *Castles* 2002; *Morrissey* 2009; *Aufvenne* and *Felgentreff* 2013: 22-27; *Bettini* 2014; *Nicholson* 2014).

(2) Advanced concepts of complex causation

Some ten years ago, the term changed from “refugee” to “migrant”. *Graeme Hugo* popularized the term “environmentally-induced migration” in a report published by the International Organization of Migration – IOM – (*Hugo* 2008). Others changed to terms like “environmentally motivated migrants” (*Renaud* et al. 2007) or “environmental migrants” (*Dun* and *Gemmen* 2008). Indirectly, this switch in terminology acknowledges that the label “refugee” should be used for other forms of displacement congruent with the 1951 Refugee Convention (*Castles* 2010: 241). Increasing empirical evidence suggested that the explanation of displacement by exclusively environmental factors was incomplete. Not in all cases, for instance, did changes to the environment result in displacement or migration processes. Migration scholars have provided ample empirical evidence “...

that migration is too diverse and multifaceted to be explained in a single theory" (King 2012: 11) or by just one single factor like environment or climate. Cecilia Tacoli made an important point: "Environmental factors affect patterns of migration and mobility within a broader context of important changes in population distribution" (Tacoli 2009: 514).

Thus, a significant shift in understanding has taken place: Migration is usually a complex phenomenon with diverse causes, forms and effects. Migrants often move anyway regardless of changes in climate or environment. They have a certain agency and are not just passive victims of changes which push them around. However, their choices might be influenced by changes in their environments, especially when livelihoods depend on agro-environmental features. Broadly speaking, such a perspective raises awareness of the complexity of migration processes and causes of migration in particular. Instead of searching for one 'missing link', i.e. a determining relationship between climate and migration, the open question is: To what extent are well-known drivers of migration directly or indirectly influenced by environmental or climatic factors? (Foresight 2011). Even though up to today it is unclear how to identify, separate and study environmental factors influencing migration empirically, Stephen Castles put the challenges laying ahead like this: "In retrospect", he summarized in the aftermath of the failure of the Copenhagen Summit (the 2009 United Nations Climate Change Conference), "it seems clear that the politicization and polarization of the debate on migration and the environment had quite negative consequences. Environmentalists may have been misguided in using misleading and threatening images of mass displacement to raise public awareness of climate change, but the defensive postures adopted by refugee and migration scholars also held back scientific analysis and thus probably the development of appropriate strategies to respond to the challenges of climate-induced displacement" (Castles 2010: 243).

In addition to the idea that climate change might – as an additional factor – contribute to the complex, multifactorial, and often cumulative causation of migration (Massey 1990) and thus deserves closer scientific analysis, the statement by Castles also reveals the growing importance of an applied perspective: Scrutinising climate change without "apocalyptic narratives on 'climate refugees'" (Bettini 2013) and empirically looking into the assumed complex relationship between climate and migration prom-

ise to develop "appropriate strategies" to respond to environmentally induced migration or to "climate-induced displacement" (Castles 2010: 243). Taking the existence and partial influence of environmental conditions on migration patterns for granted, Tacoli regrets that "migration is generally perceived as problematic, and most policies try to influence the volume, direction and types of movement rather than accommodate flows and support migrants" (Tacoli 2009: 514). This policy-related and applied focus on "migration management" is also adopted in another strand of research. It evolved or became more visible when the adaptive capacity of spatial population mobility was (re-)discovered.

(3) Migration as adaptation

Adaptation is generally understood as a local coping mechanism to changes in all kinds of environment (Adger et al. 2003). Most migration theorists would agree that migration has often proved to function as an effective mode of adaptation (Black et al. 2011). In view of capacity or resilience building, the "climate migrant" (or: "climate-induced migrant") nowadays appears as a highly rational and responsible person performing a powerful adaptation strategy – which is: migration. In this perspective, previously rather heated and polarizing debates have been transformed and have moved into shallow water: "... (governed) migration is advocated as an adaptation strategy, and the invocation of security is replaced by the apparently innocuous concept of human security. Such a shift has taken place in academia, but most importantly also in policy and advocacy circuits" (Bettini 2014: 181).

Previously, migration as a reaction to changes of the environment was seen as the problem, now it seems to be the solution for another problem: climatic change. For the International Organization of Labour (IOM) the adjusted perspective is outlined in Laczko and Aghazarm (2009). The influential Foresight Report for the British Government develops a similar understanding (Foresight 2011) which can also be found in publications of the Asian Development Bank (2009). The usefulness of this new terminology for migration management is plain to see (Felli and Castree 2012) – but disputable with respect to its implications for development assistance (Bose 2015) or for a deeper understanding of contemporary processes of migration (Baldwin 2014; Bettini 2014; Methmann and Oels 2015).

Typical examples of such a re-interpretation of migration are the Fourth and Fifth IPCC reports on impacts of climate change. In 2007, Working Group II (Fourth Report) concluded: „... while relocation and migration have been used as adaptation strategies in the past, there are often large social costs associated with these and unacceptable impacts in terms of human rights and sustainability. The possibility of migration as a response to climate change is still rarely broached in the literature on adaptation to climate change, perhaps because it is entirely outside the acceptable range of proposals ...” (Adger et al. 2007: 736). This rather negative attitude predominates even in those chapters of the Fifth Assessment Report written by Working Group II that deal explicitly with the adaptation to climate change (IPCC 2014). However, the chapter on “human security” (Chapter 12) strongly advocates managed migration (here: resettlement) as a proper means to combat the negative effects of climate change in the Global South – although it finally admits: “There is insufficient evidence to judge the effectiveness of resettlement as an adaptation to climate change” (Adger et al. 2014: 758).

This new perception of human migration as a solution to climate-induced vulnerability is apparently becoming mainstream. Ultimately, from this perspective each kind of migration can be interpreted as climate-induced (or: climate change-induced) mobility (Vlassopoulos 2013).

(4) Political and societal dimensions

Our remarks so far illustrate that researching and talking about links between climate and migration have several societal and political dimensions. These dimensions are observed and critically deconstructed by various authors:

It is obvious that these debates play a highly performative role in politics (Nicholson 2014: 152). For instance, a framing of the migrant as someone influenced by climate might affect her or his position as a political subject (Ransan-Cooper et al. 2015). It is disputed whether the ‘migration as adaptation’ paradigm, which definitely restores the addressed individuals with agency, will mean empowerment – or the imposition of responsibility to those labelled as climate-induced migrants (Methmann and Oels 2015). The former discourse about ‘refugees’ aimed to underline the human consequences of environmen-

tal degradation and climate change, thereby stressing the responsibilities of Northern countries. In contrast, today’s discourse might assist in the replacement of mitigation policy by adaptation policy and provide additional labour in the North by the promotion of governed, regulated South-North-migration (Felli 2013).

A recently emerging political issue is the planned relocation of victims of climate change (McAdam and Ferris 2015). In this context, much can be learned from the desolate experiences made with development-forced displacements (Wilmsen and Webber 2015; McDowell 2013). Some observers are already confident to identify ‘danger zones’ for the evacuation (McAdam 2015) while others wonder about the democratic legitimacy, the data base and the wisdom of those who intend to determine the fate of millions (Hulme 2008; Felli and Castree 2012).

Summing up this fourth strand of research and taking all responsibility for such a simplification: its main feature appears to be the shared interest in processes of (de-)politicization of the climate-migration relationship, in the performative power of scientific arguments (or empirical analyses) as well as in the interconnectedness and mutual stabilization of scientific and political debates on climate change-induced migration.

New geographical perspectives on the relationship between climate change and migration

Against the backdrop of the differentiated research landscape on ‘climate migration’, recent developments in social and cultural geography bear the potential to productively tie in with current research problems in the context of climate change and migration. Constructivist approaches (let them be action or practice theory, discourse theory or poststructuralist approaches), observer-related conceptualisations of space, or assemblage thinking, hybridity and actor-network theory have all strongly influenced human geography in the last two decades. In particular, debates in the wake of the *cultural turn* could inspire fruitful, but rarely adopted perspectives. They might help to shed new light on ‘climate migration’ without necessarily calling for a “climatic turn” (Neverla 2007) in migration studies or geography. The sensitivity for social and spatial contexts, the insights into the “maps of meaning” (Jackson 1989) and the production of significance, the various find-

ings about knowledge production and the political power of scientific description – they all raise particular questions, stimulate to rethink our conceptual framing and ask for geographical inquiry:

- What has cultural and social geography to offer in order to study the complex, multiple and cumulative causes of migration if one acknowledges the possibility of climate change influences as mentioned in the section on “advanced concepts of complex causation”?
- Which role does the construction of space and place have in the context of climate change and migration?
- ‘Climate and migration’ designates a contested field, which is not located exclusively within academia. It is time to investigate more deeply the complex and often intricate interrelations of migration and climate change studies, mass media, policy and advocacy. The studies on the political and societal dimensions remind us to take up self-reflexive perspectives: What, for example, is the social or political importance of the scale chosen for the empirical analysis?
- How is the construction of the above described research concepts – ‘environmental causes of migration’, ‘complex causation’ or ‘migration as adaptation’ – achieved? What are the limitations and effects of these theoretical framings? Obviously, the objects of research in this perspective are not climate parameters themselves or as assumed factors of migration, but their particular (and often differing) social constructions and perceptions, their communication as well as their social meanings and consequences.

Picking up these as well as other approaches and questions, the authors of this issue contribute to the interdisciplinary debate in various ways.

The papers of this special issue

Patrick Sakdapolrak, Sopon Naruchaikusol, Kayly Ober, Simon Peth, Luise Porst, Till Rockenbauch and Vera Tolo contribute a conceptual paper outlining a broad approach for the study of migration in a changing climate. Drawing on *Bourdieu's* theory of practice, the ‘migration as adaptation’ paradigm

in the debate about climate-induced migration is critically reviewed and linked to vulnerability, resilience and translocality. Thereby, the authors outline an analytical framework for the study and interpretation of migration which is compatible with contemporary social theory. Their suggested concept of translocal social resilience allows for a deeper understanding of human mobility – and immobility – in the context of society-environment relations. One future challenge will be to translate this broad, all-embracing conceptual framing into empirical investigations.

Clemens Romankiewicz, Martin Doevenspeck, Martin Brandt and Cyrus Samimi challenge any simplified causal relationship between climate and migration. Migration, they argue, is practiced anyway, no matter whether features of the environment or climate are changing or not. By connecting people and places, by flows of people, knowledge, material and non-material resources, migration does contribute to growing independence from agro-ecological conditions in rural Senegal – as an unintended side-effect. In-depth multi-sited field work conducted at the place of origin and additionally at destinations in urban Senegal and in Europe allowed a deep comprehension of the functioning of a multi-local migrant community with strong intra-community links.

Corinna de Guttery, Martin Döring and Beate Ratter present empirical insights into the way Italian and Chinese migrants residing in Hamburg frame climate change. It has been rarely analysed which manifold and diverse climate change related knowledge migrants bring along. And it is apparent from the data presented that this ‘luggage’ is highly relevant when migrants are expected to participate in local adaptation and mitigation processes. Object of research in this study is the migrants’ knowledge about climate (including climate change) with special reference to questions of climate change mitigation and adaptation. The interviews showed that the addressed Chinese migrants in Hamburg tended to rely on ‘wise’ government decisions because they felt that individual action had only very limited impact on climate change. In contrast, the Italian interviewees’ perception of the government’s influence on climate change mitigation was rather limited or even negative. While they gave evidence of a western world-view and tended to blame technology for being part of the problem of carbonization of the atmosphere, Chinese respondents sympathized with technical fix solutions, thus showing the importance of cultural frames.

Felicitas Hillmann and *Usha Ziegelmayr* identify a conflation of various spatial levels of analysis in the debate on the influence of climate and environment on migration. They plead for more context-sensitive research. Their contribution presents and discusses results of own surveys conducted in 2014 and 2015 in two coastal areas in Ghana and Indonesia, both since long affected by environmental change and migration. As a comparative study the paper reveals substantial differences between the regions which they investigated empirically.

Lina Eklund, *Clemens Romankiewicz*, *Martin Brandt*, *Martin Doevenspeck* and *Cyrus Samimi* provide a critical reflection on methodological problems of analysing the relationships between environment and migration. They argue that the exploration of this nexus must be aware of serious limitations of data and methods so far applied in empirical research. Discussing a selection of more than 30 empirical case studies published in peer-reviewed sources, the authors focus on questions of scale, identifying a wide range of temporal and spatial dimensions of data and models. Apparently, the scale of data usually available is in clear mismatch with the environmental parameters of interest. Much too often, scholars use data on available scales (spatial or temporal scales, levels of social aggregation like individuals, households, villages, population of administrative units etc.) without reflecting on the scale itself. Instead, this conceptual paper argues, data should be analysed only on that scale which is understood that migration and other relevant processes operate on.

Eberhard Weber shows how politics can be built on the argument of environmentally unsafe conditions. His example of this kind of dubious policy production is the relocation of Pacific Islanders who have been told that there is no alternative. By analysing documents from colonial archives, which so far have not been accessible for researchers, the author describes the historical context and the odyssey of the people who were resettled from the Gilbert to the Phoenix Islands in 1938. Isolation, drought and World War II put a heavy toll on the settlers who not earlier than during the 1950s were transferred to the Solomon Islands. In 2007, a tsunami caused another severe burden on the community there. The survivors moved inland and built houses on higher ground on Ghizo Island in a new settlement, which was not intended by the government. The case study drastically demonstrates an abuse of ecological arguments for to-

tally different strategic interests. Other intentions might be involved when people are resettled for reportedly ecological or humanitarian concerns.

Note

¹ A refugee is a 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; 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” (Article 1 (2), UN General Assembly in United Nations Treaty Series (1954: 152), Convention relating to the Status of Refugees (adopted 28 July 1951, entered into force 22 April 1954) 189 United Nations Treaty Series 137 (<https://treaties.un.org/doc/Publication/UNTS/Volume%20189/v189.pdf> (20.6.2016)). See also Protocol relating to the status for Refugees (adopted 31 January 1967, entered into force 4 October 1967) 606 United Nations Treaty Series 267 (<https://treaties.un.org/doc/Publication/UNTS/Volume%20606/v606.pdf> (20.6.2016)).

References cited

- Adger, W.N., S. Huq, K. Brown, D. Conway and M. Hulme* 2003: Adaptation to climate change in the developing world. – *Progress in Development Studies* 3 (3): 179-195
- Adger, W.N., S. Agrawala, M. Mirza, C. Conde, K. O'Brien, J. Pulhin, R. Pulwarty, B. Smit and K. Takahashi* 2007: Assessment of adaptation practices, options, constraints and capacity. – In: *Parry, M.L., O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson* (eds.): *Climate change 2007: impacts, adaptation and vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. – Cambridge, UK, and New York, NY, USA: 717-743
- Adger, W.N., J.M. Pulhin, J. Barnett, G.D. Dabelko, G.K. Hovelsrud, M. Levy, Ú. Oswald Spring and C.H. Vogel* 2014: Human security. – In: *Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea and L.L. White* (eds.): *Climate change 2014: impacts, adaptation, and vulnerability. Part A: Global and sectoral aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. – Cambridge, UK, and New York, NY, USA: 755-791

- Asian Development Bank 2009: Policy options to support climate-induced migration. (Financed by the Climate Change Fund). – Manila
- Aufvenne, P.* and *C. Felgentreff* 2013: Umweltmigranten und Klimaflüchtlinge – zweifelhafte Kategorien in der aktuellen Debatte. – In: *Felgentreff, C.* und *M. Geiger* (Hrsg.): *Migration und Umwelt*. – IMIS-Beiträge **44**. – Osnabrück: 19-44
- Baldwin, A.* 2014: Pluralising climate change and migration: an argument in favour of open futures. – *Geography Compass* **8** (8): 516-528
- Bettini, G.* 2013: Climate barbarians at the gate? a critique of apocalyptic narratives on 'climate refugees'. – *Geoforum* **45**: 63-72
- Bettini, G.* 2014: Climate migration as an adaption strategy: de-securitizing climate-induced migration or making the unruly governable? – *Critical Studies on Security* **2** (2): 180-195
- Black, R.* 2001: Environmental refugees: myth or reality? – *New Issues in Refugee Research Working Paper* **34**. – Geneva
- Black, R., S.R.G. Bennett, S.M. Thomas* and *J.R. Beddington* 2011: Climate change: migration as adaptation. – *Nature* **478**: 447-449
- Bose, P.S.* 2015: Vulnerabilities and displacements: adaptation and mitigation to climate change as a new development mantra. – *Area* **48** (2): 168-175
- Castles, S.* 2002: Environmental change and forced migration: making sense of the debate. – *New Issues in Refugee Research* **70**. – UNHCR. – Geneva
- Castles, S.* 2010: Afterword: what now? Climate-induced displacement after Copenhagen. – In: *McAdam, J.* (ed.): *Climate change and displacement. Multidisciplinary perspectives*. – Oxford: 239-246
- Dun, O.* and *F. Gemenne* 2008: Defining 'environmental migration'. – *Forced Migration Review* **31**: 10-11
- El-Hinnawi, E.* 1985: Environmental refugees. – United Nations Environment Programme. – Nairobi
- Felli, R.* 2013: Managing climate insecurity by ensuring continuous capital accumulation: 'climate refugees' and 'climate migrants'. – *New Political Economy* **18** (3): 337-363
- Felli, R.* and *N. Castree* 2012: Neoliberalising adaptation to environmental change: foresight or foreclosure? – *Environment and Planning A* **44** (1): 1-4
- Foresight 2011: Migration and global environmental change. Future challenges and opportunities. Final project report. – The Governance Office for Science. – London
- Hugo, G.* 2008: Migration, development and environment. – International Organization for Migration, Migration Research Series **35**. – Geneva
- Hulme, M.* 2008: Commentary – climate refugees: cause for a new agreement? – *Environment, Science and Policy for Sustainable Development*, November-December 2008: 50. – Accessed online: <http://www.environmentmagazine.org/Archives/Back%20Issues/November-December%202008/hulme-full.html>, 11/10/2015
- IPCC (ed) 2014: Climate change 2014: impacts, adaptation, and vulnerability. Part A: Global and sectoral aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. – Cambridge, UK, and New York, NY, USA
- Jackson, P.* 1989: Maps of meaning: an introduction to cultural geography. – London
- Jacobson, J.L.* 1988: Environmental refugees: a yardstick of habitability. – Worldwatch Institute. – Washington, DC
- Kibreab, G.* 1997: Environmental causes and impact of refugee movements: a critique of the current debate. – *Disasters* **21** (1): 20-38
- King, R.* 2012: Theories and typologies of migration: an overview and a primer. – Willy Brandt Series of Working Papers in International Migration and Ethnic Relations 3/12. – Malmö Institute for Studies of Migration, Diversity and Welfare (MIM). – Malmö
- Kliot, N.* 2004: Environmentally induced population movements: their complex sources and consequences. A critical review. – In: *Unruh, J.D., M.S. Krol* and *N. Kliot* (eds.): *Environmental change and its implications for population migration*. – *Advances in Global Change Research* **20**. – Dordrecht et al.: 69-99
- Laczko, F.* and *C. Aghazarm* (eds.) 2009: Migration, environment and climate change: assessing the evidence. – Geneva
- Lonergan, S.* 1998: The role of environmental degradation in population displacement. – *Environmental Change and Security Project Report* **4**: 5-15
- Massey, D.S.* 1990: Social structure, household strategies, and the cumulative causation of migration. – *Population Index* **56** (1): 3-26
- McAdam, J.* 2015: Relocation and resettlement from colonisation to climate change: the perennial solution to 'danger zones'. – *London Review of International Law* **3** (1): 93-130
- McAdam, J.* and *E. Ferris* 2015: Planned relocations in the context of climate change: unpacking the legal and conceptual issues. – *Cambridge Journal of International and Comparative Law* **4** (1): 137-166
- McDowell, C.* 2013: Climate-change adaptation and mitigation: implications for land acquisition and population relocation. – *Development Policy Review* **31** (6): 677-695
- Methmann, C.* and *A. Oels* 2015: From 'fearing' to 'empowering' climate refugees: governing climate-induced migration in the name of resilience. – *Security Dialogue* **46** (1): 51-68
- Morrissey, J.* 2009: Environmental change and forced migration: a state of the art review. – Refugee Studies Centre. University of Oxford. – Oxford
- Neverla, I.* 2007: The climatic turn. How and why journalism has discovered climate change. Unpublished paper presented at the Conference "Communicating Climate

- Change" at University of Braga, Portugal, November 2007. – Braga, Portugal
- Nicholson, C.T.M.* 2014: Climate change and the politics of causal reasoning: the case of climate change and migration. – *The Geographical Journal* **180** (2): 151-160
- Piguet, E.* 2013: From "primitive migration" to "climate refugees": the curious fate of the natural environment in migration studies. – *Annals of the Association of American Geographers* **103** (1): 148-162
- Ransan-Cooper, H., C. Farbotko, K.E. McNamara, F. Thornton and E. Chevalier* 2015: Being(s) framed: the means and ends of framing environmental migrants. – *Global Environmental Change* **35**: 106-115
- Renaud, F., J. Bogardi, O. Dun and K. Warner* 2007: Control, adapt or flee: how to face environmental migration? – United Nations University, Institute for Environment and Human Security (UNU-EHS), *InterSections* **5**. – Bonn
- Suhrke, A.* 1994: Environmental degradation and population flows. – *Journal of International Affairs* **47** (2): 473-496
- Tacoli, C.* 2009: Crisis or adaptation? Migration and climate change in a context of high mobility. – *Environment and Urbanization* **21** (2): 513-525
- Vlassopoulos, C.A.* 2013: Defining environmental migration in the climate change era: problem, consequence or solution? – In: *Faist, T. and J. Schade* (eds.): *Disentangling migration and climate change: methodologies, political discourses and human rights*. – Dordrecht: 145-163
- Wilmsen, B. and M. Webber* 2015: What can we learn from the practice of development-forced displacement and resettlement for organised resettlements in response to climate change? – *Geoforum* **58**: 76-85
- Wissenschaftlicher Beirat Globale Umweltveränderungen (WBGU) 2007: *Welt im Wandel. Sicherheitsrisiko Klimawandel*. – Berlin