

Enhancing Adaptation Options and Managing Human Mobility in the Context of Climate Change: Role of the United Nations Framework Convention on Climate Change

Koko Warner

Abstract

This article analyses the potential role of the United Nations Framework Convention on Climate Change (UNFCCC) in addressing human mobility issues and climate change. It sets the stage by laying out research findings about types of migration related to climate stressors. Such research explores how changing climatic patterns interact with livelihood and food security systems in ways that contribute to different forms of mobility – or to lack of mobility (‘trapped populations’). Against this background, the contribution then examines the first mention of human mobility in paragraph 14(f) of the Cancun Adaptation Framework agreed at the Sixteenth Conference of the Parties (COP16) in 2011, and subsequent treatment in policy areas such as paragraph 7a(iii) in the Doha Climate Gateway decision on loss and damage at COP18 in 2012. With these policy developments, the article explores the possible roles of the UNFCCC in dealing with migration, displacement and relocation associated with climate change. Future climate policy regarding human mobility could have relevance for arenas like the Adaptation Committee, National Adaptation Planning Processes, the Green Climate Fund, and other areas, such as loss and damage in the UNFCCC process. Other policy arenas dealing with human mobility in the context of climate change may also be influenced by how the UNFCCC processes deal with the issue.

A. Introduction

This contribution discusses the potential role of the United Nations Framework Convention on Climate Change (UNFCCC) in addressing some of the governance, legal and institutional issues arising with human mobility in the context of global anthropogenic environmental change. It analyses the ap-

plicability of the UNFCCC in respect of addressing migration, displacement and relocation associated with climate change. The article examines the suitability and efficacy of using the UNFCCC to address movement associated with climate change, with a view to informing the development of guiding principles and effective practices to address crisis migration.

To provide a research basis for discussions about types of crisis migration, section B of the article first draws on new research findings particularly relevant to scenarios where changing climatic patterns stress livelihoods and contribute to migration, e.g. changes in weather patterns that require people to relocate for shorter or longer periods in an effort to manage climate-related livelihood stressors. Section B also addresses a basic question of whether migration and other forms of human mobility can be considered adaptation to climate change. Reference is made to new findings that help address the question *Under what circumstances do households use migration as a risk management strategy when facing climatic stressors?*, and looks at four profiles of households along an adaptation continuum. The annex presents data and household characteristics from the study results shared in Section B. Section C examines the framing of human migration and displacement and its first-time-ever appearance in an outcome of a Conference of the Parties – in the Cancun Adaptation Framework of December 2010. The article then analyses paragraph 14(f) on migration and displacement in the Cancun Adaptation Framework, and the range of possible activities which may take shape in the future, both within the emerging climate adaptation regime. This may include the Adaptation Committee, National Adaptation Planning Processes, the Green Climate Fund, and other areas like loss and damage in the UNFCCC process (Section D). Section E examines how the topic is emerging in other areas such as loss and damage, notably in the Doha Climate Gateway decision at the Eighteenth Conference of the Parties (COP18).¹ Other policy arenas dealing with human mobility in the context of climate change may also be influenced by how the UNFCCC processes deal with the issue. The final section of this article examines gaps and draws conclusions (Section F).

1 Para. 7a(iii).

B. Climate Change and Migration: Emerging Understanding in the Context of Adaptation

Climate change is likely to worsen the situation in parts of the world that already experience high levels of stressors to livelihood and food security, among other societal impacts of global environmental change. The consequences of the greater variability of climatic factors, such as rainfall conditions, affect the livelihoods and safety of vulnerable people. Less predictable seasons, more erratic rainfall, unseasonable events, or the loss of transitional seasons have significant repercussions for millions of people regarding food security, livelihoods, and the migration decisions of vulnerable households. In order to make informed decisions about adaptation planning, development, and a transition to a more climate-resilient future, policymakers and development actors need a better understanding of how migration decisions are spurred by the linkages among changes in the climate, household livelihood and food security profiles, particularly in ‘acute’ situations of climate stress like too little rain, rain at the wrong times for the planting season, or too much rain.

Since at least the mid-1980s, scientists have linked environmental change to human mobility.² Early debates emerged around future projections and predictions of the number of ‘environmental migrants’.³ More recently, conceptual and empirical work has examined broad relationships between environmental factors and human mobility in different situations.⁴ These studies have identified broad patterns as a point of departure for further, more nuanced work on the interactions of climatic and socio-economic factors.⁵ Research since that time has determined that environmental factors do play

-
- 2 El-Hinnawy (1985) introduced the first definition of *environmental migrants* in a United Nations Environmental Programme report. His definition has been refined and made more comprehensive by other authors and institutions, such as the International Organization for Migration in 2007.
 - 3 See e.g. Brown (2008), Christian Aid (2007) and Myers (2005), who attempt to assign estimate numbers on current and future environmentally induced migration.
 - 4 Jäger et al. (2009) synthesised the results of the Environmental Change and Forced Migration Scenarios Project (EACH-FOR, www.each-for.eu, last accessed 14 May 2013) – the first global survey of its kind employing fieldwork to investigate environmental change and migration in 23 case studies. Warner et al. (2009) brought EACH-FOR’s results to policymakers, particularly in the UNFCCC process.
 - 5 Afifi (2011); Brown (2008); Gunvor (2010); Hugo (2008); Laczkó & Aghazarm (2009); Martin, P. (2010); Martin, S. (2010); Morrissey (2009); Tacoli (2009).

a role in human mobility⁶ and emphasises that some people who are more exposed to environmental stressors – particularly farmers, herders, pastoralists, fishermen and others who rely on natural resources and the weather for their livelihoods – may be the least able to move very far away, if at all.⁷ In the decades ahead, these potentially ‘limited-mobility’ populations could face deteriorating habitability of their traditional homelands, with fewer options for moving to more favourable places in safety and dignity. The implications of climate change for a wider scope of issues related to population movement in the medium and longer term have driven a quest for a better understanding of the circumstances under which climatic factors affect human decisions about whether to leave, where to go, when to leave, and when to return.

Research findings were first formally reported to climate negotiators in a submission to the UNFCCC in August 2008 in the Accra Session in Ghana of the Ad Hoc Working Group on Long-term Cooperative Action.⁸ Furthermore, the Fifth Assessment Report of the Intergovernmental Panel on Climate Change⁹ (IPCC) will include a chapter on human security, which will particularly deal with migration and conflict among others.¹⁰ The topic will also be addressed in several other chapters in the IPCC report as a cross-cutting issue (particularly in regional chapters). Emerging empirical evidence considers whether migration and other forms of human mobility can be regarded as adaptation to climate change. These research efforts contribute to policy discussions on the topic, and emerging policy responses nationally, regionally and internationally.

6 Jäger et al. (2009); Warner et al. (2009, 2011).

7 See Betts (2010); Black et al. (2011).

8 Third Session of the UNFCCC Ad Hoc Working Group on Long-Term Cooperative Action under the Convention (AWG-LCA 3), Accra, Ghana, 21–27 August 2008, FCCC/AWG/LCA/2008/MISC.3; Submission entitled Climate Change and Migration: Impacts, Vulnerability, and Adaptation Options made on 18 August 2008 by the United Nations University to the Third Session of the UNFCCC Ad Hoc Working Group on Long-Term Cooperative Action under the Convention (AWG-LCA 3), Accra, Ghana, 21–27 August 2008.

9 For more information on the IPCC’s Fifth Assessment Report (AR5), see <http://www.ipcc.ch>, last accessed 24 May 2013.

10 Contribution of Working Group II to the IPCC’s Fifth Assessment Report, Chapter 12.

I. Migration as Adaptation or as Failure to Adapt? Four Migration Profiles along the Adaptation Spectrum

This section draws on new findings from the project entitled “Where the Rain Falls: Understanding Relationships between Changing Rainfall Variability, Food and Livelihood Security, and Human Mobility”, undertaken by the United Nations University Institute for Environment and Human Security, and CARE.¹¹ The Rainfalls work is supported by the AXA Group and the John D. and Catherine T. MacArthur Foundation. Findings emanate from Bangladesh, Guatemala, Ghana, India, Peru, Tanzania, Thailand and Vietnam. The case studies offer insights about current relationships between rainfall-dependent livelihoods and food security, and the circumstances under which households currently use migration to manage the risks of impacts on household consumption and income.¹²

- Rural people surveyed overwhelmingly perceive climatic changes occurring today in terms of *rainfall variability*. These perceptions shape household risk management decisions. The most common changes reported relate to the timing, quality, quantity and overall predictability of rainfall, including delayed onset and shorter rainy seasons; reduced number of rainy days per year; increased frequency of heavy rainfall events; and more frequent prolonged dry spells during rainy seasons. In many

11 Warner et al. (2012), hereinafter *Rainfalls*. The Rainfalls research explores the interrelationships among rainfall variability, food and livelihood security, and human mobility in a diverse set of research sites in eight countries. While climate change affects nearly all aspects of food security – from production and availability to the stability of food supplies, access to food, and food utilisation (Schmidhuber & Tubiello 2007) – the Rainfalls research focused on linkages between shifting rainfall patterns and food production and the stability of food supplies (Jennings & Magrath 2009). The central focus of the Rainfalls initiative was to explore the circumstances under which households in eight case study sites in Africa, Asia and Latin America use migration as a risk management strategy when faced with rainfall variability and food and livelihood insecurity. See www.wheretherainfalls.org, last accessed 13 May 2013.

12 The data presented in this section was gathered during the execution of a project to assess the circumstances under which households use migration as a risk management strategy when facing rainfall variability and food and livelihood insecurity in Bangladesh, Guatemala, Ghana, India, Peru, Tanzania, Thailand and Vietnam. The research for Rainfalls was undertaken by the UN University Institute for Environment and Human Security, in partnership with CARE France. Funding came from the AXA Group and the John D. and Catherine T. MacArthur Foundation.

cases, these perceived changes correlate with an analysis of local meteorological data over the last several decades.

- The largely agriculture-based households in the research sites overwhelmingly report that rainfall variability is already negatively affecting production and contributing to *food and livelihood insecurity*. Levels of food insecurity varied significantly across the eight sites, depending on factors such as the total amount and seasonality of rainfall; the degree of agricultural intensification; the extent of livelihood diversification; and the access of poor households to social safety nets and other support services.
- *Migration*, which was common in the research sites, was observed to have the following characteristics: almost entirely within national borders; predominantly male, but with growing participation by women in a number of countries; largely by individual household members (with India as the exception, where entire nuclear families moved together); largely driven by livelihood-related needs (household income) in most countries, but with a growing number of migrants seeking improved skills sets (e.g. through education) in countries like Peru, Thailand and Vietnam; and a mix of rural–rural and rural–urban, with more productive agricultural areas (Bangladesh, Ghana, Tanzania), nearby urban centres (India, Peru), mining areas (Ghana), and industrial estates (Thailand, Vietnam) being the most common destinations.
- Households manage climatic risks, such as changes in rainfall variability, with migration. Migration – seasonal, temporal and permanent – plays an important part in the struggle of many families to deal with rainfall variability and food and livelihood insecurity. Migration was found to have increased in recent decades in a number of the research sites. Rainfall was observed to have a more direct relationship with household migration decisions in research sites where the dependence on rain-fed agriculture (often with a single harvest per year) was high and local livelihood diversification options were low. Pressure on rainfall-dependent livelihoods is likely to grow as a driver of long-term mobility in the coming decades if vulnerable households are not assisted in building more climate-resilient livelihoods, in situ.
- Households with more diverse assets and access to a variety of adaptation, livelihood diversification or risk management options – through social networks, education, or community or government support programmes – can use migration in ways that enhance resilience. Those households which have the least access to such options – few or no

livelihood diversification opportunities, no land, little education – use (usually) internal migration during the hunger season as a survival strategy in an overall setting of erosive coping measures, which leave or trap such households at the margins of decent existence.

A preliminary analysis of the household survey data was used to generate four broad profiles. These profiles relate to the use of migration in response to rainfall variability and food and livelihood insecurity. The first profile is most commonly found in countries that have been able to provide alternative livelihoods and food security to most people. This group uses migration in ways which improve their resilience, such as investing in education, health and climate-resilient livelihood opportunities. These households use migration as one of a variety of adaptation strategies, moving seasonally or temporally, often to non-agricultural jobs in cities or internationally. The second profile often occurs in countries with less food security and fewer options for diversifying livelihoods. This group uses migration to survive, but not flourish. They move seasonally within their countries to find work, often to other rural areas as agricultural labourers. The third profile occurs where food security is even more tenuous and where adaptation options are fewer, or are not pursued vigorously. This group uses migration as a means of gaining security, in what can be seen as an erosive coping strategy which can become part of a negative cycle in wider crisis situations. This group often moves during the hunger season to other rural areas in their region in search of food, or they work to buy food for their families. The fourth profile appear to be ‘trapped populations’ that struggle to survive in their areas of origin and cannot easily use migration to adapt to the negative impacts of rainfall stressors.

Each of these four profiles was visible across all the research sites, but some countries manifested clusters of households with dominant patterns. The profiles represent a spectrum, with households within a profile being closer to one or the other of the profiles on either side. They are, thus, not mutually exclusive, and serve as a point of departure for further research and work to refine key explanatory variables regarding forms of human mobility related to crisis and climate change.

II. Modelling Results and Future Scenarios

This section relates the four household profiles to an agent-based modelling approach applied in the Tanzania case to explore the scenarios in terms of which rainfall variability and food security have the potential to become significant drivers of human mobility in particular regions of the world in the next two to three decades.

In order to understand the potential for rainfall to become a significant driver of human mobility in the future, it is important to identify the range of impacts that likely scenarios may have on migration flows. By investigating the impact of rainfall variability on household- and community-level factors such as food and livelihood security, the influence of such variability on the decisions made by individual migrants can be further understood. Using the Rainfalls case study sites as examples of locations where changes in rainfall might contribute to increased food insecurity and human mobility, a process of future-oriented simulation and analysis provides a valuable opportunity to understand the circumstances under which rainfall variability might become a significant driver of migration.

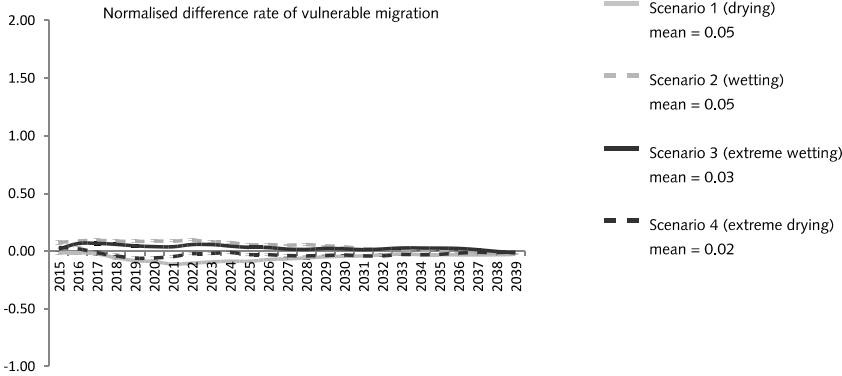
The Rainfalls Agent-based Migration Model (RABMM) represents vulnerability and migration decision-making at two levels of agent analysis: the household and the individual, both of which can be generated from the household survey data collected in each case study location. The RABMM is designed to represent the degree of vulnerability of households to rainfall-variability-induced changes in livelihood and food security, and the subsequent impact of these on the migration of household members. The research identified a range of impacts that likely scenarios may have on migration flows, and showed that rainfall changes have the potential to become a significant driver of human mobility in the future.

Tanzania Results: Migration from 2014–2040 under drier, wetter and extremely dry/wet rainfall scenarios

Using the conceptual framework described above, the Tanzania RABMM outputs the number of migrants originating from contented and vulnerable households across the case study villages.¹³ Figure 1 shows modelling results under the same scenarios for migrants from *Resilient* households.

13 Warner et al. (2012).

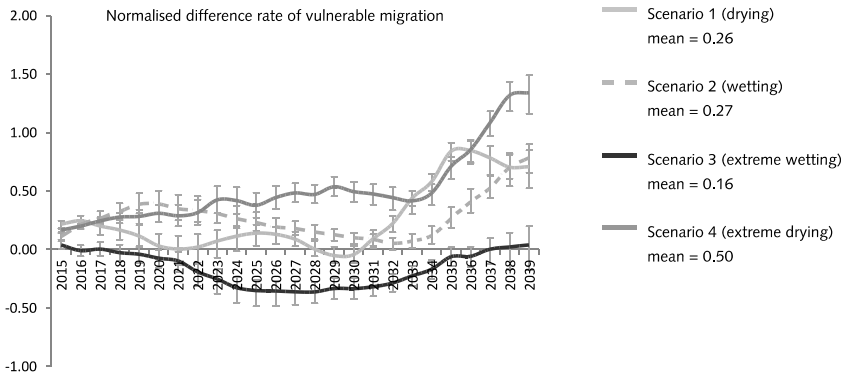
Figure 1: Five-year Moving Averaged Normalised Difference in the Rate of RABMM-modelled Contented Migration*



* Error bars indicate the envelope of changes modelled under five member ensembles.
Source: Warner et al. (2012:110)

The results of the modelling for contented migration shown in Figure 1 show a much lower level of sensitivity to changes in rainfall than is the case for vulnerable migration. The mean annual normalised rate of contented migration under the scenario is 0.05 – only 5% greater than that seen under the ‘average’ scenario. In contrast, Figure 2 shows the modelling results for *vulnerable* households in Tanzania’s Same district.

Figure 2: Five-year Moving Averaged Normalised Difference in the rate of RABMM-modelled Vulnerable Migration*



* Error bars indicate the envelope of changes modelled under five-member ensembles.

Source: Warner et al. (2012:108)

The agent-based modelling results from Rainfalls are pertinent to discussions of crisis migration in the context of climate change: households using migration to build resilience (*Contented Migration*) show a much lower level of sensitivity to changes in climatic patterns than is the case for *Vulnerable Migration*. Vulnerable households have a higher sensitivity to different rainfall scenarios and feel an imminent need to change their situation through migration. Changes in rainfall patterns can impact food and livelihood security in the future and have the potential to increase the vulnerability of many households worldwide.

The two graphics illustrate the key finding of the modelling exercise in Tanzania and the main message from the Rainfalls study: resilient households use migration in ways that appear to reduce their sensitivity to climate stressors over time (the first graphic), while vulnerable households use migration in ways that either does not affect their climate sensitivity over time, or may exacerbate it through related actions such as selling land or productive assets, migration-interrupting skill-building, and education in children (as seen in the India case). When such vulnerable households face scenarios of changing rainfall variability, particularly of extreme drying, migration rises notably over time.

Case study and modelling results illustrate the circumstances under which migration decisions occur, showing that both *Contented* and *Vulnerable* households use migration, but in markedly different ways that either enhance

resilience or reinforce a downward spiral of vulnerability to climatic and other stressors. These findings point towards the key importance of the types and quality of adaptation measures chosen by countries. Many of these activities happen under the umbrella of economic and social development. Increasingly, a newer set of (ideally) complementary activities are emerging under the umbrella of climate adaptation efforts at the national level – spurred by international discussions in the ‘climate negotiations’ of the UNFCCC. We now turn to examining the potential of UNFCCC discussions to provide guidance for adaptation activities that include the management of human mobility.

C. The UNFCCC and Human Mobility in the Context of Climate Change

To understand the treatment of human mobility in the climate policy arena, one must understand a larger discussion around impacts of climate change, framed largely by a discourse between the Alliance of Small Island States (AOSIS) and industrialised countries. The period from the early 1990s to the early 2000s was marked by an emphasis on mitigation – the collective reduction of greenhouse gas (GHG) emissions linked to changes in global temperature increases. This period saw the creation of the Kyoto Protocol, carbon markets, the Clean Development Mechanism, and other measures. By the mid-2000s, and certainly with the publication of the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report in 2007, the process reflected an emerging scientific realisation that emissions targets are too low to prevent anthropogenic interference with the earth’s atmosphere. Hence, it is also necessary to discuss adaptation and issues around negative impacts of climatic change on human society.

The position of the AOSIS was underpinned by the idea that states that had experienced loss and damage related to climate change could seek assistance to rehabilitate their societies (ideally to pre-climate-change status). AOSIS had articulated this proposal since the early 1990s, framing it as a kind of ‘assurance’ against a wide range of climate change impacts. The early focus was on cautioning high-emitting countries about the consequences of not curbing their emissions (e.g. ‘the polluter pays’ principle). AOSIS and other allies have emphasised that sea-level rise (which can lead to displacement) could drastically affect the functionality of societies in low-lying countries. A range of possible outcomes, including population movement, were framed as indicators of severe challenges to in situ adaptation.

Avoidance, according to this view, was the only acceptable approach, and some parties (least-developed countries, AOSIS, and other vulnerable countries) championed the 1.5°C goal.

A second strand of discussion was introduced around the time of the 2007 IPCC Fourth Assessment Report and the release of the Stern Review:¹⁴ scientists and policymakers began to concur that some impacts of climate change may already be manifest, and that adaptation was, therefore, a necessary complement to mitigation in order to cushion the blow to society from some of the expected impacts of climate change. By 2007, the 2007 IPCC Report and other scientific and policy discussions had firmly laid the case for the need for mitigation to be accompanied by adaptation in the UNFCCC process. This contributed to discussions about the need for coherence and coordination of adaptation activities, appropriate finance, and planning activities that would help countries (particularly those most vulnerable to the negative impacts of climate change) to adapt.

Thus, these two parts of the dialogue under UNFCCC discussions – mitigation and adaptation – fundamentally shaped how human mobility became couched within adaptation, and have contributed to thinking about issues like governance, funding and management of human mobility. Perhaps of greater long-term significance, the recognition of human mobility within the UNFCCC process has helped spur United Nations (UN), regional, and national discussions of finding stable trajectories for societal transformations within changing climate regimes. Such discussions include security and notions of borders, population shifts in particular regions, and moving from current adaptive practice to those practices which will be appropriate in the future.

D. Cancun Adaptation Framework and Potential Roles in Addressing Human Mobility

At the Conference of the Parties in Cancun, Mexico (COP16), the draft text containing several key elements for the operationalisation and funding of adaptation – notably the Cancun Adaptation Framework – was accepted. This Framework outlined key areas that would qualify for adaptation sup-

14 Stern (2006).

port, including the first-ever reference to adaptation and human mobility in an internationally agreed climate policy. Paragraph 14(f) reads as follows:

14. Invites all Parties to enhance action on adaptation under the Cancun Adaptation Framework, taking into account their common but differentiated responsibilities and respective capabilities, and specific national and regional development priorities, objectives and circumstances, by undertaking, inter alia, the following:
...
(f) Measures to enhance understanding, coordination and cooperation with regard to climate change induced displacement, migration and planned relocation, where appropriate, at national, regional and international levels.

The Cancun talks also articulated elements necessary for implementation of such activities as the Adaptation Committee, National Adaptation Planning processes, the Green Climate Fund, and the Work Programme on Loss and Damage.

I. Significance of Paragraph 14(f) for the Management of Human Mobility

The framing of human mobility in the climate negotiations is important for several reasons:

- In the context of the UNFCCC, mobility is acknowledged as having a link to climate change and is framed as an issue *to be managed*. It provides a stepping stone on a ‘technical’ level (rather than as political dialogue) for transitions between immediate-term use of existing approaches to necessary longer-term paradigm changes about population shifts, governance of borders and mobility, livelihood viability, planning in certain regions, etc.
- Paragraph 14(f) couches human mobility within the realm of adaptation to climate change and subtly introduces the thought that adaptation may require longer-term societal transformations. This suggests that adaptation may be understood not only as incremental changes in the way people live in certain locations, but also more broadly to include “transformational adaptation” that could include new locations.¹⁵
- Paragraph 14(f) frames human mobility as part of a wider range of measures that can be funded under the emerging climate finance regime to

15 Kates et al. (2012).

assist vulnerable countries to adjust to current and expected climate changes. Depending on how the states parties articulate their adaptation needs, human-mobility-related activities will be eligible for climate finance, i.e. managing migration, preventing or reducing displacement, and – where appropriate – undertaking planned relocation. Other than the UNFCCC, no other forum internationally or regionally has created a space in which a range of issues and possible activities is recognised and linked to the upcoming climate finance regime.

- Paragraph 14(f) has significance for *implementation*. As the institutional arrangements for adaptation continue to be shaped, human mobility (and the other areas mentioned in the Cancun Adaptation Framework) will expand from a topic for discussion into a topic for policy and operations. This will have meaning for development cooperation (particularly around livelihoods), humanitarian and disaster-risk reduction work, urban and rural planning, etc.
- Finally, Paragraph 14(f) provides an opportunity to further articulate *policy options* at appropriate levels (subnational, national, regional, international) and along the spectrum of human mobility. The work of the Adaptation Committee has now advanced to a draft, three-year programme, including the development of guiding principles for adaptation and efforts to coordinate and increase policy coherence for items included in the Cancun Adaptation Framework. The decision will be made in Autumn 2012 regarding the location and implementation of the Green Climate Fund as a vehicle for funding activities outlined in the Cancun Adaptation Framework. The National Adaptation Planning processes are moving forward, and nations are in the process of integrating climate policy into wider national planning efforts. The COP18 in Doha reached a decision on loss and damage, which included continuing work to understand, enhance coordination, and facilitate action on loss and damage as well as a mandate to establish institutional arrangements at COP19 in Warsaw. Such an arrangement could assess, address and coordinate issues that may extend beyond (certain current definitions of) adaptation, including migration, displacement and relocation. Furthermore, the presence of human mobility in one policy forum (UNFCCC) has and will continue to influence discussions in other arenas, including the UN Security Council, the Global Forum on Migration, the high-level dialogue on migration, and regional forums.

These last two points are important because, arguably, few other arenas emphasise discussion, action/planning and financial resources for implementation like the UNFCCC does. As described in other literature,¹⁶ the existing institutional arrangements to manage voluntary migration and mobility related to natural disasters are full of gaps. Few coordination or planning mechanisms are in place to address relocation related to environmental or climate change: most are related to development projects. Paragraph 14(f) provides initial inroads into these areas for the future.

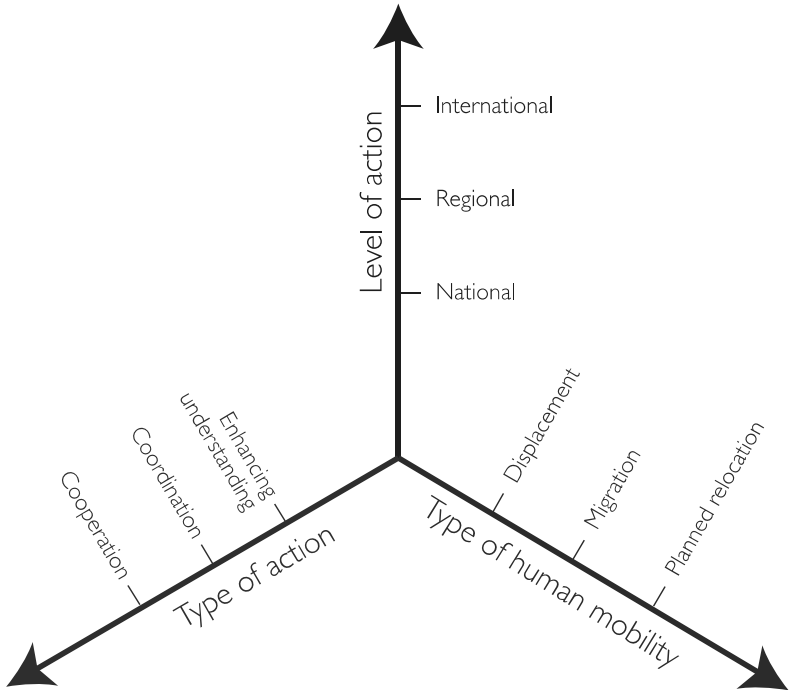
II. Potential Adaptation Actions Related to Paragraph 14(f)

Questions now arise regarding the activities and modalities for implementation which could emanate from the inclusion of migration and displacement in the Cancun Adaptation Framework. This section explores what some of the likely combinations of measures, types of movement and levels may emerge in the short term. It also explores what kinds of entities might be involved in future interventions, and how these might be funded.

The discussion outlines kinds of activities (enhanced understanding), types of human mobility (displacement, migration, planned relocation), and levels of addressing the issue (national, regional and international). Figure 3 represents a matrix of the text in paragraph 14(f). Figure 4 displays an assessment of possible types of measures that could emerge – and have already partially emerged in 2011 – in relation to paragraph 14(f).

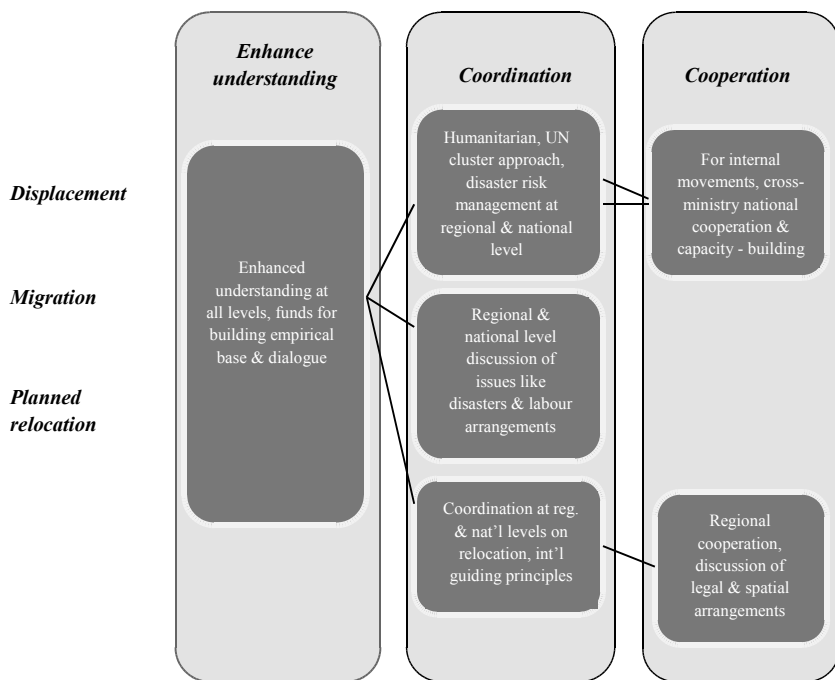
16 Warner (2010).

Figure 3: Structure of Paragraph 14(f): Type of Human Mobility and Action, and Levels of Action



Source: Warner et al. in Foresight (2011)

Figure 4: Possible Types of Measures that Could Emerge in Relation to Paragraph 14(f)



Paragraph 14(f) is likely to result in enhanced understanding at national, regional and international levels. If the current pattern continues, it is likely that funding for building the empirical base via research, case studies, etc. will come from bilateral sources, as individual countries call for specific studies and dialogue at conferences, meetings, etc. This has already happened, e.g. the Nansen Conference hosted by Norway in June 2011, which focused on climate-induced displacement, as well as several research projects supported by various Asian and European governments. The latter projects looked mostly at migration, but also at displacement. Regional and international dialogue on research findings is also expected, particularly with the IPCC's Fifth Assessment Report due in 2014, which will feature a chapter reviewing migration and displacement in the context of adaptation to climate change, and several additional chapters presenting scientific findings on human mobility in different regions.

It is expected that coordination efforts on displacement will continue along current humanitarian organisation lines through the UN cluster approach, and under the auspices of disaster risk management. It is likely that these will continue to be financed through humanitarian assistance channels, at least in the short term. Coordination efforts will happen at all levels, but particularly at regional and national level. Coordination on voluntary migration is less clear, but may begin to be discussed at international and regional level. Individual countries may choose to address whether tools such as temporary protection status should be broadened or altered to include a variety of environmental processes beyond natural disasters – typically, rapid-onset extreme events. Planned relocation is possibly the least-developed area of coordination at this point, but is likely to become far more prominent in the medium term as countries begin to think through potential consequences of mitigation and adaptation projects which may require population relocation. These kinds of coordination measures will be needed at both regional and national level, while at international level, guiding principles may be needed, such as those now available for development-project-related relocation. International expert discussions on the topic, including the two Bellagio roundtables in 2010 and 2011, have already begun.

E. Gaps the UNFCCC Process May Help Address: Longer-term Thinking about Human Mobility and Climate Change

Now that migration, displacement and planned relocation have been highlighted in the UNFCCC climate negotiations, governments increasingly want to know more about the potential impacts of climate change and human mobility in order to prepare their own appropriate legal, institutional and governance approaches. Research suggests that the complex forms of migration and displacement will mix internal and cross-border movements. These movements will raise policy-relevant questions when people cannot return to their places of origin because of environmental factors that include sea-level rise, desertification and water issues. Parties to the UNFCCC have a role to play in minimising pressure on vulnerable populations and providing adaptation options, as well as guiding the management of migration, displacement and planned relocation in harmony with the protection of and respect for the dignity and safety of those involved.

I. Leading up to 2015 and milestones in development, humanitarian and climate policy arenas

The next few years will provide opportunities to fill knowledge gaps and support decision-makers with more and better-quality information about the role of environmental factors in the combination of issues that affect human migration, displacement and planned relocation.

Emerging dialogue around human mobility in the context of climate change focuses on climate variability and the use of existing tools. There is a risk that emerging issues related to human mobility and climate change may introduce needs that are not addressed by existing tools and institutions. One of the potential challenges to the position of countries that emphasise using current institutional frameworks is that these frameworks are already insufficient and may become more stressed in the future. A few examples of policy frameworks addressing this issue are available, such as temporary protection status in the United States and Europe, or principles and soft laws for protecting people who have been displaced by environmental events. Yet beyond humanitarian approaches for rapid-onset extreme events, there are significant governance gaps. Complex and slow-onset events could pose a major challenge to legal and governance frameworks, in part because responsibility and temporal limits are difficult to assign. Moreover, various institutions that deal with different issues related to the impacts of climate change may have a tendency to operate in ‘silos’, and may approach issues such as climate change within narrow, sectoral perspectives.

Paragraph 14(f) of the Cancun Adaptation Framework, the emerging work of the Adaptation Committee, National Adaptation Planning processes, the Green Climate Fund and the Work Programme on Loss and Damage provide spaces where some of these potential risks can be addressed.

II. Between 2015 and 2020

Policy spheres like the UNFCCC could be useful spaces for enhancing understanding, building dialogue, and facilitating regional cooperation and coordination at the policy and operational level around human migration, displacement and planned relocation. The key will be to align the appetite and needs of the governments with a range of appropriate – and politically feasible – measures. Given sensitivities of governments about the causes and societal consequences of climate change, calls for complex arrangements or

measures that require significant ‘political capital’ to achieve may face little success. For example, in the current political environment, recommendations for commitments for expended or new protection that touch on existing arrangements for the protection of refugees could face resistance.

The development of a guiding framework around climate change and related human mobility, based on the positive experience with the guiding principles for internally displaced persons in the late 1990s, could emerge to help states prepare for the expected impacts of climate change on migration and displacement. Such a framework could be a constructive input from relevant stakeholders to bodies such as the Adaptation Committee, which will help provide coherence and coordination across other areas, i.e. activities of the Adaptation Fund and Green Climate Fund, National Adaptation Planning processes, and the Work Programme on Loss and Damage.

In the medium to longer term, when human mobility related to climatic change is expected to become more apparent, operational cooperation will be needed at both regional and national level to manage flows of people. Where movements – displacement, migration, relocation – are internal, cross-ministry national cooperation and capacity-building may be needed. These kinds of activities may be funded through existing bilateral channels or potentially through the emerging climate finance architecture. Where movements occur in border areas, regional cooperation may be necessary. Examples of regional labour migration agreements may be models for the future, but will require several years to design and implement.

III. Beyond 2020

The need for large-scale, unplanned human mobility may be ameliorated to some degree through effective mitigation and adaptation measures, particularly in the areas of sustainable agriculture and rural livelihood diversification. It will become increasingly important to ensure that poorer countries and communities become institutionally and operationally equipped to support widespread adaptation (including livelihood diversification) to manage climatic risks and shifts in population distribution (including various types of mobility). Measures should be implemented which ease tensions that could arise around food security, resource availability, and issues around national borders. The period before 2020 will be a time of setting trajectories and laying the groundwork for new or adjusted institutional forms to deal with a broader range of climatic impacts, including human mobility.

In the medium and longer term, the humanitarian response could be overwhelmed by growing disaster-related displacement. Disaster risk reduction and measures to avoid loss and damage may not keep pace with the incremental and potentially permanent changes associated with desertification, sea level rise, ocean acidification, loss of geologic and other freshwater sources, etc. which can add pressure to human mobility. Such scenarios underscore the need for new thinking about managing and planning for the impacts of climate change on human mobility, ranging from migration to displacement to relocation. It will be necessary to address longer-term developments in human mobility, and it will become increasingly important to develop approaches that consider shifts in the baseline situation of many regions. Current risk management approaches, many of which include mobility, may be insufficient or inappropriate in a changed climate situation in the future. It will be important to incorporate long-term time horizons (or ‘climate foresight’) as opposed to simple ‘impact/vulnerability’ mapping (which results in providing short-term ‘coping’ strategies) in adaptation planning.

In scenarios of the world beyond 2°C, the impacts of climate change – combined with other megatrends such as the world population growth, changes in technology, and other unforeseen shifts in society – could require a new approach or forum for particular discussions including on migration, displacement and planned relocation.

There is a need for longer-term planning mechanisms related to human mobility which may be difficult to attain in the context of voluntary, non-binding international cooperation. It would be useful to include ‘transformational’ adaptation strategies – as opposed to merely ‘improved coping’ strategies – for current climatic conditions in specific locations. For example, typical community-based adaptive activities in coastal Bangladesh include providing assistance to vulnerable communities in low-lying areas, raising house plinths to keep the houses above flood level, and harvesting rainwater to ensure clean drinking water is available and to offer protection against the intrusion of salinity into surface and groundwater supplies.

A longer-term strategy would include empowering, training and building the skills of younger generations – including children – in those communities to be in a position to adjust not only to variability, but also to change. This may include development-related resilience-building, such as enabling young people to get climate-appropriate and/or better-paying jobs in nearby towns over the next decade. Such resilience-building would include social, financial and environmental aspects. In this way, the younger generation

would be able to take their families with them if survival in their current location became increasingly more difficult. This kind of longer-term, ‘empowered relocation’ strategy, as opposed to ‘forced migration’ or even ‘planned relocation’, would ideally be part of a participatory process about when, how, where and who would move within affected households and communities. The Adaptation Committee, National Adaptation Planning processes, and managers of climate finance could take such longer-term perspectives into account when recommending or funding adaptation-related activities – in this case, those that relate to mobility.

F. Conclusions

The existing UNFCCC agreed-upon language around human mobility in the Cancun Adaptation Framework and the Doha Climate Gateway Decision provide milestones and points of departure for this journey. In the future, appropriate frameworks, policies and governance structures are needed to address human population movements. Such developments would enhance the development of effective measures that would enable governments to manage climate-change-related human mobility in proactive ways that safeguard the security, dignity and living standards of migrants, displaced and relocated people – as well as those ‘left behind’.

References

- Afifi, Tamer, 2011, Economic or Environmental Migration? The Push Factors in Niger, *International Migration (International Organization of Migration Special Issue)* 49, s1, e95–e124.
- Betts, Alexander, 2010, Survival Migration: A New Protection Framework, *Global Governance* 16 (3), 361–382.
- Black, Richard, Stephen R.G. Bennett, Sandy M. Thomas & John R. Beddington, 2011, Climate Change: Migration as Adaptation, *Nature* 478 (7370), 447–449.
- Brown, Oli, 2008, Migration and Climate Change, IOM Research Series No. 31, Geneva, International Organization for Migration.
- Christian Aid, 2007, *Human Tide: The Real Migration Crisis*, available at http://www.christianaid.org.uk/Images/human_tide3__tcm15-23335.pdf, last accessed 10 December 2012.
- El-Hinnawy, Essam, 1985, *Environmental Refugees*, Nairobi, United Nations Environment Programme.

- Foresight, 2011, *Migration and Global Environmental Change*, Final Project Report, London, The Government Office for Science.
- Hugo, Graeme, 2008, *Migration, Development and Environment*, Geneva, International Organization for Migration.
- IPCC/Intergovernmental Panel on Climate Change, 2007, *Fourth Assessment Report, Climate Change 2007 (AR4)*, available at http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml, last accessed 24 May 2013.
- Jäger, Jill, Johannes Frühmann, Sigrid Grünberger & Andreas Vag (Eds), 2009, *Environmental Change and Forced Migration Scenarios Project Synthesis Report, Deliverable D.3.4 for the European Commission*, Gipuzkoa, Universidad del Pais Vasco.
- Jennings, Steve & John Magrath, 2009, *What Happened to the Seasons?*, Oxfam Research Report, London, Oxfam.
- Jónsson, Gunvor, 2010, The Environmental Factor in Migration Dynamics – A Review of African Case Studies, International Migration Institute Working Paper 21, Oxford, International Migration Institute.
- Kates, Robert W., William R. Travis & Thomas J. Wilbanks, 2012, Transformational adaptation when incremental adaptations to climate change are insufficient, *Proceedings of the National Academy of Sciences of the United States of America* 109, 7156–7161.
- Laczko, Frank & Christine Aghazarm (Eds), 2009, *Migration, Environment and Climate Change: Assessing the Evidence*, Geneva, International Organization for Migration.
- Martin, Philip, 2010, *Climate Change, Agricultural Development, and Migration: Background Paper for the Transatlantic Study Team on Climate Change and Migration*, Washington, D.C., Georgetown University and United Nations University Institute for Environment and Human Security.
- Martin, Susan F., 2010, *Climate Change and International Migration: Background Paper for the Transatlantic Study Team on Climate Change and Migration*, Washington, D.C., Georgetown University and United Nations University Institute for Environment and Human Security.
- Morrissey, James, 2009, Environmental Change and Forced Migration: A State of the Art Review, Refugee Studies Centre Background Paper, Oxford, Refugee Studies Centre.
- Myers, Norman, 2005, Environmental Refugees: An Emergent Security Issue, conference paper presented at the Thirteenth Economic Forum, Prague, 23–27 May.
- Schmidhuber, Josef & Francesco N. Tubiello, 2007, Global Food Security under Climate Change, *Proceedings of the National Academy of Science of the United States of America* 104, 19703–19708.
- Stern, Nicholas, 2006, *The Economics of Climate Change, The Stern Review*, Cambridge, Cambridge University Press.
- Tacoli, Cecilia, 2009, Crisis or Adaptation? Migration and Climate Change in a Context of High Mobility, in: Guzmán, José Miguel, George Martine, Gordon McGranahan, Daniel Schensul & Cecilia Tacoli (Eds), *Population Dynamics and Climate Change*, New York/London, United Nations Population Fund & International Institute for Environment and Development, 104–118.

- Warner, Koko, Charles Erhart, Alex de Sherbin, Susana Adamo & Tricia Chai-Onn, 2009, *In Search of Shelter: Mapping the Effects of Climate Change on Human Migration and Displacement*, Geneva, United Nations University, Institute for Environment and Human Security.
- Warner, Koko et al. 2011, Migration and Displacement in the Context of Adaptation to Climate Change: Developments in the UNFCCC Climate Negotiations and Potential for Future Action, in: Foresight, *Migration and Global Environmental Change*, Final Project Report, London, The Government Office for Science.
- Warner, Koko, Tamer Afifi, Kevin Henry, Tonya Rawe, Chris Smith & Alex de Sherbinin, 2012, *Where the Rain Falls: Climate Change, Food and Livelihood Security, and Migration*, Global Policy Report of the Where the Rain Falls Project, Bonn, United Nations University Institute for Environment and Human Security & CARE.