



with support from the Rockefeller Foundation

**Researching the environment and migration nexus: The way forward.  
Research brief<sup>1</sup> based on the outcomes of the 2nd Expert Workshop on Climate Change,  
Environment, and Migration  
23 - 24 July 2009, Munich-Germany**

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# 1. Foreword/Acknowledgements

This research brief is based on the outcomes of the 2nd Expert Workshop on Climate Change, Environment, and Migration that took place between the 23 - 24 July 2009 in Munich-Germany. This workshop was organized by UNU-EHS, together with IOM, the Munich Re Foundation, and UNEP, with the generous support of the Rockefeller Foundation. The authors of this research brief would like to thank the experts for their contributions such as (in alphabetical order): Tamer Afifi, Sami Areikat, Carina Bachofen, Christian Barthelt, Philippe Boncour, Robin Bronen, Susan Cutter, Tom Downing, Jean-Francois Durieux, Kim Goldstein, Mohamed Hamza, Graeme Hugo, Jenty Kirsch-Wood, Dominic Kniveton, Jobst Koehler, Michelle Leighton, Laurent LePage, Marc Levy, Thomas Loster, Musonda Mumba, Alina Narusova, Anthony Oliver-Smith, Etienne Piguet, Xiaomeng Shen and Roger Zetter.

## 2. Introduction

The journey - migration, exodus, pilgrimage, a quest for homeland - is a familiar storyline running through many human cultures, and often "nature" plays a role in these journeys. Throughout history, we have indications that environmental changes have contributed to temporary and permanent migration. Pre-history and history are marked by (episodic and localised) migration and displacement from one climate zone to another, as people sought out environments that would support survival as well as aspirations to a more stable existence. Some waves of migration and displacement have been associated with societal collapse, as familiar landscapes no longer provided safe or supporting habitats and livelihoods for people.

Our planet has experienced profound climatic changes before. What appears to be different this time is the role of humans in contributing to the change; anthropogenic climate change is undermining the ecosystems upon which almost all life forms depend. Today climatic changes are also affecting how and where people live, and whether they can continue living in their traditional homelands.

One recent report noted "In coming decades, climate change will motivate or force millions of people to leave their homes in search of viable livelihoods and safety. Although the precise number of migrants and displaced people may elude science for some time, all available estimates suggest their numbers will be in the tens of millions or more. The mass of people on the move will likely be staggering and surpass any historical antecedent.<sup>2</sup>" Given the potential of climate change and other forms of environmental change to profoundly affect human mobility<sup>3</sup>, we know surprisingly little about how these factors interact.

A noted scholar suggested recently that despite widespread anecdotal evidence, generalised assumptions and emerging research findings, we still have little empirically grounded knowledge or conceptual understanding of the links between the environmental impacts of climate change and population mobility<sup>4</sup>.

Research and policy dialogue are beginning to respond to this need. "Environmentally induced migration – or "environmental migration" – is an area where scientific inquiry is burgeoning. Recent major milestones have emerged to offer a rich, more differentiated understanding of environmentally induced migration. In February 2007, the International Organization for Migration (IOM) organized an **IOM Experts Meeting in Bangkok on Migration & the**

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<sup>2</sup> Warner, K.; Erhart, C. & Sherbinin, A. (2009): In Search of Shelter: Mapping the Effects of Climate Change on Human Migration and Displacement. Care International

<sup>3</sup> International Organization for Migration (2009): Climate Change, Environmental Degradation and Migration: Addressing Vulnerabilities and Harnessing Opportunities.

<sup>4</sup> Zetter, R. (2009): Future Research on Climate Change, Environment And Migration. Contribution to the 2nd Expert Workshop on Climate Change, Environment, and Migration 23 - 24 July 2009, Munich-Germany.

**Environment.** Following up on this meeting, in April of 2008, the Rockefeller Foundation sponsored a workshop in Munich organized by the United Nations University Institute for Environment and Human Security (UNU-EHS) and IOM and supported by the Munich Re Foundation and the United Nations Environment Programme (UNEP), the **2008 Expert Workshop**<sup>5</sup>. This second workshop brought together a diverse group of international experts in the fields of migration, social vulnerability, and environmental research. The workshop resulted in a **global research agenda**, and the first steps in creating the **Climate Change, Environment, and Migration Alliance (CCEMA [www.ccema-portal.org](http://www.ccema-portal.org))**. A notable set of milestones has been reached in the research and policy dialogue on environmentally induced migration. Here we list just a few from 2009:

- **A Major study including 23 empirical case studies worldwide.** The Environmental Change and Forced Migration Scenarios Project (EACH-FOR, [www.each-for.eu](http://www.each-for.eu)), supported by the European Commission's 6<sup>th</sup> Framework Programme, was recently completed. These 23 case studies represent an important critical mass upon which further fieldwork and theoretical development can be refined. Partners include ATLAS Innoglobe Ltd (Hungary), UNU-EHS (Germany), Erasmus University Rotterdam - European Research Centre on Migration and Ethnic Relations (The Netherlands), Bielefeld University, Center on Migration, Citizenship and Development (Germany), Sustainable Europe Research Institute Nachhaltigkeitsforschung und Kommunikations GmbH (Austria), Université de Liege - Center for Ethnic and Migration Studies (Belgium), and Universidad del País Vasco / Euskal Herriko Unibertsitatea (Spain). As part of this set of activities, UNU-EHS organized one of the first international conferences for academics, policy makers, and practitioners, the Environmental Change, Forced Migration and Social Vulnerability Conference (EFMSV, [www.efmsv2008.org](http://www.efmsv2008.org)) in Bonn in October of 2008. This conference resulted in a published volume (autumn 2009, IOM), and a special edition of the journal *International Migration* (early 2010).
- **A state-of-the-art book.** With the financial support of the Rockefeller Foundation, the IOM in collaboration with UNU-EHS is systematically taking stock of existing research evidence in the field of migration and the environment. The results are published in a state-of-the-art book. The book assesses the current gaps in migration and environment research, and the identification of innovative methods of analysis and data collection. It highlights the implications for policy and prepares the ground work for further empirical and a larger-scale global programme of work.
- **UNFCCC climate change negotiations.** Several organizations including IOM, UNHCR, UNU, OCHA and other partners have contributed to the issue of climate change, migration, and displacement being brought into the ongoing climate negotiations. Currently the issue is reflected in the draft negotiating text and recognized as a potential impact of climate change. Other organizations such as the Refugee Study Centre at Oxford, the German Marshall Fund, Georgetown University, and many others have undertaken important policy analyses.
- **Platforms for raising awareness, promoting, understanding and dialogue.** The Climate Change, Environment, and Migration Alliance (CCEMA) was initiated at the 2008 Expert Meeting in Munich. CCEMA has grown into a functioning network of operational, policy, and academic institutions. CCEMA has an operating unit and website ([www.ccema-portal.org](http://www.ccema-portal.org)), a steering committee, and has already begun to host a number of different events to promote increased awareness understanding, and dialogue. Further, the Inter-Agency Standing Committee (IASC) created a Task Force on Climate Change, Migration, and Displacement to coordinate discussions on the topic

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<sup>5</sup> Please find the Synthesis Report of the 2008 Expert Workshop online at: <http://www.ccema-portal.org/file/Rockefeller.pdf>

and promote effective joint activities. This Task Force has been working towards raising awareness of human mobility impacts in the context of the climate negotiations.

Finally, numerous articles and reports on environmentally induced migration have been produced in recent years. Climate change, environment and migration is not a black box. New and more differentiated research and policy understandings have emerged.

## **2.1. The 2nd Expert Workshop on Climate Change and Migration in Munich, Germany**

To build upon these milestones, the 2nd Expert Workshop on Climate Change, Environment, and Migration was organized. The overarching goal of the workshop was to bring together some of the leading experts<sup>6</sup> in the field to assess the state-of-knowledge and push the envelope of data forward. The **2009 Munich Workshop** aimed to further understand the links and implications of climate change and environmental degradation for migration and policy. The workshop had three objectives:

- **Identify key questions, research themes and innovative research methods** needed for more accurate data collection and cross-cutting approaches to migration and the environment; as well as compare perspectives on migration, the environment, and social vulnerability.
- **Contribute to the development of strategies** and tools needed to produce evidence-based research and policy related to migration, social vulnerability, and the environment. Helping to identify alternatives for policy makers and assist governments to better manage the likely effects of environmental change on migration in order to develop long-term strategic policies with regard to migration and the environment.
- **Contribute blueprint(s) for building knowledge and fostering action.** Experts come together and assess the current state-of-the-art, discuss where the community would like to be in the future in terms of knowledge and action, and begin charting a path towards those medium- and longer-term goals.

## **2.2. Four themes related to climate and environmental change, migration, and displacement**

The 2009 Munich Workshop provided a collaborative discussion platform for policy makers, academics, and practitioners about climate change, environment, and migration issues. The workshop examined four thematic topics. These topics were intended to facilitate in-depth expert examination, leading to a set of recommendations about concrete next steps in research and policy. The four topics can be viewed as a kind of “journey” originating in environmental processes which trigger migration, the process of environmental migration themselves, policy frameworks and institutions that attempt to address environmentally induced migration and finally an examination of environmentally induced migration adaptation including resettlement, relocation schemes. Thus, four expert working groups examined:

1. **Environmental triggers and drivers** that affect human mobility
2. The **migration process** for environmentally induced migrants
3. **Institutional and legal approaches, governance** frameworks
4. **Adaptation continuum**, including resettlement / relocation schemes for environmentally induced migrants.

The following chapters present the workshop outcomes discussed under the four major foci. The research brief concludes with the key messages of each section and recommendations for policy development and research on climate change, environmental change and migration.

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<sup>6</sup> Please see the Annex for a List of Participants of the 2009 Munich Workshop

### 3.Environmental triggers and drivers that affect human mobility

This section presents the main outcomes of the discussions on environmental triggers and drivers, as well as input experts offered prior to the workshop<sup>7</sup>.

#### 3.1. Challenges: Complexities of isolating environmental factors in migration

The literature on environmentally induced migration consistently notes the multiple ways in which environmental changes interact with migration flows, as well as the multiplicity of social, economic, cultural and environmental dimensions within which those interactions take place.

Various studies have shown that environmental triggers and drivers might have the potential to affect the mobility of large magnitudes of people in the future. Nevertheless, there are different kinds of triggers and drivers that may influence the migration “decision”. Rapid onset disasters have different implications for human mobility compared to slow onset events such as desertification, or the negative impacts of climate change. There is a need to understand the weight that environmental triggers and drivers have on human mobility, especially regarding slow onset events and climate change. Growing empirical evidence on the linkages of environmental change and migration already exists and helps to improve future predictions into established scenarios, nevertheless there is still a lack of data and empirical evidence. Experts pointed to trends in the increasing number of natural disasters worldwide. They emphasized the fact that the time to act is now and links do exist, even though we do not yet know how significant these links are.

While focussing on the effects of climate change in the future it has to be considered that there are a variety of challenges constraining the use of climate information by various actors. “Different stakeholders need and produce different data and information. While humanitarian actors focus on the current situation; climate science generators are more interested in the future impacts of climate change. These different mandates pose a major challenge for researching the migration-environment nexus. The uncertainty and lack of confidence of climate change prediction data does add on to the challenges. A major challenge is the fundamental difference between climate variability and climate change; the problems of climate variability and climate change are “intrinsically connected” and cannot be clearly separated. These challenges lead to the most unwieldy one, that of complexity and inevitable surprise resulting from nonlinear, and therefore hard to pin down relationships. These challenges highlight the gap between the science community and the humanitarian community and the need for a better dialogue between those fields.<sup>8</sup>”

In any given region, environmental migration differs in scale, magnitude and location. Environmental factors have different impacts on international, regional or internal migration depending on the temporal impact, such as slow onset or fast onset events, of the environmental stressor. “International migration flows following environmental shocks and stresses can increase or decrease depending on the social-economic and psychological contexts and barriers to migration of those exposed. Short term internal migration can be initiated under varied socio-economic contexts by environmental stresses and shocks. Future work on the migration-environment nexus has to produce **separate analysis according to**

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<sup>7</sup> The expert group on environmental triggers and drivers that affect human mobility was composed of: Etienne Piguet, Christine Agharazam, Sami Areikat, Mohamed Hamza, Dominic Kniveton , Laurent LePage , Benedikt Rauch , Marc Levy, Marc Stal

<sup>8</sup> Hamza, M. (2009): Climate Change and Human Consequences: Bridging the Data-Policy Gap. . Contribution to the 2nd Expert Workshop on Climate Change, Environment, and Migration 23 - 24 July 2009, Munich-Germany.

**destination of migrant and type of migrant.** Additionally, future work has to focus on **how existing migration flows may be affected by environmental change in the future.**<sup>9</sup>

### **3.2. Solutions: Appropriate methods and data**

In order to provide policy-relevant research, future investigation needs to focus on the gaps in information regarding the nexus between the environment and migration. Research on environmental triggers and drivers that affect human mobility should focus on the following research questions:

- **How to characterise/analyse/quantify the sensitivity of multiple interacting drivers of migration to environmental changes?**
- **Under what conditions environmental drivers trigger migration?**
- **How to develop a menu of interventions to deal with environmentally sensitive migrations?**

Research should focus on an integrated assessment of environmental impacts on migration behaviour via scale dependent and context dependent monitoring mechanism. Case studies will also help to highlight best practice solutions and exchange experience. As a starting point for future empirical evidence, a meta-analysis of existing literature could serve as a basis and be used to scale up good practice. Additional empirical evidence could also be used to develop and expand the treatment of environmental factors into new or existing migration theories. Another focus for future research should be to develop new methods for assessing the current situation and understanding the impacts on social development, conflicts and security.

### **3.3. Practical next steps: Combine quantitative and qualitative approaches, data**

In order to characterise, analyse and quantify the sensitivity of multiple interacting drivers of migration, future research needs to answer these research questions with a certain degree of generality. Experts recommend that research should further develop case studies, using approaches which focus on quantitative and qualitative data collection and continuing methodological development.

#### **Data: Census, combined use of socioeconomic and environmental data**

Census data has to be used and analysed in respect to the research question(s). In addition, multilevel data based on specific areas has to be gathered via questionnaires. On the one hand ethnographically informed large samples of individual data should be assembled, such as social demographic, capital bases, or data based on migration history. On the other hand, local indicators of the environmental, climatic and of the economic situation in the area need to improve. These indicators of potential drivers of migration and their interactions with other factors would help answering questions related to environmental triggers, drivers and migration behaviour.

The collection of this data and indicators could be approached within a panel study including migration observatories monitoring a sub-sample of people every few years. Additionally, more empirical studies on the basis of existing work will help to fill the data gaps.

#### **Methods: Innovations needed to combine qualitative and quantitative approaches**

Qualitative and quantitative data needs to be combined and should feed into different methodological approaches, such as multilevel statistical analysis, agent based modelling, micro simulations or systems dynamic models. The research on environmental triggers and drivers that affect human mobility should improve the interpretation/understanding of the results through ethnographic/qualitative work, working closely with local communities, collecting and sharing the gathered information.

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<sup>9</sup> Kniveton, D (2009): Triggers and Drivers. Contribution to the 2nd Expert Workshop on Climate Change, Environment, and Migration 23 - 24 July 2009, Munich-Germany.

## **4. The migration process for environmentally induced migrants**

The EACH-FOR case studies, the Environment, Forced Migration and Social Vulnerability Conference book and special journal edition, as well as the IOM/Rockefeller state of the art book are good points of departure for future research<sup>10</sup>. According to these reports environmental migration might be short term, long term, seasonal or circular. Yet especially in regard to slow onset events such as desertification, a more refined understanding of the interactions is needed. Studies have identified that the most vulnerable people are the worst affected and environmental migration mainly happens regionally, internally and sometimes across borders. Additionally, migration requires resources, hence the poorest are less able to migrate long distances as this may necessitate substantial resources. There is still an absence of coherent information for modelling plausible current migration patterns and future environmentally induced migration flows. Additionally, it is unclear on how to use and triangulate existing sources of migration with other sources.<sup>11</sup>

### **4.1. Challenges: The need to understand impacts of environmentally induced migration in sending and receiving communities**

Future research needs to aim for a more nuanced understanding of environment, development and migration links within the context of the migration process for environmentally induced migrants. This understanding should involve the diverse impacts of migration in receiving and in sending communities, as well as the different impacts of migration on particularly vulnerable groups, such as children, women and elderly. Recent literature and research has identified that internal migration is the most likely part of environmentally induced migration; therefore an increased attention on internal migration has to be taken.

### **4.2. Solutions: Evidence-based scenarios, longitudinal surveys**

The complexity and the political nature of migration, combined with a lack of research funding hinder comprehensive research on the topic of migration processes of environmentally induced migrants. As environmentally induced migration is interwoven with other forms of migration, research should not focus on environmental drivers alone.

The construction of evidence-based scenarios could provide one way to improve the understanding of trends of future environmentally induced migration flows. Activities such as mapping of hotspots, vulnerable areas and populations, could contribute to building such scenarios. Various factors could result in the decision to migrate; therefore there is a need to identify the combination of factors that result in migration. Within this context it is central to understand the reason why migration occurs: whether migration was an adaptation strategy, a non positive response to environmental change or if and what other alternatives were explored prior to the move. It is crucial to get a better understanding of the complex interactions of environment, social and economic factors and how they impact human mobility.

There is a need for more detailed case studies that provide better data and focus on the social dynamics of migration in a changing environment. In order to avoid redundancy, a more efficient use of local knowledge and work, as well as a worldwide network of researchers dealing with environment and migration research should be established. The data generated in future case studies could help to understand if there is a difference between environmental migration and other migration processes in order to provide clarity on causal mechanisms.

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<sup>10</sup> Please find more information about these outcomes in the introduction.

<sup>11</sup> The expert group on the migration process for environmentally induced migrants was composed of: Graeme Hugo, Tamer Afifi, Carina Bachofen, Christian Barthelt, Jobst Koehler, Xiaomeng Shen.

#### 4.3. Practical next steps: Hotspots analysis, in-depth case studies, modular approaches

To provide decision makers with evidence-based insights about migration processes related to environmental change, experts suggested five activities:

1. **Stocktaking and systematic comparative analysis** of existing environment and migration – related work, to identify gaps and develop new theoretically grounded case studies.
2. **More detailed case study work** based on the most representative socio-geographic hotspots. These studies have to be in-depth, comprehensive and over a time horizon of several years. Local stakeholders and representatives of poor and vulnerable groups have to be integrated in participatory exercises. Based on these case studies, scenarios could be developed.
3. Adding modules on environment and migration to **existing social and economic survey programs**. Within the analysis of quantitative and qualitative data, best practices of environment and migration processes need to be identified and developed, to inform policy making. Additionally, future research could focus on developing new methods to investigate migration and environment.
4. Working with local researchers and other **capacity building** programs in areas of environment and migration research and policy, help to foster future research and develop new methods of environmentally induced migration processes. To raise awareness and actively influence policy making, research on the migration process for environmentally induced migrants needs to overcome barriers between different scientific fields. This need for multidisciplinary approaches should be incorporated in the analysis and interpretation of the data collection, the data capacity building and the hotspot identification.
5. A comprehensive program to analyze internal and international migration data from the global **2010 census**<sup>12</sup> could be taken from a perspective sensitive to environmental migration. In 2010 new population census data will be available. This upcoming data needs to be analysed within the context of environmental migration. This analysis could be combined with further quantitative and qualitative studies that are coordinated in migration destinations and origins.

### 5. Institutional and legal approaches, governance frameworks

Often, the media and policy makers approach the issue of climate change, migration, and displacement by asking questions related to “how many” migrants will come. At times the dialogue devolves into angst-producing rhetoric about “waves” of desperate people (referred to as “climate refugees” in some media reports) crossing international borders to reach a safer existence. The more important issues revolve at this time not around the potential numbers of environmentally induced migrants - current expert estimates vary widely and are not based on scientific method. Experts in this working group<sup>13</sup> noted that this kind of media and public discourse actually masks the more directly relevant questions of how particular national institutions could be affected by climate change and human mobility.

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<sup>12</sup> “The United Nations Statistical Commission, at its 36th session (March 2005), approved the 2010 World Programme on Population and Housing.” (Source: <http://unstats.un.org/>)

<sup>13</sup> The expert group on Institutional and legal approaches, governance frameworks was formed by: Jean-Francois Durieux, Philippe Boncour, Robin Bronen, Michelle Leighton, Thomas Loster, Musonda Mumba, Koko Warner

## **5.1. Challenges: Shaping appropriate institutional, legal, and governance frameworks to manage climate change and human mobility**

The point of departure for the discussion was whether examples could be found of adequate frameworks to address environmentally induced migration. A discussion followed mentioning different examples of existing principles, frameworks, and soft laws for protecting people who have been displaced by environmental events<sup>14</sup>. Operational and policy experts commented, however, that a prescriptive approach which imposed ideal legal or institutional or governance frameworks upon nation states would likely be ineffective. Several ongoing attempts were noted with an effort to make the case for various forms of international recognition and protection of “climate refugees”. While these efforts are admirable in their intellectual attempt, the practical reality remains that nation state interests drive national and international policy formation. Nation states will (likely) only adopt measures if they feel it is in their own interest to do so. Further, operational and policy experts again noted the potential risk of introducing refugee protection frameworks parallel to or within the existing 1951 Geneva Convention. This is a well-documented discussion in human rights literature.

The expert group directed their attention to the central challenge: what do states need to know about the potential impacts of climate change and human mobility in order to prepare their own appropriate legal, institutional, and governance approaches? States form policies relevant to climate change and human mobility in specific cultural, social, economic, and political contexts. The current financial crisis has affected both migration as well as climate change policies in nations across the world, and in a variety of ways. The institutional frameworks in different countries have inherent constraints. For example, with time, many institutions become rigid and are facing challenges responding to certain situations regarding environmental migration. 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.

Experts further pointed out that various institutions deal with different issues related to the impacts of climate change. These institutions have a tendency to operate in “silos” and may approach issues such as climate change within narrow sectoral perspectives (i.e. the spill over or system wide impacts of climate change may be difficult to detect from such a perspective).

## **5.2. Solutions: Mapping potential impacts of climate change and migration on existing national institutions**

Experts suggested that, rather than proposing solutions for nation-states, it would be helpful to assist states in understanding the institutional implications of climate change and human mobility. Experts could play a role in increasing understanding about the impacts of climate change on migration, in partnership with governments of different countries and regions. A natural next step would be national and regional dialogues exploring institutional options and exchanging experience. The focus would remain for some time on helping national governments design their own institutional approaches. Research could help identify areas where governments have the institutional capacity to manage potential future environmental migration, and potential gaps in capacity and frameworks.

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<sup>14</sup> A few examples exist of legal approaches to protecting environmentally induced migrants: The Convention on governing the specific aspects of refugee problems in Africa or the Temporary Protected Status of the United States of America, Finland or Sweden can serve as examples for such agreements and policies. However, these instruments do not yet address a range of environmental processes such as slow onset environmental events. Other international frameworks overlap and are also inadequate; for example due to the reluctance to broaden definitions and coverage. Hence, there is a growing interest in researching soft laws and non binding agreements that comprise the environment migration nexus, as it is unlikely to implement a global convention to respond to the specific problems environmentally induces migration poses to those affected, governments and the international community.

### **5.3. Practical next steps: National-level impact analysis**

To develop various frameworks and provide a set of options to countries dealing with environmental migration, a mapping exercise of available frameworks and best practice solutions should be undertaken. Such a mapping exercise could start at a national or sub national level and identify best practice processes like relocation or resettlement. The mapping could start by gathering answers to the following questions in countries affected by environmental migration.

- What are current institutions, laws, and governance structures that address environmentally induced migration?
- Are there gaps?
- What dynamics do we see in the migration process?
- What does climate change mean for institutional set-up and robustness?
- Are there available scenarios based on climate science?
- Where are the challenges, barriers, opportunities of environmentally induced migration?

This first attempt of data gathering at the national level could be expanded with case studies of legal institutions in identified hot spot areas. Site visits could foster a policy dialogue about potential future climate change impacts. The policy dialogue could extend to affected communities in order to involve the communities in the process of responding to climate change induced migration. Additionally, an assessment for institutions under future climate change scenarios could identify gaps and help to avoid inefficient practices. The gathered information could influence a dialogue at a national and regional level in order to provide institutions with the required policy alternatives and legal governance approaches. The outcomes of the above mentioned assessment would identify the following:

- Impact scenarios for institutions, legal, governance frameworks
- Socioecological factors that bring resettlement into discussion as a policy option
- Indicators that signal transitions in mobility

## **6. Adaptation continuum: Under what conditions is human mobility a form of adaptation?**

“Our responses to climate change today will help determine whether migration will be a matter of choice in a wider range of adaptation options, or whether forced migration and displacement will be a matter of mere survival due to a collective failure to provide adequate adaptation alternatives<sup>15</sup>”.

There is emerging evidence that environmental changes are a driving factor in migration today coming out of field studies such as the EACH-FOR and other projects<sup>16</sup>. Yet the study of environmentally induced migration lacks a coherent framework for approaching the topic, both in general and more specifically for analyzing questions related to adaptation to climate change. As climate change progresses, it will become increasingly relevant to understand the nuances between “migration as a coping or survival strategy” or “migration as an adaptation process”. Thus, policy makers and researchers need to understand whether migration represents a form of adaptation to climate change; and if so, when and under what conditions does migration become adaptive?

### **6.1. Challenge: What is meant by “adaptation” and what is the unit of analysis?**

The group explored the hypothesis that migration can be considered “adaptive” if the basic integrity (social, economic, cultural, etc) of the adaptive unit is maintained. Two sets of issues

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<sup>15</sup> Warner, K.; Erhart, C. & Sherbinin, A. (2009): In Search of Shelter: Mapping the Effects of Climate Change on Human Migration and Displacement. Care International.

<sup>16</sup> The expert group on the adaptation continuum was composed of: Anthony Oliver-Smith, Janos Bogardi, Susan Cutter, Tom Downing, Kim Goldstein, Jenty Kirsch-Wood, Alina Narusova.

require clarification in order to analyse whether migration is a form of adaptation and under what combination of conditions. First, what is the definition of “adaptation” which will be used to judge whether migration is an adaptive response. Natural and social sciences conceptualize adaptation differently, and examine different variables. In adaptation literature, for example, adaptation is portrayed in several ways<sup>17</sup>:

- the ability of a system to adjust to climate change and climate variability,
- the ability to moderate potential damage,
- the ability to take advantage of opportunities, or anything that enhances capacity to protect lives and livelihoods
- the ability to cope with consequences.

Second, what are the characteristics of the adaptive unit under consideration? Documentation of past experience suggests that the basic integrity of systems change when human movement occurs. For example, the literature has noted that different cases of involuntary resettlement have sometimes become “secondary disasters” in themselves. This is in part due to insufficient funding, poor planning and implementation, and a process which uproots people without effectively helping those people find permanent to sustainable solutions after displacement<sup>18</sup>.

## **6.2. Solutions: Working definition, does migration meet standards of other forms of adaptation?**

To begin unravelling the question of whether and under what conditions human mobility might be a form of adaptation, several steps could be taken.

First, experts acknowledged that even authoritative scientific sources such as the IPCC do not provide one agreed definition of adaptation. The current literature does not clearly distinguish between adaptation and coping. Coping may be thought of as an ad-hoc response to shocks and stressors. Coping implies decision-making in response to immediate challenges, for which there is no single, universally appropriate response. Adaptation may imply institutionalized knowledge and practice which can or had become-part of a society’s tool kit for managing existence.

Thus to answer questions such as “Is migration a form of adaptation?” or “Is migration a failure of adaptation?” researchers could use a working definition of adaptation to climate change for the purposes of discussing migration (i.e. not necessarily applicable to the wider debate, but specific enough to tackle the question at hand). Such a working definition could help assess both empirical observations as well as helping to inform forward-looking policy. This approach has proved useful in the case of environmentally induced migration—a working definition introduced by IOM to facilitate practical work and dialogue.

Another step forward for research would be to provide more insights about the specifics of environmentally induced migration under particular circumstances. Some of the following questions could be posed in research to make progress in this area:

- Does migration meet the standards of other adaptation mechanisms or strategies? A review of NAPAs and country performance or experience yields examples of adaptation to climate change. Often these activities are complementary to development, including education and other forms of capacity building, investment in water and sanitation and public infrastructure, technical measures such as alternative water storage systems, agricultural methods which conserve water and soil, diversification of livelihoods, risk sharing groups, etc. It would be useful to understand whether forms of migration could be parallel to any of these in a functional sense.

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<sup>17</sup> Fussel, H.M., Klein, R.J.T. 2006. Climate change vulnerability assessments: An evolution of conceptual thinking. *Climatic Change* 75(2), p 301-329.

<sup>18</sup> In this context, experts recommended research exploring the role of voluntary and involuntary movement in the sustainability of migration outcomes related to environmental change.

- Is migration an adequate or adaptive response, and how could research establish this fact in light of equity and quality of life issues?
- Policy failure? Does migration, including displacement and resettlement, have elements of policy failure that could prevent people facing environmental change from having other alternatives to migration?

### **6.3. Practical next steps: Metrics, dialogue on resettlement, operational guidelines**

**Science.** To complement research needs outlined in other working groups, experts suggested mapping hotspots of climate change and migration and observing how stressors combine to result in migration. Mapping exercises can build upon existing knowledge of vulnerable areas and examine other planning and operational measures, including disaster risk reduction. A promising avenue for additional research could be the development of metrics for enhancing resilience and adaptation; such a step could serve as an intermediate step to filling data gaps outlined by other expert groups in the workshop. Finally, experts also noted that it would be useful to explore relocation and resettlement experiences, looking at the likelihood that such approaches could represent an adaptation strategy to protect people from climate and other forms of environmental change.

This research will have practical and theoretical elements which could contribute to other areas of adaptation research and policy. For example, research design would need to address how environmental change including climate change affects the choice of adaptive units. Policy-relevant research would help address how research at the household, community, or other levels yield useful results and insights about adaptation and migration.

**Policy.** Experts noted a need for governments to share experiences with migration and displacement. Currently many governments lack specific mobility policies, such as relocation, at the national and international levels. Experts suggested that dialogue is needed to explore the costs related to migration and displacement in regard to environmental change, as well as the potential benefits. Policy makers will increasingly need to understand host-guest issues particularly related to groups of people moving together. Policies will need to be informed by knowledge of how migration and displacement affect vulnerability—migration or how resettlement may reduce exposure to one kind of (environmental) threat but may increase social vulnerability in destination areas. Policy makers will also need guidelines about the characteristics of migration and displacement and the potential needs of people on the move: is migration an anticipatory move? Is the movement coping with an emergency condition? Is the movement a measure of survival and last resort?

**Operational.** At a practical level, there is a need to develop basic documentation of existing experience with relocation and resettlement, and “good practice” guidelines. This would improve knowledge and practice by improving understanding of the multifaceted and complex challenges of human mobility linked to environmental change, including group resettlement. Experts noted that funding for assistance in the future may be tied to adaptation plans; that is, countries may be more likely to receive funding if migration and relocation are constructed as adaptation options. This points to the possibility that policy and funding for affected people is tied to set (and simplified) categories like “migration is adaptation”. These categories may be approached by science with greater caution due to future uncertainty. Experts noted that it is not yet clear whether relocation and resettlement meet the standards of other adaptation strategies. Finally, to gain more traction on questions related to adaptation and human mobility, there is a need for participatory approaches that encourage stakeholder dialogue, empower people made mobile because of environmental factors (particularly climate change), and help ensure cultural continuity of affected communities.

## **7. Outlook and way forward**

Experts elaborated that it is crucial to understand how existing migration flows may be affected by climate change in the future. Research should seek to understand the interaction between

drivers of migration and environmental changes. Moreover a holistic hotspot analysis of environmentally induced migration is important to comprehend the interacting drivers of migration, adaptation processes as well as the role of vulnerability in migration patterns. Further, experts pointed out that responses to environmentally induced migration are country driven and research should focus on providing best practice solutions as well as a set of options to manage the impacts of environmentally induced migration.

Some of these thoughts have been and will be represented in policy forums ranging from the United Nations 64<sup>th</sup> General Assembly in September 2009, and the climate negotiations (Bangkok and Barcelona) leading up to the Copenhagen Climate Summit in December of 2009. Researchers among the expert group and wider network of scholars will move ahead and report back their findings in peer reviewed and other types of publications, as well as train a new generation of students in the methods and findings regarding environmentally induced migration. Finally, policy makers and practitioners will hopefully test these ideas, help discover new questions to ask, and implement good practices. In this combined approach, we hope to contribute to the process of moving from knowledge to action in the area of climate change, environment, and migration / displacement.

## 8. Annex: List of Participants of the 2009 Munich Workshop

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