THE NANSEN INITIATIVE
DISASTER-INDUCED CROSS-BORDER DISPLACEMENT

Discussion Paper on the Relationship between Climate Change and Human Mobility
Professor Walter Kaelin, Envoy of the Chairmanship of the Nansen Initiative
27 April 2015

In December 2010, the Conference of Parties (COP) of the UNFCCC agreed upon the Cancun Adaptation Framework that introduced paragraph 14(f), recognizing that climate change induced human mobility is part of the adaptation challenges to climate change and invited Parties in (paragraph 14(f)):

> to enhance action on adaptation under the Cancun Adaptation Framework […] by undertaking inter alia, the following: […] 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.

Displacement is also recognized as an important element to be addressed by the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts. The potential impact of natural hazards on human mobility was also recently acknowledged in the Sendai Framework on Disaster Risk Reduction 2015-2030.

This paper was requested by the Government of the Philippines, as current chair pro tempore of the Climate Vulnerable Forum (CVF), to contribute to the CVF's submission to the UNFCCC 2013-2015 Review of the Convention's temperature goal of 2.0 degrees Celsius. In particular, the Nansen Initiative[1] was requested to provide input on the question of potential implications of the current goal, and whether strengthening the goal to 1.5 degrees will likely result in a different outcome for migration and displacement. In the initial stages of the 2013-2015 Review process, the Climate Vulnerability Forum viewed that there was an information gap regarding migration and displacement within the process undertaken to date, particularly within the deliberations of the Structured Expert Dialogues.

Therefore, this paper provides a brief overview of the Nansen Initiative's contributions to building enhanced understanding on the relationship between climate change and human mobility (displacement, migration and planned relocation), as requested by the Parties in para. 14(f). The first section presents the concepts of human mobility and provides a conceptual framework for understanding how climate change impacts human mobility. The second section provides examples of

[1] The Nansen Initiative is funded by the Governments of Norway and Switzerland, with additional financial support from the European Commission, the Government of Germany, and the MacArthur Foundation. It is governed by a Steering Group comprised of nine Member States: Australia, Bangladesh, Costa Rica, Germany, Kenya, Mexico, Norway, the Philippines, and Switzerland. A Consultative Committee informs the process through expertise provided by representatives from international organizations addressing displacement and migration issues, climate change and development researchers, think tanks, and NGOs. A Group of Friends, coordinated by the EU and Morocco, is comprised of interested States and regional organizations who would like to be associated with the Initiative, and contribute through comments and proposals. The Envoy of the Chairmanship represents the Nansen Initiative throughout the process, providing strategic guidance and input. Finally, the Nansen Initiative Secretariat, based in Geneva, supports the process with additional strategic, research, and administrative capacity.

growing knowledge and research on the topic. The third section draws on the Nansen Initiative consultative process on cross-border displacement in the context of disasters and climate change to highlights how State representatives and other participants identified current and emerging challenges and opportunities related to the impacts of climate change on human mobility. The fourth section presents what current scientific evidence and modeling can provide in terms of scenarios on the implications of a lower temperature goal on displacement and migration. The fifth section concludes by highlighting the importance of including human mobility within the 2013-2015 Review process, while also emphasizing the need for additional data collection and research.

I. Conceptual Framework for Understanding the Impacts of Climate Change on Human Mobility

Human mobility in the context of climate change can take different forms and occur at different stages depending on the nature of the natural hazard and other contributing factors. Building upon paragraph 14(f), the Nansen Initiative uses human mobility to refer to three categories of movement: (predominantly forced) displacement,[2] (predominantly voluntary) migration,[3] and (voluntary or forced) planned relocation.[4]

In general, human mobility in the context of natural hazards and climate change is multi-causal and dependent on a wide variety of factors that contribute to an individual, family or community's overall resilience to withstand the impact of natural hazards. Therefore, before addressing the specific question as to whether strengthening the Convention's goal to 1.5 degrees will likely result in a different outcome for migration and displacement, it is important to first provide a conceptual framework to understand how climate change can impact human mobility.

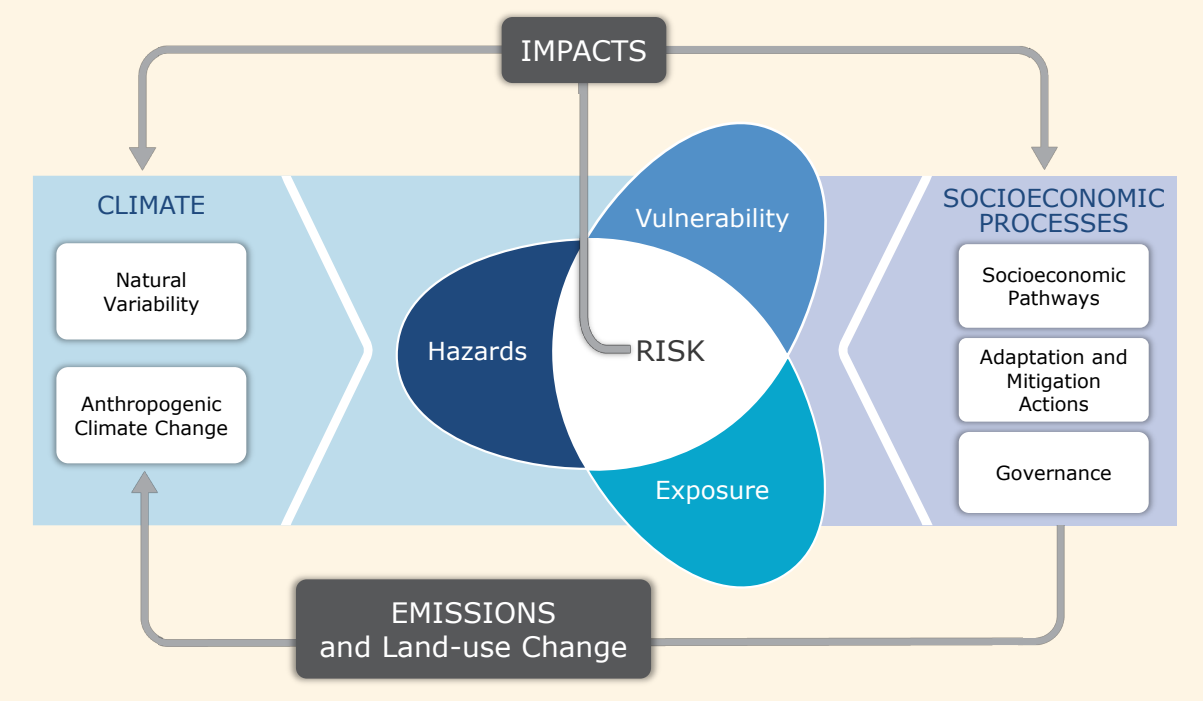
The IPCC's *Fifth Assessment Report* (AR5)—drawing upon the IPCC's own special report on extreme events (SREX) and UNISDR's *Global Assessment Reports*—explains that climate risks are the combination of three factors: hazard, vulnerability and exposure (Figure 1). Risks can mean fatalities, economic losses, health impacts or displacement. The risk of displacement is determined by likelihood of a hazard occurring, the number of people (and their homes and livelihoods) exposed to the hazard and their vulnerability to it.

[2] **Displacement** refers to situations where people are forced or obliged to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of disasters triggered by natural hazards.

[3] **Migration** can be a positive measure to avoid or adjust to changing environmental conditions, for instance by strengthening the resilience of individuals and families through improved economic opportunities. However, if not properly supported, migration may further exacerbate the vulnerability and undermine the resilience of individuals and families by placing them in a more precarious situation than if they had stayed in their place of origin.

[4] The **planned relocation** of people within a country is a measure taken in different parts of the world to move people from areas where they would face a high risk of exposure to a serious natural hazard. However, because of the many negative effects associated with past relocation processes, planned relocation is generally considered a last resort after all other options have failed and community resilience has significantly eroded.

Figure 1 IPCC's conceptual framework for climate-related risks



(Source: IPCC *Fifth Assessment Report*)

Climate change impacts are expected to increase the risk of displacement in two ways: 1) by altering the frequency and severity of certain hazards; and 2) by increasing the vulnerability of certain populations.

Displacement risk can be reduced in a number of ways, for example: by mitigating the effects of climate change on natural hazards; by reducing the number of people exposed to hazards through better land use planning and enforcement of zoning regulations; and by reducing the vulnerability of people and their homes to climate-related hazards.

II. Growing Research on the Relationship between Climate Change and Human Mobility

A growing body of research by academic institutions, international organizations, governments and other research institutions examines the complex relationship between climate change and human mobility, exploring not only negative impacts but also the potential for human mobility as an adaptation measure.

A significant body of research has established clear relationships between climate change and human mobility, and in particular highlights regional distinctions, both in terms of climate change impacts as well as the way in which people move in response.[5] Another body of research highlights the potential

[5] For example, see Foresight, *Migration and Global Environmental Change,* Final Project Report, The Government Office for Science, London, 2011; Koko Warner, Tamer Afifi, Kevin Henry, Tonya Rawe, Christopher Smith, and Alex de Sherbinin, "Where the Rain Falls: Climate Change, Food and Livelihood Security and Migration," Global Policy Report, UNU-EHS, November 2012; Frank Laczko and Christine Aghazarm, *Migration, Environment and Climate Change: Assessing the Evidence,* IOM, 2009; Jane McAdam (ed), *Climate Change and Displacement: Multidisciplinary perspectives* (Hart, Oxford, 2012); Graeme Hugo, *Migration and Climate Change,*(Edward Elgar Publishing: London, 2013); Etienne Piguet and Frank Lacsko, Eds. *People on the Move in a*

legal implications and related protection concerns that arise, particularly if people are displaced across borders, need to be relocated or if their entire country is no longer habitable given the impacts of climate change.[6] Other research explores the extent to which migration can be used as positive adaptation measure to climate change by both moving from away areas facing climate change related hazards to safer areas, as well as by sending back remittances or bring back skills and knowledge to affected areas to strengthen resilience to hazards.[7]

Such research was considered within the IPCC AR5's section on Human Security, which also took into account the regional dimensions and implications of climate change's impact on migration and displacement (discussed further in Section IV). Despite this growing body of research, given the complexity of the issue, additional data and research is still needed to fully understand to what extent and in what ways climate change has already impacted human mobility.

III. Conclusions from the Nansen Initiative Consultative Process

The importance of addressing the implications of climate change on displacement and migration, through both sudden and slow-onset natural hazards, was been consistently raised in the Nansen Initiative's inter-governmental and civil society regional consultations held over the past two years in the Pacific, Central America, the Greater Horn of Africa, Southeast Asia and South Asia.

Present and future trends

In each region, government representatives and other participants from civil society, international organizations and research institutions highlighted that the impacts of climate change on displacement and migration in the context of climate-related natural hazards are already a present day reality. According to IDMC, sudden-onset weather-related hazards triggered 85 per cent of all global displacement between 2008 and 2013, equaling some 140 million people.

In the Conclusions Document from the **Pacific** Regional Consultation, "Participants expressed concern that effects of climate change and recurrent natural disasters in the Pacific region increasingly trigger population movements. … Already, coastal erosion and the salinisation of fresh water sources and agricultural land associated with sea level rise prompt people to move to safer places or even make the planned relocation of whole villages necessary." For example, due to sea level rise, the Government of Fiji recently assisted 150 villagers to relocate from Vunidogoloa on Vanua Levu Island to higher ground in the village of Kenani, with tens of other villages in coastal and riverbank areas also identified for future relocation.

Changing Climate, (Springer: New York, 2014). Some researchers also look specifically at potential conflict and security implications of climate change related human mobility.

[6] For example, see Jane McAdam, *Climate Change, Forced Migration, and International Law* (Oxford University Press, 2012); Walter Kälin and Nina Schrepfer, "Protecting People Crossing Borders in the Context of Climate Change Normative Gaps and Possible Approaches" UNHCR, February 2012; Scott Leckie, Ezekiel Simperingham, & Jordan Baker, *Climate Change and Displacement Reader,* (Earthscan: Oxon, 2012); Elizabeth Ferris, "Protection and Planned Relocation in the Context of Climate Change," UNHCR, August 2012.

[7] For example, see Graeme Hugo, *Migration and Climate Change,* (Edward Elgar Publishing: London, 2013); IOM's Migration, Environment and Climate Change: Evidence for Policy Project (MECLEP); and the UNESCAP/ILO/UNDP's Pacific Climate Change and Migration Project.

States have also indicated concern about the impacts of climate change on human mobility in the future. In **Central America**, for example, the Costa Rican Vice-Minister of the Environment stated that research on historical data between 1971 and 2010 for Central America indicates a future trend of delayed rainy seasons with more intense rain falls over shorter periods of time, potentially causing flooding and land-slides, but with less overall total accumulation contributing to drought. She therefore argued for the need to prepare for the most extreme migration scenarios related to access to water and increased aridity. Coastal erosion, flooding, and the salinization of fresh water sources and agricultural land associated with sea level rise have also prompted some communities, including indigenous Kuna people of Panama, to plan for the relocation of their villages to higher ground.

In the **South Asia** Summary of Conclusions document, participants noted the multi-causal nature of displacement and "expressed concern that the impacts of climate change combined with rapidly growing, densely populated urban areas, population growth, and pre-existing vulnerabilities linked to social inequalities and poverty are likely to increase displacement and migration in the future, including across international borders."[8] Participants also "highlighted that such effects threaten affected persons' full enjoyment of human rights, including by damaging housing and infrastructure, restricting resource availability, and negatively impacting livelihoods and food security, especially for small, agrarian, and marginalized households in low-lying and mountain areas."

In the **Greater Horn of Africa** region, climate change is anticipated to increase the frequency and intensity of droughts with particular implications for pastoralist communities, as recognized by the IGAD Climate Prediction and Applications Centre. In the Regional Consultation Outcome Document,

> Participants recognized that the Greater Horn of Africa is not only affected by conflict and terrorism but is also vulnerable to the effects of climate change. They noted that the increased frequency and intensity of weather events, primarily droughts, floods, and tropical cyclones, are expected to lead to increased water stress, higher temperatures, desertification, decreased agricultural production, increased human and livestock diseases, livestock loss, and famine while sinking ground water levels and sea level rise cause salinization of land and water source and may pose threats to sea-side settlements.

Consequently, participants "recognized that the number of displaced people is likely to increase, with climate change also exacerbating the potential for conflict associated with weakened resilience to natural hazards and competition over scarce resources such as water and grazing areas."

Participants in **Southeast Asia** Regional Consultation highlighted the potential implications of climate change on human mobility through both slow changes, but also sudden-onset hydro-metrological disasters like tropical cyclones. In particular,

> Participants acknowledged that given the region's high exposure, Southeast Asia is also increasingly facing the negative impact of climate change through rising sea levels, ocean acidification, increasing salinity, coastal erosion, land degradation, and the increased

[8] Participants to the intergovernmental Regional Consultation experienced first-hand the challenges faced by victims of cyclones, sea level rise and coastal erosion when they visited a community living in Dacop Sutarkhali Union, Bangladesh.

frequency and intensity of hydro-metrological disasters that threaten human settlements, infrastructure, natural resources and associated livelihoods.

Participants thus identified the need to integrate mapping of disaster-related displacement risks with climate change risk scenarios and projections. It was also recognized that planned relocation was currently being used by States in response to annual flooding, for instance in the Mekong River Delta, but also following cyclones to prevent exposure to future hazards, such as following the 2013 Cyclone Haiyan, which displaced some four million people in the Philippines.

Possible action

Given these present and future challenges, participants in the Nansen Initiative consultative process have increasingly called for stronger mitigation efforts to avoid temperature rise, indicating that they view rising temperatures with increased implications on displacement and migration. Participants also repeatedly identified the need to take action now. Each Regional Consultation identified the importance of integrating human mobility considerations into national and regional climate change adaptation plans, such as the regional Strategy for Climate and Disaster Resilient Development in the Pacific in its final stages of development. The outcomes of the Regional Consultations also highlighted that while preparing for and responding to displacement when it occurs is crucial, States and regional organizations have policy options within the context of national adaption planning that can be implemented before displacement becomes a reality in view of preventing or mitigating displacement, reducing vulnerability, and strengthening the resilience of communities at risk of displacement, as well as potential host communities.

Such actions are needed to try to prevent or reduce displacement associated with the effects of climate change. Displacement poses significant protection concerns for individuals and communities. Displaced persons need to be able to escape the danger zone and reach a safe location. Upon arrival, they have to find a place where they can temporarily stay and avoid discrimination because of their displacement. Displaced persons might need to be reunited with family members separated during flight. While displaced, the property they left behind needs to be protected against occupation or theft by others or, when this happens, the property should be restituted to them. Finally displaced persons need to be able to find a durable solution to their situation by rebuilding their lives. In many situations, displaced persons face higher risks than non-displaced persons of gender-based violence, particularly if they live in collective shelters or camps; being trafficked; experiencing difficulties replacing lost documents, or remaining in extreme poverty without access to adequate livelihoods.

Throughout the Nansen Initiative process, participants have recognized that Least Developed Countries, small island developing States, African countries as well as middle-income countries face specific challenges and their populations are hardest hit. Thus, the critical importance of international attention to address the impacts of climate change on displacement and migration has emerged as a common theme throughout the Nansen Initiative consultative process.

IV. What Do Models and Climate Science (AR5) Already Tell Us the Greater Risk for Human Mobility?

Since it is impossible to predict how, where and what development, disaster risk reduction or climate change adaptation measures will be implemented, it is equally impossible to predict exactly how many people will be displaced in the future due to climate change impacts. That said, analysis of some of these scenarios indicates that displacement risk in the coming decades will be driven both by human factors and the impacts of climate change. By consequence, in assessing future displacement risk, the best one can do is explore and compare different scenarios.

The IPCC's AR5 found (with high confidence) that there is an increased risk of displacement associated with extreme events, and with increasing climate risks displacement is more likely become permanent, such as in coastal areas. The AR5 does not assess the difference in displacement risk associated with a 1.5 and 2.0 degree increase in global temperature. Indeed, a global temperature increase of any size would not be distributed evenly around the planet and thus requires additional modeling of regional impacts of a global change. However, it did find a greater risk of displacement—and less potential for effective adaptation—when comparing 2.0 and 4.0 degree warming scenarios.

For example, a model developed by the Internal Displacement Monitoring Centre and Climate Interactive found that the number of subsistence pastoralists in the Horn of Africa has a greater impact on displacement risk than changes in the frequency of droughts. This suggests that there are opportunities to reduce this displacement risk through adaptation measures that reduce the number of subsistence pastoralists such as livelihood diversification, adaptive migration to urban centres or family planning—or through measures which in turn influence these processes indirectly, such as increasing girls' enrollment in primary and secondary schools.

Even if adaptation measures are implemented, the IPCC found that flood risks are likely to increase with increasing greenhouse gas emissions (robust evidence base, high agreement among studies). Coastal cities in particular are identified as being vulnerable to flooding, and the IPCC reported (with high confidence) that urban housing is at risk due to climate change impacts. These more frequent floods will likely lead to more displacement.

The IPCC also warns of the gradual and cumulative impacts of other processes, such as reductions in agricultural and fisheries production, which may have knock-on effects related to displacement and migration among communities vulnerable to them.

V. Conclusion

Enhancing the understanding of the links between climate change and human mobility is an emerging field of analysis, and thus it is not presently possible to provide precise answers or data on the implications of a strengthened temperature goal. Even so, the Nansen Initiative's experience highlights the growing body of evidence on the relationship between climate change and human mobility, and underscores the need to support continued research and understanding in this area. It has also showed that many States, international organizations, civil society organizations and affected communities have indicated that the effects of climate change on displacement and migration are already a reality. Thus, participants within the Nansen Initiative consultative process have identified the need to strengthen existing mitigation efforts, and to anticipate and prepare for future impacts of climate change on human

mobility. In conclusion, while existing knowledge may not be sufficient to precisely differentiate between a 1.5 and 2.0 degree goal, it is clear that the effects of climate change on displacement and migration are a serious challenge that should be considered within the 2013-2015 Review.