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Session 5
Addressing the environmental factors of migration

Addressing Environmental Factors of Migration: Closing the Research and Data Gaps to Enhance Policy Responses and Early Warning

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Climate change due to greenhouse gas emissions is now, at some level, irreversible. The IPCC and other scientific bodies have modeled a number of future scenarios predicting changes in weather patterns, ocean currents, and more recently ecosystems. Little is positive. Researchers predict that as average temperatures increase, rainfall will become more variable, natural disasters will grow in intensity and frequency and sea-levels will rise. Food security will likely become a serious challenge as agricultural production is forecast to decline. Some countries will experience losses of one-third to one-half of their production over the next five to seven decades and for the tropical and subtropical countries perhaps by up to 60%. The poor in developing countries are the most vulnerable to the water scarcity, food insecurity, spread of disease, job loss and human displacement that are likely to be attendant with the predicted environmental change. Those dependent on rural agriculture are at greatest risk of losing their livelihoods because of slower-onset disasters, such as drought and desertification, and more immediately due to more rapid-onset disasters, such as storm surges, floods and hurricanes.

While predictions of large levels of human migration due to climate change in the next several decades are perhaps speculative, it is not unreasonable to conclude that some level of displacement and migration is likely. Some communities are already engaging in migration as a coping strategy for climate shocks and experts suggest that climatic events are increasing in severity (pointing to the doubling of natural disasters and floods in the past two decades and an increase in prolonged or *mega* droughts). A number of countries already consider migration in their national adaptation planning processes.

The climate debate leads to serious questions about the information available in this area: what we know and what we may need to know in the face of present and potential challenges. For example, what assistance do rural agricultural communities need to better prepare for and adapt to both existing and anticipated climatic events that may lead to temporary or permanent population displacement? How much do we know about the relationship between climate variability or *permanent environmental change* and migration within countries and as between countries in the OSCE region? Can we identify the most vulnerable communities? What are the implications of climate-induced population displacement for rural agriculture and development more generally? Are there "tipping points" of existing migration patterns that would, for example, convert temporary, local migration flows into more permanent, international migration? These issues are key to understanding how policy-makers can best prepare for and help affected communities.

In considering the development of appropriate policies related to migration, greater clarity on the role of climate change and environmental degradation in stimulating migration flows and conversely how migration may affect the environment is needed. A number of studies, particularly related to drought have yielded some important data on this topic. The case studies span the African and North and South American continents and a few have been completed in Central Asia and Europe. Most recently, the United Nations University project 'Environmental Change and Forced Migration Scenarios (EACH-FOR' sponsored by the European Commission in its 6th Framework Program) undertook an exploration of these issues at a preliminary level within 23 countries and community contexts, including a number of OSCE participating states, such as Russia, Spain, Turkey, Kazakhstan, Kyrgyzstan, Tajikistan, as well as two OSCE partner states for cooperation, Egypt and Morocco. The findings are now available at the official website of the EACH-FOR project (http://www.each-for.eu/). Other experts have also begun to examine past cases in an attempt to explore possible future climate-migration scenarios. The author is now concluding a survey and analysis of the case studies and information available for the U.N. Food and Agriculture Organization.

Existing research suggests that droughts, floods and other disasters, as they impact livelihoods and contribute to poverty, can play a significant role in migration, mixed within a more complex set of variables including finance and social networks between sending and receiving communities. Most of the population movements stay within countries, with people moving from rural-to-rural areas or to nearby urban centers. In some cases, they move across borders to neighboring countries, particularly where agricultural lands, water availability and jobs are more abundant. The unsustainability of agricultural lands and increasing drought in the African continent, for example, have contributed to higher levels of such migration in a number of countries. While most of the migration stays within the continent, (of 17 million migrants in Africa, 63% moved within the continent), both regular and irregular migration is increasing to the western and northern African coasts, and from there into European jurisdictions.

Higher levels of international migration due to environmental change pose challenges for developing and developed countries alike. International migration from developing countries is now equally divided between movement to other developing countries and to developed countries. Developing countries will encounter more pressure to handle higher levels of both immigration and emigration flows if rural people are forced to move longer distances in search of livelihood. The more frequent incidence and longer duration of droughts, the greater the challenges for sending and receiving communities, particularly where local infrastructure, employment and social services are already stretched. Emerging economies in the OSCE region are already suffering hardship in this area. Understanding how and where environmental change will *tip the balance* toward additional migration for vulnerable communities is therefore of great importance.

An evaluation of the research to date suggests that there are wide gaps in the information available to policymakers. These gaps exist in content (how and when environmental changes become a primary driver of migration, and what communities are most vulnerable), scale and methodology (breadth of studies, and methods for interdisciplinary analysis), and frameworks for appropriate migration management strategies. Few lessons of how best to manage climate-related migration have

been documented anywhere in the world. These, along with experience in transmigration and resettlement programs could be important to explore.

As a relatively new topic among social scientists, little research capital has been invested in broad-scale climate-migration studies. Those available are typically community-level studies and largely, though not always, anecdotal in nature. While these help to clarify context-specific socio-economic behaviors, their conclusions cannot readily be *scaled-up* to assist policy at the national level or used to create systems for *early warning.* The lack of statistically relevant data at the national or regional levels constrains the design of policies that could build resilience and promote adaptation among vulnerable communities.

Investing in the development of both short and long-term research, data collection, and monitoring projects could help to close these gaps. Three key areas warrant further attention.

1. Content of research and identification of tipping points: Further research is needed on how and when biophysical variables such as drought, desertification, storms, floods become a *primary driver* of migration, and on the impacts of that migration for sending and receiving areas. How and why families engage in migration is often the result of a complex set of variables, including the viability of farm employment, environmental stresses, economic policies, family and community networks between sending and destination area, and availability of financial resources to invest in migration. We know relatively little about the environmental "tipping points" that can lead to migration decisions. Case studies suggest, for example, that while prolonged drought can instigate international migration in some cases, in others it influences shorter-distance, seasonal migration. These anomalies can exist among communities in the same country. In-depth and comparative case studies are needed to better explain these relationships.

2. Scale of research, methodologies and identification of hot spots: National level data on environmental change related to migration could help policy-makers better identify communities at risk and *hot-spots* that need critical attention. However, national census and other statistics gathering efforts related to migration do not include environmental information that could help serve as identifiers in migration. In order to consider these relationships it is necessary to evaluate different environmental and socio-economic data sets. This poses a number of challenges, not just in the collection of data but in methodology for integrating and analyzing the data. First, researchers can differ in their selection of the indicators they believe best represent the environment-migration relationship. Among the biophysical variables the level of rainfall, vegetation loss, deforestation and or land-use change are all relevant but results may differ depending on which variable is chosen for analysis. Among socio-economic indicators, demographic data, levels of employment, agricultural land development, potable water distribution, education, access to social services, and community infrastructure are among a myriad of possible indicators that can influence migration.

Second, even after indicators are harmonized, a constraint is the availability and accessibility of data, particularly in developing countries. Not all data needed may have been collected consistently in the communities sought to be studied. Jurisdictions may have historically differed in their data collection, or simply not collected data at all for certain indicators. Thirdly, there remains the challenge of comparing and integrating the various environmental, social and economic data sets because these are often collected by different ministries at different points in time and at different scales (e.g., municipal versus statewide levels). Promoting interagency and cross-disciplinary data collection and data sharing could strengthen the capability of governments to observe and analyze migration patterns. Allowing researchers better access to official data could also enhance study results. One of the most significant opportunities to improve the level of information available in this area most immediately would be to collect environmental data via the national census process. In this way, data would more easily be comparable with migration and other demographic data. It would also allow for comparability of information in sending and receiving communities.

Finally, no consensus has yet emerged among the scientific community about which particular method or approach is best to identify, collect and analyze in an integrated manner the biophysical and socio-economic data which does become available. GIS mapping and modeling techniques for impact assessment do hold promise, but the census and other demographic, economic, agricultural and environmental data are not easily comparable. Methods are just now being explored to help correlate these disparate data-sets, though models still have great difficulty in clarifying actual "causation" or predicting environmental stress, poverty and migration in specific scenarios. The further development and testing of methods and models to produce information in a manner that allows policy-makers to better understand environment-migration patterns or to anticipate migration flows related to environmental change is needed. A larger investment in the development of research methodologies is warranted.

3. Analysis of policy options for managing environment-related migration: While the foregoing discussion has concentrated largely on identifying basic research and data collection needs to assist in more accurately documenting the problem and in policy responses toward prevention, a further critical need is a cogent analysis of options for countries in the OSCE region to *manage* environment-related migration. Countries have already begun to discuss migration as an adaptation planning strategy within the NAPAs and climate-related events already appear to be playing a role in some migration within OSCE countries. As yet, however, there are no specific policies or programs to manage this category of internal or international migration flows, particularly among destination countries, and there is a dearth of analysis of the appropriate frameworks that could be of value to policy-makers. The designation of temporary protected status, as it has been adopted by the EU and U.S., for example, has limited application to environmentally-induced migration. To date, only Sweden and Finland have explicit immigration policies concerning environmental migration, but these may be practically limited to larger disasters preventing return. Thus, research to explore appropriate ways and means for better managing climate-related migration flows *within* countries, and as between sending and receiving countries, within the OSCE region is warranted. The further consideration of humanitarian responses and human rights standards is also important, particularly if larger population displacement and/or resettlement initiatives will be considered in longer-term policy responses.

In the past two years a number of experts and academics have increasingly become interested in exploring avenues of research to better understand and close the data gaps in this field. While these are early days yet, research agendas are now being constructed. In addition to the UNU EACH-For project mentioned earlier, for example, the IOM, UNU-EHS, UNEP and the Munich Re Foundation have launched a dialogue with experts to elaborate a comprehensive global agenda for research on migration and the environment. A first meeting was held in Munich in 2008 and a second meeting will take place in July 2009. This dialogue is informally called the "Munich Process." A state of the art review of research on migration and the environment will be published later this year.