

# The Hugo Conference

Environment, Migration, Politics

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## Compendium of abstracts



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# The Hugo Conference

## Environment, Migration, Politics

*The year 2015 has been a crucial year for the people displaced as a result of environmental changes: in March, the Sendai Framework for Disaster Risk Reduction acknowledged the need to address displacements. In October, 110 States adopted the Protection Agenda of the Nansen Initiative, which seeks to better protect the rights of those displaced across borders by disasters. Two months later at COP21, the Paris Agreement instituted a taskforce to address migration and displacements related to climate change.*

*Though significant breakthrough was made on the front of climate policy in 2015 with the Paris Agreement, it has not materialized into an actual, meaningful reduction of greenhouse gas emissions, and every month that goes by seems to break yet another heat record. Meanwhile, the humanitarian crisis at the borders of Europe seems to deepen every day, with no solution in sight*

*Thus the year 2016 represents a test of reality. In the last decade, progress has been made with regard to the understanding of the interactions between environmental changes and migration flows and the agenda setting of these issues. But knowledge gaps remain significant, with regard to the quantitative assessments of migration flows, the impacts on communities of origin and of destination, to the theoretical framing of the phenomenon, to name just a few of these gaps.*

*Despite scientific progress, actual policy results have been slow to deliver. We are now on the verge of the creation of new structures and institutions: a task force within the Loss & Damage Mechanism of UNFCCC, or the new Platform on Disaster Displacement. Held just before the opening of COP22 in Marrakech, the conference will seek to bring together the research and policy communities on both environmental changes and migration flows to assess progress and challenges ahead.*



## ***The Hugo Conference***

*The conference is named after the late Graeme Hugo (1946-2015), formidable scholar in migration studies and a pioneer in the examination of the linkages between environmental changes and migration. The event will also mark the launch of two initiatives to foster research on these subjects:*

- a) The creation of The Hugo Observatory at the University of Liège, the first research structure dedicated specifically to the study of environmental changes and migration.*
- b) The constitution of an international scholarly association for the study of environmental migration, which will seek to follow up on the COST Action IS1101 on Climate Change and Migration.*

*The conference is organised within the framework of the EDGE project, funded through the Horizon 2020 programme for Research and Innovation of the European Union. It seeks to bring together scholars and practitioners from social sciences and environmental sciences, as these two scholarly constituencies often remain too clustered from each other on these issues. It will also seek to move beyond debates on the environmental causality of migration to examine the multiple interactions between the environment, migration and politics.*

*This book includes abstracts that cover different aspects of these interactions, from theories and models of migration to policy processes, including empirical and critical studies from both natural and social sciences. They also include the social dimensions of vulnerability; immobility and trapped populations; land issues (land grabs, land holdings, lease, etc.); borders and security; disasters and evacuations; environmental and climate data for the study of migration; legal and policy perspectives.*

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## Organizing Committee



**François Gemenne** is a specialist of environmental geopolitics and migration dynamics, he is a FNRS senior research associate at the University of Liège. He also lectures on environmental and migration policies in various universities, including Sciences Po in Paris and the Free University of Brussels. His research deals mostly with environmental and migration governance. He has worked in particular with populations displaced by environmental changes, including natural disasters, and the policies of adaptation to climate change. He has conducted field studies in New Orleans after hurricane

Katrina, Tuvalu, China, Kyrgyzstan, the Maldives, Mauritius and Japan, after the Fukushima disaster.

He has been involved in a large number of international research projects on these issues, including EACH-FOR, HELIX and MECLEP, for which he is the global research coordinator. He also coordinated the DEVAST project, one of the first international projects to examine the social and political consequences of the Fukushima disaster. In 2015, he was recipient of a Fulbright scholarship to pursue research at Princeton University. In 2010, he was awarded the ISDT-Wernaers Prize for achievement in the communication of science to the general public, and he is also the director of the Sustainable Development series at Presses de Sciences Po, a leading French academic publisher.

He holds a joint doctorate in political science from Sciences Po Paris and the University of Liege. He also holds a Master in Development, Environment and Societies from the University of Louvain, as well as a Master of Research in Political Science from the London School of Economics. In 2008, he was awarded a post-doctoral scholarship from the AXA Research Fund. He has published in various journals, including *Science and Global Environmental Change*, and has authored six books, amongst which 'Géopolitique du Climat' (Armand Colin, 2009 & 2015) as well 'The Anthropocene and the Global Environmental Crisis' (edited with C. Hamilton and C. Bonneuil, Routledge 2015) and an Atlas of Environmental Migration with D. Ionesco et D. Mokhnacheva (Presses de Sciences Po 2016 and Routledge 2016).

François is the Director of The Hugo Observatory.



**Caroline Zickgraf** is FNRS Postdoctoral Research Fellow at the University of Liège. She holds a doctorate in political and social sciences from the University of Liège as well as degrees from Leiden University (MPhil) and Michigan State University (MA). Dr. Zickgraf has consulted for the World Bank, the Nansen Initiative, the International Center for Migration Policy Development (ICMPD) and the Food and Agriculture Organization of the United Nations (FAO) on the links between climate change and migration. In 2016, she began leading ULg in the Horizon 2020 project 'EDGE' (Environmental Diplomacy and Geopolitics), a partnership with University of Economics Bratislava and Sciences Po-Paris. She also lectures on environment, migration, and ecopolitics at Sciences Po-Paris, Paris 13, and IHECS.

Dr. Zickgraf's main areas of research are the migratory impacts of climate change on coastal populations, transnationalism and transnational families, and (im)mobility. Currently, with the generous support of the Fund for Scientific Research (FNRS), she is conducting the research project 'IMMOBILE' (Immobility and the Environment), which analyzes populations 'trapped' or who choose to stay in areas affected by environmental changes and their relationships with those who go. For this project, she is conducting case studies in Senegal (Université Gaston Berger), Vietnam (Can Tho University) and Japan.

Caroline is the Deputy Director of The Hugo Observatory.





**Pierre Ozer** has a PhD in geographical sciences (University of Liège, 2000). He has worked for various institutions such as the Università degli Studi di Genova (Genoa, Italy), the University of Luxembourg, the United Nations Food and Agriculture Organisation (FAO, Rome) and the Luxembourg University Foundation. Fascinated by the landscapes and by the people and their culture in all its richness and diversity, its many projects have introduced him to various parts of the world, from Latin America to Asia through Africa where he currently concentrates much of his research. In 2009 he was elected full

member of the Royal Academy for Overseas Sciences, Brussels. He led the Belgian scientific delegation to the United Nations international negotiations to combat desertification (UNCCD COP-9, Buenos Aires, Argentina, 2009).

Pierre Ozer's main research interests include desertification processes, natural risk and disaster management, the impacts of environmental changes on public health and adaptation strategies to climate change. Pierre Ozer teaches these subjects at the University of Liège, but also in the Università degli Studi di Genova (Italy), Università degli Studi di Sassari (Italy), the University of Angers (France), Universitatea din Bucuresti (Romania) also at the University of Parakou (Benin) and the University of Djibouti (Djibouti). In 2016, he launched the specialised Master degree in risk and disaster management at the University of Liège in collaboration with the Catholic University of Louvain. He is the author of five books and over 300 scientific and 'public' publications in those fields.

Pierre is the scientific coordinator of The Hugo Observatory.



**Dalila Gharbaoui** is Research Fellow and PHD Candidate in Political and Social Sciences, jointly at the Hugo Observatory on Environmental Migration, University of Liege (Belgium) and at the Macmillan Brown Center for Pacific Studies, University of Canterbury (New-Zealand). Her thesis examines climate-induced relocation and land governance in the Pacific region including field study in Fiji, New Caledonia and Solomon Islands. In 2015, Dalila has also been appointed researcher as expert on environmental migration and land security for the STRAFPACC project aiming at redefining French security strategies in the South Pacific region in the context of climate change. Formerly working on Comparative Regional Integration Studies at the United Nations University- Institute on Comparative Regional Integration Studies (UNU-CRIS) in Bruges in 2013-

2014, her work involved research on changing global and multi-level governance dynamics, regional integration and inter-regionalism. Dalila's cross-cutting interest for Regionalism, Climate Change, Migration and Human Security led her to work in 2011-2012 as Junior Researcher for the African, Caribbean, and Pacific (ACP) Observatory on Migration at the International Organization on Migration (IOM) in Brussels and, in 2010, at the United Nations High Commissioner for Refugees (UNHCR) Regional Office in Canberra where she realized a research project on "Sustainable relocation as an adaptive response to climate change in the Pacific region."

Dalila Gharbaoui is undergraduated in Political Sciences and holds, since 2010, a Master's degree in Human Rights from the University of Sydney in Australia. Dalila also holds a Certificate in Human Rights Law from the University of Geneva in Switzerland and a Certificate in "Field research methods (qualitative and quantitative) in environmentally-induced migration" from the United Nations University-Institute for Environment and Human Security Studies (UNU-EHS) in Bonn, Germany.





**Reiko Hasegawa** is a PhD candidate in Political and Social Sciences at University of Liege since 2015. She is also Research Fellow for Politics of the Earth programme at Médialab, Sciences Po Paris (France). Her research is focused on the displacement of populations from natural and human-made disasters. For her thesis, she explores the notion of nuclear disaster displacement, taking an example of the 2011's Fukushima nuclear accident, from the perspectives of international normative frameworks for IDPs and environmental migration. This doctoral project led to expand her research interest into the field of Science and Technology Studies (STS), notably on the notion of expertise and policymaking under scientific controversies.

She holds a Master's degree (M.A.) in International Affairs from Norman Paterson School of International Affairs, Carleton University (Canada), and worked with various aid agencies such the United Nations High Commissioner for Refugees (UNHCR), Japan International Cooperation Agency (JICA), and a humanitarian NGO in Iraq, UNSC resolution 1244-administered Kosovo, Sierra Leone, Slovenia, Indonesia and Japan. During these missions, she has managed numerous aid programmes for refugees and internally displaced persons (IDPs) following civil wars and natural disasters such as the Indian Ocean earthquake and tsunami in 2004.



**Sara Vigil** is an FNRS Research Fellow and a PhD candidate at the Hugo Observatory of the University of Liège and at the Political Economy of Resources, Environment and Population (PER) research group at the International Institute of Social Studies of Erasmus University Rotterdam (ISS). After studying Political Sciences and International Relations in Madrid (UNED), she pursued a Masters degree in Sociology at the University Paris V-Sorbonne. Her on-going doctoral research analyses the interconnections between climate change, land acquisitions, and migration and she conducts fieldwork in Senegal and Cambodia. During her field missions she is an affiliated researcher of the University Gaston Berger of Saint-Louis (GERM) in Senegal and of the Research Program on Climate Change, Food Security, and Agriculture (CCAFS) in Cambodia.

Sara is a research partner of the 'Migration, Environment, and Climate Change: Evidence for Policy' project (MECLEP) led by the International Organisation for Migration, a management committee member of the 'Environmental Diplomacy and Geopolitics' (EDGE) EU H2020 project, and collaborates on the 'High-End cLimate Impacts and eXtremes' (HELIX) EU project. Sara has consulted on environmental migration issues for the World Bank, the Nansen Initiative, and the Food and Agriculture Organisation of the United Nations, and follows closely the UNFCCC climate negotiations as an active member of the Advisory Group on Climate Change and Human Mobility. Sara lectures on international cooperation and migration governance at Sciences Po Paris and Paris 13 University and is an associated team member at the Centre of Philosophy, Politics and Epistemology (PHILÉPOL) of the University Paris V-Sorbonne where she previously worked for the ANR-DEMOENV project.





**Nakia Pearson** is a graduate of Sciences Po's Paris School of International Affairs in 2013, where she received an M.S. in International Development. Nakia Pearson is a joint PhD Candidate at the Hugo Observatory, and the Institut interdisciplinaire d'anthropologie du contemporain (IIAC) at the Ecole des Hautes Etudes de Sciences Sociales (EHESS), Paris. Focusing mainly on the appropriation of borders in the context of environmental migration in West Africa and South Asia, Nakia's research analyses themes on land and identity, land degradation, and tenure issues. As a visiting scholar at the Permanent Interstates Committee for Drought Control in the Sahel (CILSS), Nakia conducted research on agricultural adaptation and social cohesion in the destination areas for migrants driven by drought and desertification in Northern Burkina Faso.

A research associate for the European FP7 consortium High-End cLimate Impacts and eXtremes (HELIX), Nakia is currently conducting research on social tipping points and the human impacts of extreme climate events in Bangladesh. She is now working on several collaborative texts related to the project. She has authored several papers and presented internationally on drought, tenure issues, and migration linked to land degradation. Prior to pursuing her Masters studies, Nakia rode her bicycle from Beijing to Paris on a yearlong bike trip to promote deliberate, simple, low-impact lifestyles and travel, and to experience a big cross section of the world by traveling through rural agricultural areas of Asia wherein resides most of the world's population ([www.fueledbyrice.org](http://www.fueledbyrice.org)).



**Luka De Bruyckere** holds a MA degree in Moral Sciences from the Ghent University. She graduated cum laude with a MA thesis on Ethics and Climate Change. An analysis of three approaches in ethical theory concerning the allocation of emission rights. She also completed a joint MA programme in Global Studies at the Leipzig University and the University of Vienna with a MA thesis on Climate Migration as Political Ammunition: The Political Use of the Academic Climate Migration Debate by the Greens/European Free Alliance in the European Parliament.

She completed a Blue Book Traineeship at the European Commission's Directorate General for Climate Action (DG CLIMA), as part of the policy team responsible for the revision of the Emissions Trading System (EU ETS) Directive. She continued to work in the same field as Policy Assistant at Environmental NGO Transport & Environment (T&E), where she coordinated and co-authored Gaining Altitude – An analysis of the aviation

EU ETS 2013-2015. Currently she is related to the Hugo Observatory on Environmental Migration (University of Liège) as Research Assistant. In this capacity she supports the activities of the Horizon 2020 Environmental Diplomacy and Geopolitics (EDGE) project, a partnership with the University of Economics Bratislava and Sciences Po Paris. Whenever possible she travels over land instead of by air.



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# Conflict and Security



## Climate induced migration and conflicts - the risk of a self-fulfilling prophecy

Lennart Olsson, David O'Byrne, Anne Jerneck

In 1948 Robert Merton defined the concept of self-fulfilling prophecy as 'a false definition of the situation evoking a new behaviour which makes the originally false conception come true'. Since climate change projections predict increasing extreme weather events, such as droughts, floods and heatwaves, understanding links between environmental hardship and social responses are important for avoiding the risk of a self-fulfilling prophecy. Research on climate change and its impacts on society and nature provide dire projections already for the near and mid-term future. Making projections about future impacts on natural systems is easier than predicting the social repercussions and responses to such impacts. In contrast to predictions of responses in natural systems, there is a risk that the way in which we discuss social responses to climate change may lead to self-fulfilling prophecies. In the public debate we often hear about strong links between climate change impacts and mass migration and/or armed conflicts. In contrast, the scientific debate is much less certain about the links between climate impacts and migration and conflicts. In this paper we discuss if environmental hardship more often leads to conflict or collaboration. We draw on a literature review and a number of empirical cases. We also present a preliminary theoretical framework for understanding conditions leading to conflict and collaboration. Finally we discuss how such theoretical understanding may help forestall a self-fulfilling prophecy of climate change leading to mass migration and armed conflicts.

**Lennart Olsson** (lennart.olsson@lucsus.lu.se), formerly the founding Director of LUCSUS (Lund University Centre for Sustainability Studies) 2000-2016, is professor of geography at Lund University. His research fields include human-nature interactions in the context of land degradation, climate change and food security/sovereignty. His current research focuses on the politics of climate change in the context of poverty, food insecurity and ill-health in sub-Saharan Africa and beyond.

**David O'Byrne** is a PhD candidate in sustainability science at the interdisciplinary research school for the Integration of Social and Natural Dimensions of Sustainability at Lund University.

**Anne Jerneck** is professor of sustainability science at LUCSUS. Her research concerns processes of social, structural, and institutional change in relation to poverty, gender inequality, climate change and the politics of sustainability.



## Exploring the aftermaths of ecological degradation and conflicts on migration: Case study of Uganda

Ddungu Rogermaxi, Sandrah Namugumya, Tonny Mbabali

There is an imperative call to re-examine the efficient association between globalization, unemployment, income inequality and poverty in Uganda. Unemployment hastens the level of income inequality and poverty within a given society. The existing globalization seems to have aggravated the crisis of unemployment, consequent widespread income inequality and mass poverty in Uganda. In fact, the trickle down economy pattern has consistently failed Uganda. What is good for Wall Street may not necessarily be good for Uganda and Africa. Viewed from any angle, Uganda seems to have been marginalized and left behind by globalization. Capitalist globalization undeniably, created wealth but also intensified inequality and poverty, particularly in Africa. High growth rate of Gross domestic product (GDP) may be a good statistics to parade at international conferences and seminars. However, for the hungry jobless youths in the streets, these are meaningless numbers since they do not translate into job creation or cure their hunger. Therefore, it is high time that Uganda look beyond the official statistics of the so called high GDP growth rate and get down to the hard business of creating real jobs that take out the hungry, angry and jobless youths from the streets into workplaces. Uganda needs to develop comprehensive strategies to create jobs locally. In this research, asserts that there is a strong linkage between globalization, unemployment, income inequality and poverty in Uganda. Some mechanisms were proffered to overcome these bottlenecks.

**Ddungu Rogermaxi** (d\_rogermaxi@hotmail.com) studied at Makerere University faculty of social sciences and holds a masters degree in social sector planning. Rogers has been involved in many studies on climate change and other social sciences and actuarial sciences. Rogers is currently working at the Rural Environmental Promotion and Poverty Alleviation Initiative (RUEAPAI) in Masaka, Uganda as a research coordinator and knowledge advisor.



## Migration and social stress in the face of climate risk

Elisabeth Gilmore

The impact of climate change on social unrest and violence is complex as the pathways are likely indirect and, the effects will vary because the immediate and long-term impacts of climatic shocks depend on the affected societies' resilience and adaptive capacity. Migration and human displacement has been presented as a pathway from climatic shifts to unrest in both the originating and destination communities, although systematic research to support these claims is largely lacking. We will present our initial efforts to trace this pathway by conducting comparative case studies of rural/urban migration in Western India and Ethiopia and upstream/downstream migration in Nepal and Latin America. First, we investigate whether changes in characteristics of migration and human displacement can be an indicator of social stress due to either prolonged climatic shifts such as drought or abrupt disasters. Second, we evaluate whether these changes in flows are associated with conditions of social unrest and violence. Our case studies highlight the links between the biophysical changes that accompany climate change and the movement of people. Further, we find that the propensity for conflict is highly conditional, suggesting numerous opportunities for planned efforts to moderate these risks. We will conclude with recommendations for the collection of data for future empirical analyses.

**Dr. Elisabeth Gilmore** ([gilmore@umd.edu](mailto:gilmore@umd.edu)) is an assistant professor in the School of Public Policy at the University of Maryland. She is an interdisciplinary researcher who works on issues related to environment, energy and security. Her most recent efforts have focused on forecasting the long-term effects of socioeconomic development and climate change on armed conflict and political violence.



## An exploration of American geopolitical identities in climate security discourses

Andrew Telford

This paper outlines findings from PhD research that examines representations of American geopolitical identity in US security discourses. Based on a critical discourse analysis and semi-structured interviews with climate security professionals in the US and EU, the paper argues that 'American-ness' is configured in three distinct ways. The first is a vision of American exceptionalism in which a fortified, isolationist United States closes its boundaries to climate-induced migrants in conditions of resource scarcity. Second is a vision of American leadership that seeks to manage population movements with humanitarian intervention. Finally is a concept of anti-Americanism related to discussions of terrorism in climate security. Here, the possibility for radicalized violence is associated with particular populations – African and Muslim migrants – and I argue that this draws upon racialized understandings of identity in climate-insecure futures. As such, the paper contends that American geopolitical identities – how 'America' is conceptualized in a world of climate insecurities – are connected to context-specific articulations of national and racial identity. Given the potentially unequal and exclusionary political outcomes this could produce, I conclude by proposing that an environmental justice perspective, one steeped in the multi-scalar, unjust dimensions of environmental change, is a useful tool for examining climate-induced migration in US climate security discourse..

**Andrew Telford** (a.j.telford@durham.ac.uk) is a final year PhD student (ESRC-funded) in human geography at Durham University in the UK. The project explores the intersections of national and racial identities in US climate security discourses. It focuses on three themes - climate-induced migration, terrorism/radicalisation, and American nationhood - and discusses how American geopolitical identity is represented in climate security debates. Previously, he completed a BA (Geography) and MA (in Research Methods) at Durham.



## Climate change narratives, overlapping land conflicts, and migration dynamics. Insights from Senegal and Cambodia

Sara Vigil

Developing countries have been a major target in the recent rush to acquire land in which narratives of 'sustainable development', 'poverty reduction' and, more recently, 'climate change mitigation and adaptation' have often been utilised as justifications. Whilst the human rights consequences of land grabbing have been well documented, and the study of the connections between climate change and migration have made substantial progress, very little attention has been given to how climate change narratives, land grabs, and human mobility shape each other and on how their combined effects will impact peace and stability. From a political economy perspective and drawing upon three case studies conducted in Senegal and Cambodia, involving more than 200 participants in semi-structured interviews and focus groups, the paper will show the multiple and overlapping interactions between climate change narratives, land conflicts, and human mobility whilst underlining their risks in terms of distress migration and intrastate conflict. At a policy level, the paper will provide recommendations on how to address these three major issues concomitantly in order to avoid the manipulation of 'green', adaptation, and development agendas that can paradoxically result in the decreased resilience of the most socio-environmentally vulnerable populations.

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# Climate Adaptation Strategies



## Examination of Farmers' perception and attitude to climate change adaptation techniques: A case study from S/W Nigeria

Ayansina Ayanlade, Maren Radeny

This study examines the rural farmers' attitude to climate change, preference and willingness-to-pay for climate change adaptation techniques in the Southwestern Nigeria. A mixed methods approach was used. The study used both quantitative, from climatic records and social dataset, from questionnaires survey and Focus group discussion. The results show a relatively uniform temperatures and small seasonal variations in recent years (diurnal range of temperature is about 10°C) but the rainfall show much more seasonal variations. The rainfall has relatively undeviating trend from 1981-1996 but the trend appears to be upwards from year 1997 to 2010. About 723% participants responded in the affirmative that climate is changing but there appear to be a significant relationship between the length of farming experiences and farmers' perceptions of climate change adaptation techniques. The major driver that determines farmers' preference and willingness-to-pay for climate change adaptation techniques is their incomes and experiences. Water related (about 53%) and nutrient related (about 52%) technologies appear to have a high preference among the farmers. The study concludes that there appears a strong relationship between farmers' income, farming experiences, adaptation strategies employ, their interest in other adaptation strategies, and the willingness of farmers to pay for access to the adaptation strategies.

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## Adapting to rapid environmental change – examples from coastal regions in Ghana and Indonesia

Johannes Herbeck, Michael Flitner

Rather than being a one-time reaction to a single event, adaptation to environmental change often takes the form of a multitude of political struggles in different fora and around different projects over a long period of time. Thereby, environmental change can be the catalyst of changing, reinforcing or maintaining existing political structures and power relations, and can contribute to new forms of participation, but also exclusion of certain actors. With an associated change of a shared sense of belonging in affected areas, adaptation can also influence the emergence of what we call regional formations. Those are both influenced by existing migration routines, and potentially reverberate on the question what role migration plays in the adaptation process.

Giving insights into two cases in Ghana and Indonesia, this contribution reconstructs the various forms of adaptation to rapid coastal change the cities of Keta, Ghana, and Semarang, Indonesia have been experiencing in the past decades. This contains changing patterns of migration, but also includes "hard" engineering solutions taken in both areas. The presented findings are the result of qualitative interviews led with stakeholders within and beyond local and national political institutions. The paper thereby describes the processes that have led to the emergence of certain forms of (structural adaptation and have contributed to the actual design and implementation of selected adaptation projects. The actor networks negotiating such measures will be described.

We conclude that during certain periods, environmental change can be a strong element in the development of a regional political consciousness, also and especially in the long processes of negotiations of adaptation measures with superordinate governmental structures.

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## Climate and migration in the SDGs and adaptation agendas

Emily Wilkinson, Virginie Le Masson

Extremes in climate and weather have a disproportionate impact on the poor and threaten efforts to eliminate extreme poverty by 2030. They also affect human mobility through interaction with other drivers of migration, and this will intensify with climate change. Apart from border regions and small states, most migration is internal despite alarmist claims that climate change will lead to mass migration to developed countries. Future flows are likely to follow existing routes, although the pressures of slow-onset events on rural and urban livelihoods may intensify and trigger new patterns of migration. The 2030 Agenda for Sustainable Development recognises the positive contribution of migrants to inclusive growth and sustainable development but also highlights displacement and migration as adverse consequences of increasing global threats, yet migration is not mentioned in SDG13 on combating the impacts of climate change. These conflicting views are also reflected in climate policy - from the Paris Agreement to INDCs and NAPs - where migration decisions are considered both as negative consequences of climate change and also adaptation strategies.

This paper assesses the contribution that migration makes to achieving SDG13 by examining migration decisions in climate vulnerable places. The development impacts of climate change, and in particular people's ability to adapt and prosper through migration, will depend on these decisions, how they are taken and by whom. The authors will present a set of recommendations for national, regional and international adaptation policies to support migration and escapes from poverty in climate-vulnerable places.

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## Adapting to Climate Change: Water Security, Informality, and Indigenous Urbanization

Tracey Chaplin

New manifestations of urbanization are shaping the social distribution of risk and resources associated with climate change. Water security will be particularly impacted by evolving forms of urbanization. Now is the time to consider the impact of climate change on water security for urbanizing indigenous settlements. Increasingly, water is experienced in extremes: scarcity and unmanageable abundance. Simultaneously, urbanization and forced migration are expanding populations in coastal cities beyond available housing. This housing shortage, accelerated by sea level rise, leads many urbanizing indigenous people to build informal settlements in the only space remaining: the water. This research explores water security in informal Indigenous settlements adapting to climate change. In particular, settlements built on water in geographically hazardous coastal regions experiencing rapid urbanization.

How can water-based indigenous urban settlements access potable water? This adaptive capacity will be largely shaped by the social infrastructure of the settlements- power hierarchies, informal economies, and social connectivity - and how the social infrastructure interacts with the formal policy environment. Yet, generalizable frameworks for understanding the social infrastructure of floating informal settlements are unknown. Without this understanding, it is difficult to design responsive policy or predict the most effective strategy for policy implementation.

In Iquitos, Peru, the social infrastructure of a floating informal settlement will be analyzed utilizing urban ethnography and ecological systems modeling. Results will be compared with prevailing urbanization models, aligning with existing frameworks or forging new ones.

I hypothesize that informality and an indigenous manifestation of urbanization in water - based settlements will engender unique variations of social infrastructure, and that some variations will be more closely associated with higher water security than others.

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## Youth on the move - Young initiatives and adaptation to climate migrations

Marine Denis, Charlotte Blondel, Lisa Murken

The CliMate migrants working group is focusing on the question of climate migration and youth, with the aim of producing a documentary and a research paper on the topic. This documentary will give youth from around the world the opportunity to speak up, whether they are directly affected by climate change and forced to migrate or have visionary ideas to improve the circumstances of those migrating. By meeting these young people with different horizons that have endured environmental disasters, that have seen their living conditions transformed by the effects of climate change, who know that the place where they live might disappear in the next few years, or even who know that they will have to welcome displaced people because of these phenomena, we want to propose both a global view of migrations linked to climate change as well as a burst of hope through solutions that exist.

Climate migration is a global problem that will affect all of us, on all continents, in a direct or indirect way. Our goal is therefore to depict these diverse experiences, by exchanging with people from different countries and different cultures, affected by unique climate phenomena such as rising sea levels, desertification, or natural disasters like storms or heat waves.

Youths, due to the specificities of their position within their communities, are the first concerned by climate migration. They are therefore legitimate to have a strong opinion on the topic of not only climate migration but also climate change; and voice this opinion through actions of different nature. The goal of this paper is to present the reasons and ways youths migrate and encourage young people all over the world to act on these two topics. By conducting field research and interviews in Bangladesh, Vietnam, Mongolia and beyond we want to show how youth is acting on international and regional levels.

**Marine Denis** ([marine.denis@sciencespo.fr](mailto:marine.denis@sciencespo.fr)) is from SciencesPo Law School. **CliMates** is an international youth think-and-do tank searching for innovative solutions to climate change. By conducting simulations of international negotiations, multiple research and local action projects, we strive to inform and empower youth with regard to climate change and develop new solutions :<http://www.studentclimates.org/>



## Exploring climate migration - mitigation/adaptation feedbacks with an interactive model

Ben Matthews

Considering migration as adaptation to climate change, most research focused on identifying source regions and people most vulnerable to climate impacts. We should also study the implications, for both adaptation and mitigation, of where migrants choose to settle. These are more obvious for adaptation. For example, many rural to urban migrants settle in megacities in warm river deltas, vulnerable to sea-level rise and heatwaves. It may be wiser to encourage people to resettle at higher altitudes or latitudes. Regarding mitigation, careful choice of resettlement locations presents opportunities to influence fossil energy demand. Relevant factors include:

- \* housing supply vs demand, as construction requires energy
- \* heating/cooling need
- \* local transport services
- \* regional supply of food, water, renewable energy
- \* potential air-travel to former communities
- \* local lifestyle (modest/luxury consumption)
- \* factors influencing future demographics (fertility)

Moving people into wealthier countries in higher latitudes may increase energy demand temporarily, but later reduce global population, as well as adaptation stress. However, few climate mitigation scenarios consider climate-induced migration. Some assume, for simplicity, that migration reduces towards zero. As different models analyse mitigation and adaptation, feedbacks from climate impacts influencing emission drivers are lacking. The interactive integrated assessment model JCM, including modules from socioeconomic drivers to climate response, may be extended to investigate such feedbacks. Migration poses challenges both for people who relocate, and host communities. Arguably, climate adaptation costs should be shared considering relative contributions to greenhouse gas emissions. As colder countries typically emitted more, but suffer less impacts, welcoming more migrants could help offset this imbalance. JCM may investigate this, adapting modules calculating historical responsibility and equitable sharing scenarios. In general JCM may help stakeholders explore the relative sensitivity of climate scenarios to diverse options and uncertainties, and thereby consider how we all, including potential migrants, together choose our future climate.

**Dr Ben Matthews** (ben@benmatthews.eu) is now an independent climate scientist. He develops an interactive climate scenario model, JCM (since 2000). Its earlier research concerned atmosphere-ocean CO<sub>2</sub> fluxes, influenced by phytoplankton. He contributed to many meetings/workshops of IPCC and UNFCCC (since COP2), initially with NGOs, later with Belgian / European governmental experts. Trying to apply its calculations regarding equitable low-emission scenarios, he minimized its travel by air, which impacted his academic career. He has experience as a migrant, having lived/worked in Scotland, England, China, Denmark, Norway, Switzerland, Belgium and Brazil.



## Social Capital, Climate Impact and Adaptation: Evidence from Rural Households of the Mountainous Region of Southern Ningxia, West China

Yan Tan, Xuchun Liu

Social capital (SC) is multi-faceted and significantly shapes adaptation to climate change. Yet we still lack adequate empirical evidence about its complex influence on adaptation to inform cultural and place specific adaptation policies. This study contributes to the literature by providing a nuanced understanding of how three dimensions of SC (bonding, bridging and linking ties) and different degrees of trust in social ties influence rural households' responses to climate impacts: choosing incremental adaptation, migration or non-adaptation. The study undertakes a thorough literature review of SC and adaptation, based on which an adaptation framework with a two-stage decision-making process is conceptualized. Accordingly, a two-stage econometric regression approach is employed to analyze how multi-dimensional aspects of SC: (1) shape households' experience of climate impact on their livelihoods; and (2) interact with climate impacts to influence households' adaptation strategy. The analysis is based on primary data collected from a mountainous region of western China, in 2012. The results show that the three dimensions of social network and trust in social ties have significant, but mixed, effects on households' experience of adverse climate impacts and their subsequent responses. The two-stage conceptual framework and a two-stage analysis approach tested in this paper contribute to the research methodologies for unraveling the nexus between social capital, climate variability, and adaptation and migration in rural settings. The study demonstrates that the study of social capital should go beyond a single measure and integrate the full breadth of social capital into adaptation research.

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## Migration as part of adaptation strategies to environmental limitations—case study of Ait Youl and Mhamid oases (Southern Morocco)

Karolina Sobczak-Szelc, Maciej Dłużewski

The Dades-Draa valley used to be an area where agriculture was main source of income. Since the second part of 20th century it has changed into one of main emigration areas in Morocco as a consequence of population growth, limitations in agriculture development and other socio-economic pull factors.

This paper on case study of two oases: Ait Youl and Mhamid in the Dades-Draa Valley, explores how the environment determines migration from rural areas of Southern Morocco. The results are based on micro census, detailed semi structured questionnaires and in depth interviews made with household heads in both oasis.

Results show that the destruction of crops in the last 10 years in semi arid high mountain valley were due to: i) floods, ii) stones accumulation on farmlands, and iii) plant disease. In the desert arid area the destruction of crops was caused by: i) insufficient amount of water for irrigation, ii) aeolian sand accumulation on farmlands, iii) plant disease and iv) hot wind. As the households' income from agriculture is strictly related to environmental barriers or environmental changes, household members are pushed to income diversification. Results show that the agriculture is no more main source of income for rural households. In majority of households, in both regions, at least one person migrated internally because of economic reasons.

Furthermore, the results suggest that actions aiming at minimising degradation of the natural environment would not result in significant decrease of the migration rate. This is because once the migration process commences, it is self-perpetuating due to numerous socio-economic factors (complementary to limitations of natural environment), and very difficult to hold back.

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**Maciej Dłużewski** is an Associate Professor at the Faculty of Geography and Regional Studies, Warsaw University. His research experience, focuses mainly on deserts and desertification. Now he is focused on the role of the natural environment on sustainable development of desert areas in developing countries and its consequences in human migrations.



## Migration as an Adaptation Strategy to Climate Change / Variability in the Legon-Chari Plains and its Environs in the Sahel Region of Far North Cameroon

Teke Johnson Takwa

This study seeks to investigate in detail the local population's perception of environmental changes as well as their motives for migration. The methods used include interviews of some household heads, participant observation, study of satellite images of the area and meteorological data on rainfall and temperature. The study reveals that the population is highly dependent on rain-fed agriculture and is particularly vulnerable to rainfall variability and ecosystem degradation because they have negative effects on crops yields and animal production. Asked why they migrate, 25% of the respondents mentioned shifting rainfall patterns and insufficient yields, reducing pasture for animals as the main reasons for departure. 20% of them mentioned food insecurity as the main cause of their migration. This motive is in close relation to environmental, but also economic factors. Even though climate change related motives were cited among the motives for migration within and out of this zone, a majority of the people cited economic motives with seeking for money and jobs being the most important. This motive usually overlaps with other motives including environmental motives. In the Logone-Waza Plains, increasing dry conditions and erratic rainfall patterns have caused people to move from neighbouring areas to converge in the Logone-Waza in order to use the available water resources of the lone river in the area for irrigation and fishing while many moving to the more humid equatorial south. Some people have moved from the drier mountainous parts of the area to create new settlements at the margins of the flood plains while others migrate into the plain after flood retreat (dry season) to work as farm labourers or labours in digging canals. This plain is increasingly becoming a converging point for both animal rearers some coming from as far as Nigeria and farmers resulting to competition and conflict over the scarce water and vegetative resources. This study ends with the recommendation that climate change information and advocacy on how to reduce its undesirable effects in this area and the whole of the Sahel has become inevitable.

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## Evidence for policy: Human mobility as adaptation?

Susanne Melde

Since 2010, human mobility made its way into the global climate change negotiations. In 2015, the Protection Agenda of the Nansen Initiative on cross-border displacement as well as the Sendai Framework on Disaster Risk Reduction recognized displacement and planned relocation as key issues at the policy level. Many countries already aim to address displacement risks and consequences in their policies and programmes. Yet few consider “beneficial opportunities” of mobility for adapting to environmental and climate change. Disaster-induced displacement affects all countries regardless of income level, development status or geographical location. Yet the implications for adaptation to environmental change and disasters are less explored, in part due to the many challenges displacement poses for entailing any “beneficial opportunities” and not just reducing harm to life. This paper is based on cutting-edge primary research in 6 countries (Dominican Republic, Haiti, Kenya, Mauritius, Papua New Guinea and Viet Nam). This first ever comparative approach allows to draw out how different forms of human mobility can support or undermine adaptation efforts to hazards. The paper will discuss different policy options based on the data from the 6 countries and a review of the existing policy frameworks. In contrast to migration and partly planned relocation, displacement may entail the least beneficial adaptation outcomes. Early planning, preparedness and increasing resilience, including by using indigenous and migrants’ knowledge, are found to be decisive for increasing adaptive capacities of populations affected by disasters and environmental change. Migration more generally can decrease vulnerability of populations affected by environmental change, but continuous to be not considered at all or as a failure in national climate change adaptation plans. Planning relocation could be better informed by the existing evidence base to avoid creating new risks and vulnerabilities.

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## How can migration support adaptation? Different options to test the migration-adaptation nexus

François Gemenne, Julia Blocher

Migration studies have long considered migration as a positive process aimed at adjusting to changes. One of the founders of migration studies, Ravenstein (1889), described migration as 'life and progress', whereas a sedentary population meant 'stagnation'. Drawing on the *New Economics of Migration*, there is much empirical evidence to show that migration is an adaptation strategy which households use to diversify and support their livelihood strategies (Castles and Miller 2003; Massey et al. 1998). However, the application of the adaptation-migration nexus to the field of environmental and climate change, although often mooted, has not been empirically tested, nor has the policy apparatus needed to deliver this potential been developed and assessed (Adger 1999; Barnett and Webber 2010; McLeman and Smit 2006).

For the public and to decision makers, migration is still commonly perceived as a failure to adapt. Lack of consensus on definitions, terms, and confusion over the basic concepts in discussions of migration as it pertains to adaptation makes it impossible to promote the issue in the development and implementation of adaptation measures. A key challenge facing scholars today is to flesh out the relationship between migration and adaptation, beyond the common wishful thinking of migration as a new adaptation strategy, a positive and somewhat performative vision of mobility.

An additional important question arises surrounding the extent to which the literature conflates migration and adaptation. Considering migration as adaptation solely in regards to environmental changes may imply these movements exist outside the "normal" adaptation strategies, creating a prescriptive view of migration that belies a sedentarist perspective and neglecting the utility of non-environmental migration as an adaptive measure. This view thus leaves it to the outside observer to determine when and how is "successful" or "maladaptive." Less work has been produced exploring migration as adaptation to non-environmental factors. Because it is difficult to determine who the "environmental" migrants are, there are methodological challenges to accurately judge how migration contributes to adaptation of affected communities.

In order to attain greater clarity, more empirical evidence is required to clarify the processes underlying the migration-adaptation nexus. The objective of this conceptual and methodological paper is therefore to flag different possible choices that can be made to study the relationship between migration and adaptation. Several choices methodological choices arise: Should one should study the effects of *migration* in the broad sense or specifically the effects of *migration related to environmental changes*? Following this, should scholars investigate these effects on the migrant, the community of origin, the community of destination, or all of the above? In the interest of answering these questions, this paper emphasizes the *impacts* of migration rather than its *causes*.



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# Disasters



## The Pursuit of 'Durable Solutions' in Internal Disaster Displacement Situations: Re-thinking the Assumptions of an Inherited Paradigm

Erica Bower

Displacement is conventionally resolved through the pursuit of one of three settlement options – return to place of origin, local integration in place of temporary stay, or relocation to a third place – which together comprise the 'durable solutions' conceptual paradigm. While many scholars have sought to re-think this paradigm in the refugee context, few research efforts have critically questioned the assumptions that underpin this paradigm for a population of concern that lies on the margins of the forced migration discourse – people displaced internally (IDPs) by disasters, such as after the April and May 2015 Nepali Earthquakes. Through triangulation between key informant interviews, policy texts, and theoretical literature, I argue that the 'durable solutions' paradigm is underpinned by three key assumptions inherited from the refugee context: 1) solutions require a displaced person to be sedentary over time and space, 2) return is the ideal solution, and 3) solutions are necessarily dependent on the state as guarantor of rights. Analysis of the Nepali Earthquake case study demonstrates that the viability of these inherited assumptions is challenged when applied to certain situations of internal displacement following disasters: onward mobility is a dominant feature of Nepalese coping strategies both before and after the quakes, return is not always feasible or desirable, and governance capacity is limited by political instability. The disconnect between the assumptions that underpin the 'durable solutions' paradigm and the evidence presented in this case study and key informant interviews underscores the need for new ideas to re-frame the 'durable solutions' paradigm in an era of increased risk of disaster displacement.

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## America's Eroding Edges: Policy Perspectives on American Climate Relocation

Victoria Herrmann

In 2013, the Guardian discovered America's first climate refugees in Newtok, a riverside village off the Bearing Sea in Alaska. In December of last year, Scientific American identified America's first climate change refugees off the coast of Virginia on a small Chesapeake island called Tangier. Just three months ago, the New York Times published a front page article featuring America's first climate refugees on the Ile de Jean Charles in Louisiana, where a community had made the impossible decision to leave their lives, livelihoods, and history behind in search of higher land.

Finding the front lines of climate change in America isn't difficult. And yet, while accounts of climate relocation in the US are written and printed recurrently, most policymakers will never physically visit America's eroding edges. Rather, they come to know the story of relocation through visual narratives.

The paper will delve deeper into the underexplored but critical role visual representations play in constructing a public narrative of climate change relocation in the US. Through a visual discourse analysis of American news sources that portray 'America's first climate change refugees,' it will explore how media is using images to construct perceptions of meaning, purpose, and power in stories of climate relocation. I will argue that journalistic storytelling of sea level rise and relocation has employed a formula of crisis, 'othering,' and victimization in communities across the US that has resulted in a reduced policy response. Overall, the paper will show that images have constructed and conditioned perceptions of agency in America's climate migration discourse that distance and disempower at-risk communities, which in turn leads to less engagement in policy processes.

**Victoria Herrmann** (vsh212@gmail.com) is a current Gates Scholar and PhD student of Polar Studies at the Scott Polar Research Institute at the University of Cambridge. She is also the Managing Director of the volunteer-based think tank The Arctic Institute, where her research focuses on climate change adaptation, energy systems, and human development. Throughout 2016 and 2017, she is traveling across the United States and its territories to document and study shoreline erosion, climate change narratives, and mobility as a National Geographic grantee.



## Weather-related hazards and population change: A study of hurricanes and tropical storms in the U.S., 1980-2012

Elizabeth Fussell, Sara Curran, Matthew Dunbar, Michael Babb, Luanne Thompson, Jacqueline Meijer-Irons

Environmental determinists predict that people move away from places experiencing frequent weather hazards, yet many of these areas are growing rapidly. The current analysis examines the relationship between hurricanes and tropical storms and population change using a database of county-years from 1980 to 2012 for all U.S. counties experiencing these events. The database allows for generalizable conclusions by accounting for heterogeneity in current and past hurricane events and losses and past population trends. Our analysis shows that only in the two percent of counties with growing, high density populations are hurricanes and tropical storms found to affect future population growth. In these counties, current year hurricane events and related losses suppress future population growth, although counties with greater cumulative hurricane-related losses actually experience elevated growth rates. In contrast, counties with stable or declining populations, whether they are high or low density, experience no effects of current year or past hurricane events and losses. In these types of counties past population trends are more strongly related to future growth, or lack thereof. Our analysis provides a methodologically informed explanation for contradictory findings in prior studies, some of which indicate that hurricane events and losses are positively associated with population growth, and others find the opposite effect. Our policy relevant findings indicate that the impact of hurricanes and tropical storms, which are likely to increase in intensity and strength under conditions of climate change, depends upon past population trends, population density, and the cumulative number of events and related losses.

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## Healing the Trauma of Displacement: The role of ontological security and sense of place

Elizabeth Brabec, Sean O'Donnell

For the 65.4 million forcibly displaced people in the world – up from 19.4 million in 2005 – the loss of place, and a physical connection to a landscape of home is often a significant source of trauma and hardship (UNHCR 2014). Whether war or natural disaster, the “trauma of exile” (Said 2000) refers to the “unhealable rift forced between a human being and a native place, between the self and its true home.”

The trauma of dislocation is compounded and deeply connected with the inevitable struggle of creating ties to a new place in an alien environment (Turton 2005). However, the literature is lacking when it comes to understanding these processes. Adjusting to new social environments, social constructs, as well as unfamiliar ecosystems and landscapes are challenges facing refugees as they pass into temporary camps and later again as they reach a resettlement location. While we understand the psychological and health effects of the trauma and loss, we do not yet understand the mechanisms that people use to adapt to new environments.

There are several processes through which people relate to a new environment, and transform a “space” into a comfortable and familiar “place”. One common mechanism is “to literally build, construct, and inhabit landscapes that enable the person to continue to live a familiar lifestyle” (Jean 2015). This paper develops a theoretical model for understanding the transition from a person’s place of origin to a new environment, and the role of the processes that people use to recreate aspects of their former place. The paper explores how this framework and its constituent processes can be used to improve resilience in displaced communities and contributes to an understanding of how refugees transition from displacement to emplacement through a process of place-making.

**Elizabeth Brabec** (ebrabec@larp.umass.edu) is Director of the Center for Heritage and Society at the University of Massachusetts Amherst, and visiting researcher at the Czech University of Life Sciences, Prague. Her research focuses on the cultural attitudes towards land and community in diverse cultures, and the impact of those cultural attitudes on displacement resilience. She has written numerous articles on cultural landscapes and the role of heritage in communities. Sean O'Donnell is a PhD student researcher at the University of Massachusetts Amherst, working on the role of gardens in the food systems of refugee camps.



## Resilience strategies and environmentally induced migration in the coastal regions of Bangladesh: Exploring the scope towards new transformation processes

Mehdi Azam, Gregor C. Falk

This study explores and analyzes various internal and external factors links to environmental and socio-economic change to drive migration and displacement in the coastal Bangladesh. This study uses resilience theory to develop the initial conceptual framework, categorizes impacts, and strategies to strengthen local resilience. This study has been conducted for a better understanding of the changes in migration pattern, observed changes in the local environment; and short and long-term economic development indicators. Data used from an empirical research (2011-2012) with local people, a follow-up key informant interviews in 2015 and work experiences from climate change projects implemented in this region. The study finds that the agricultural transformation has caused an ecological disaster due to salinity intrusion and shrimp farming started in the 1980s leading to significant environmental transformation and threats to resilience. Reduction of household resilience has shifted away vulnerable people outside their territory ranging from one week to six months. Seasonal migration is a common trend to strengthen household capital and savings; as an alternative adaptive practice/coping strategy of vulnerable people when regular employment is not available. Permanent migration is still negligible, though chain migration exists and latest findings show that people have also moved to peri-urban areas in addition to the urban and regional destination. Local people emphasizes man-made interventions to existing socio-ecological system and climate change induced disasters e.g. cyclone and prolonged water-logging. Climate change exacerbates an already existing problem due to increased frequency and intensity of these disasters. The study suggests an integrated transformational mechanism that may bring people back to the existing self-sustaining agriculture systems and development of sustainable shrimp farming. Mainstreaming the issue migration in the current policy is imperative that can support long-term integrated development to address the problem and to strengthen local resilience.

Formerly Project Research Officer in 'Alternative Livelihood Program in the Context of Climate Change'(ALPCC) project implemented in the Coastal Region of Bangladesh by Bread for the World, Germany and CAFOD, UK and a Contributor in Network on Climate Change, Bangladesh (NCC,B) project, **Mehdi Azam** (mehdi.azam@mq.edu.au) is currently working as Casual Academic at Macquarie University. This article draws on the mentioned project experience and an empirical research carried out in south-western coastal Bangladesh focusing on environmentally induced migration.



## Migration in Response to Environmental Change in Sundarban: A Sustainable Livelihood Approach (SLA)

Avijit Mistri

Over the years, environmental migration is being a growing concern along with climate change, particularly for the low-lying areas and islands in the South and East Asia. The fragile environment of the islands of Sundarban has caught one of the top most attentions among them. The present study is an attempt to get insight into the subjective appraisal of the environmental change in Sundarban, its influence on means of livelihood, especially on farming and fishing, and finally its linkage to out-migration. It is a comparative study between two groups, migrants and non-migrants. The study reveals that islanders are more concerned about their own family than holistic global risk. They also mostly are unable to perceive the non-human nature of the current impact of environmental change in Sundarban. Both the migrants and non-migrants perceive more or less equal environmental risk, which tend to moderately affect their respective activities. Therefore, there is no significant difference observed between the groups in terms of livelihood threat. Moreover, the impact of environmental change can hardly be attributed to the sole driver of out-migration from Sundarban, rather can be considered as an additional push along with the socioeconomic factors those play a major role.

**Avijit Mistri** (avijit65\_ssf@jnu.ac.in) was born in a remote island of Sundarban, India. At the age of 15 years, he had been forced to leave my birthplace victimised by the natural calamities and acute development deficit. He graduated from the University of Calcutta in Geography (2006) and post-graduated from the Banaras Hindu University in 2009. Next, he entered into research on environmental migration and livelihood issues in Sundarban in the Jawaharlal Nehru University. He completed M.Phil. (2010-2012) and is pursuing Ph.D. from there. Eight articles and a book are his contribution in research. Now, he is an assistant professor in Nistarini Women's College.



## Rural-Urban Migration as Effective Adaptation to Climate Change? Findings from South Bangladesh

Kira Vinke

The nexus between climate change and migration is complex and its understanding bears crucial implications for mitigation, adaptation and development policies. In developing countries, such as Bangladesh, the general trend of rural-urban migration may be amplified by the negative effects of climate change on agricultural production (as sources of livelihoods in the countryside), and on human health and safety. Deltaic regions like the Bay of Bengal are at the forefront of expected climate impacts. Already, in Bangladesh's cities informal and poor settlements are growing, leaving little capacity to absorb migrants with no skills for the urban labor market. This leads to the question: Is migration an effective adaptation to the impacts of climate change? Building upon the existing theories of migration a multilevel qualitative systems analysis, grounded in fieldwork in Southern Bangladesh, forms the core of this assessment. As different actors employ different criteria for effectiveness, three levels of analysis are included: the individual, the city / village and the international level. Methods include semi-structured qualitative interviews with migrants and relevant experts, a statistical analysis of available socio-economic data, and a critical discussion of the applied theories. The overall aim is to identify the specific circumstances under which migration can be considered an effective adaptation strategy and to use these insights to inform policies of mitigation, adaptation and migration management.

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## « Cap-Haïtien » or « how to 'construct' a flood risk in a decade »

Gracia Joseph Gracius, Pierre Ozer

Cap-Haïtien is a town situated in northern Haiti that is experiencing an unprecedented increase in flooding. While some observers are tempted to blame the flooding to the consequences of climate change, we try here to demonstrate that it is the total lack of urban planning, environmental degradation, lack of good governance and rural exodus which are the main components creating this exceptional risk. The objectives of this paper are to analyze the evolution of urban expansion in two wetlands (Haut-du-Cap river and the mangroves in Petite-Anse) from 2004 to 2016 and to assess the perception of flood risk by local people. The urban expansion dynamics is analyzed using 23 images with very high spatial resolution available in open access on Google Earth since 2004 and surveys were administered to 50 respondents living in newly parceled zones during a field mission in April 2016. Our results show that recent urban sprawl is mainly carried on embankments in the estuary of the Haut-du-Cap river or to the detriment of the mangrove. Consequently, these new residents are periodically flood victims. Questioned on the ground, it appears that 80% of these people are coming from rural exodus and have settled in Cap-Haïtien in the last decade. 82% and 60% of the people live respectively below the poverty line (< 2 USD / day) or in extreme poverty (<1 USD / day), and 42% are illiterate. Therefore, the ignorance of flood risk, poverty and low education levels are all parameters involved in the vulnerability of these new inhabitants. Thus, 78% of respondents claim to have been dramatically impacted by flooding at least three times since their arrival (i.e. since 2004). Field surveys revealed that most of the newly settled people in some areas highly exposed to the risk of flooding in Cap-Haïtien come from neighboring rural areas. Their movements are motivated by the aspiration of "a better life". However they were quickly disillusioned because the recurrent floodings plunge these populations in an aggravated state of insecurity. As for the authorities, they are guilty of not applying the national standards for construction in flood risk areas and the lack of regional planning policy endangers the survival of hundreds of households per year. In this case, it seems evident that the most frequent flooding is not due to climate change but rather that chaotic governance creates all conditions for the "construction" of the risk because of the inhabitability process.

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**Pierre Ozer** (pozer@ulg.ac.be) has a PhD in geographical sciences (University of Liège). He has worked for various institutions such as the Università degli Studi di Genova (Italy), the University of Luxembourg and the United Nations Food and Agriculture Organisation (FAO, Rome). In 2009 he was elected full member of the Royal Academy for Overseas Sciences, Brussels. He led the Belgian scientific delegation to the United Nations international negotiations to combat desertification (UNCCD COP-9). Pierre's main research interests include desertification processes, natural risk and disaster management and adaptation strategies to climate change. Pierre teaches these subjects at the University of Liège, but also in the Università degli Studi di Genova (Italy), Università degli Studi di Sassari (Italy), the University of Angers (France), Universitatea din Bucuresti (Romania) as well at the University of Parakou (Benin) and the University of Djibouti (Djibouti). In 2016, he launched the specialised Master degree in risk and disaster management at the University of Liège. He is the author of five books and over 300 scientific and 'public' publications in those fields. Pierre is the scientific coordinator of The Hugo Observatory at the University of Liège.



## Societal Thresholds for Extreme Climate Events

Nakia Pearson

In attempting to understand how extreme climate events beyond 2°C warming will impact livelihoods and affect coping capacity and resilience to sudden changes in the Earth's climate system – i.e. tipping points, it becomes important to understand how societies will respond in their anticipation and perception of environmental change. This study, in focusing on Bangladesh, is an attempt to understand how people react to extreme climate events in the world region that is most exposed. As migration tends to occur most often when environmental degradation affects the livelihood and coping mechanisms of people with ecologically-dependent livelihoods, understanding its trigger requires an assessment of socio-environmental thresholds (Afifi & Jäger 2008). While national or international policies may affect adaptation, most adaptive responses will be made at the local level by resource managers, municipal planners, and individuals (Posey 2009). The study therefore takes a qualitative bottom-up approach to understand local vulnerability and agency, measured through different sectors - agriculture, water, forestry and health (Ludena & Yoon 2015; Felix 2010). Both destination and origin areas are taken into consideration in order to understand the migration potential of households that have not migrated, and migration thresholds for those that have.

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# Legal & policy perspectives



## The seven pathways for the legal protection of environment-induced migrants

Carolina de Abreu Batista Claro

Environment-induced migrants can be regarded as non-conventional refugees and forced migrants, internally or internationally, temporarily or permanently, in a situation of vulnerability, and that are forced to leave their homes for environmental reasons, of slow or rapid onset, caused by natural or anthropogenic reasons, or a combination of both. Although there is no specific recognition and protection for these migrants under international law on a global scale, some regional legal instruments and national laws recognize and protect them. The main argument of this paper (a product the author's PhD dissertation) is that environment-induced migrants are under general protection in certain areas of international law and that the current and future possibilities for specific protection can be found in the primary sources of international law, referred to in Article 38(1) of the Statute of the International Court of Justice. Also, seven protective pathways for environment-induced migrants were identified and should be addressed on the subject: by means of (i) humanitarian action, (ii) complementary protection, (iii) domestic law, (iv) climate justice, (v) shared responsibility, (vi) judicialization of environmental migration, and (vii) the international treaty. It is also suggested that a comprehensive global environmental migration governance be established, based on international regimes and by action of actors at local, national, regional and international levels, for the implementation of the forms of protection and to meet the needs of environment-induced migrants worldwide.

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## 'Environmental refugees' a legal mapping exercise

Jolanda van der Vliet

In the academic literature and policy papers, the topic of environmental refugees is often approached as either a human rights, a security, or a responsibility issue. The approach chosen by policy makers is highly relevant for the legal discipline, as it determines the expectations that one holds from the law and provides a framework in which complementary norms are bargained. A different approach leads to a different logical solution and thus preselects legal outcomes. A human rights approach for example, focuses on the affected persons (human rights law), where a security approach focuses on states (refugee/migration law and bilateral or multilateral conventions on trans-boundary resources) and the responsibility approach on polluters (environmental law, the rules of international law on state responsibility and liability law).

Legal practitioners should be aware of the different approaches. They should inform policy makers on legal possibilities outside the policymakers scope and strengthen protection regimes by framing environmentally forced migration as a breach of the respective legal regimes. This can help to remove the topic of environmentally forced migration from the legal 'no-man's land' where it currently resides. Framing can also be used to incorporate legal elements from different policy approaches. For example, non-refoulement claims can be strengthened by referring to the standards for environmental quality as set in the environmental law regimes and the standards as reflected in human rights law. Possible security threats may be used to inspire states to address polluters or to help other vulnerable states to progressively realize human rights. Or a human rights approach to a responsibility claim may strengthen a legal justice narrative. In a nutshell, better insight in the fragmented protection regimes will allow for better framing to fit the existing legal regimes and will allow for a more holistic approach in future.

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## Moving Beyond the Shortcomings of International Law: a Proposal for the Legal Protection of Climate Migrants

Beatriz Felipe Pérez

Environmental factors, especially climate change (sea level rise, droughts, ice melting and floods, among others) are increasingly affecting global migration flows. As it is recognized in the report 'The State of Environmental Migration 2015', the relationship between human mobility, climate change and the environment has seen increasing relevance in the international policy sphere. However, despite the advances, knowledge about climate migration is still limited. There are still ongoing discussions about the terminology, the figures, the climate change and mobility nexus and the characteristics of climate migrants among other topics. Climate migration requires complementary and flexible actions rather than isolated proposals that do not guarantee the effective legal protection of climate migrants. Thus, having in mind that climate migration is a highly complex and heterogeneous phenomenon which depends not only on the climate factor but on the socioeconomic characteristics of the affected population and the environment, the paper seeks to develop a holistic proposal for the effective legal protection of climate migrants. By differentiating among three broad categories of climate migration, the paper provides an overview of how the existing legal frameworks at the international level (human rights, labor migration, international refugee law, internal displacement and stateless law) could be adapted in order to protect the rights of climate migrants. With the objective of moving a step forward on the recognition and effective legal protection of climate migrants, the paper also highlights that the adaptation of the relevant branches of international law must be completed with the adoption of an ad hoc universal treaty within the long term and the promotion of other complementary options within shorter term.

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## Linking climate-induced migration with the international environmental regime: Overcoming the legal impasse

Avidan Kent, Simon Behrman

The phenomenon of climate refugees has been defined by many as a 'legal hole', or one that falls within a legal 'no-man' land. Despite the projected size of this phenomenon, international law does not provide any clear answers, not even in the form of weak declarations, guidelines or soft law principles. Even the terminology used to define people forced to leave their homes due to climate change is hotly disputed. Some important and useful work has been done in trying to address this gap. From around the turn of the millennium there have been a variety of suggestions as to how the question of climate refugees – also variously referred to as climate migrants, environmental migrants/refugees, climate-induced migration etc. – could best be dealt with. These have tended to focus on either expanding existing laws governing refugees, or developing human rights norms to either accommodate them or to provide legal remedies against polluting States. There have also been a few who have attempted to draft whole new treaties to deal with the problem and to provide solutions, as well as innovative attempts to deal with particular aspects of it. While all of this work over the last decade or more has been immensely useful in identifying the problems, and in framing the questions and possible solutions, we appear to have reached something of an impasse in both scholarship and policy. We argue that a relatively unexplored avenue in the literature is the potential to expand and develop certain elements within the framework of international environmental law. We suggest that the way forward, or the manner in which the longstanding legal impasse may be, at last, breached, will be by linking the phenomenon of climate refugees with the environmental legal regime. This paper will advocate in favour of this route; its main argument is that the environmental regime is indeed suitable for the regulatory accommodation of climate-induced migration due to certain established principles and mechanisms that are lacking in other legal regimes. Furthermore, we also argue that the linking of the climate-induced migration phenomenon with the environmental legal regime could be useful for the development of novel and creative ideas in which this phenomenon should be regulated.

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**Dr Simon Behrman** is Lecturer in Law at the University of London, Royal Holloway. He has researched widely into the history and practices of asylum from antiquity up to the present day. As part of his research Simon has also looked into specific examples of 'grassroots asylum' in the USA and France, which have resisted migration and refugee legal regimes. His work in these areas has been published in the *International Journal of Refugee Law*, *Law and Critique*, *Birkbeck Law Review*, and *Refugee*.



## No Protection for Climate Induced Migration – a study of stalled norm change in international policy cooperation

Elin Jakobsson

This paper scrutinizes obstacles to norm formalization in international policy cooperation, using the afore promoted norm of international protection for climate induced migrants as an illustrative case. This norm proposal has gained a lot of traction but no substantial policy impact on an international level. This study seeks to explain the mechanisms that underpin this process by using a new theoretical framework for norm adoption where factors are divided into three sets concerning the norm, the process and the context respectively. The analysis assesses the comparative quality of the different factors and finds that the combinational effect of the lack of political will, the lost support of the epistemic community and the lack of a unified understanding of the issue has caused the norm proposal of protection for climate induced migrants to lose momentum and stall. The paper contributes to the field of research concerning policy making on climate induced migration by theoretically assessing and explaining outcomes of the policy process. Moreover, given that the majority of existing studies on the mechanisms determining norm adoption have focused on successful cases, the paper also offers a theoretical contribution to the field of norm literature by examining this case of seemingly stagnated norm change.

**Elin Jakobsson** (elin.jakobsson@ekohist.su.se) is a PhD Candidate in International Relations at Stockholm University. Her dissertation concerns norm formalization in international politics using policy making on climate induced migration as her empirical case. Elin also has a general interest in migration issues and teaches an undergraduate course in Global migration. Elin holds a Master in Public Administration and Policy Analysis from School of Public Administration in Gothenburg. Her Master thesis "Global policy making on climate refugees – what is the problem?" from 2010 won a price for excellent master thesis and was published as a report in the series "Förvaltningshögskolans rapporter" (no. 116).



## Expert Views: Policy Prospects and Challenges in the Environmental Mobility Arena

Olivia Dun, Karen McNamara, Fanny Thornton, Carol Farbotko, Ransan-Cooper Hedda, Emilie Chevalier, Purevdulam Lkhagvasuren

The movement of people in the context of environmental change, commonly understood in terms of mobility or migration (and in this paper referred to as people movement in the context of environmental change (PMEC)), has merited an increasing amount of attention and debate, particularly in the wake of broader concerns with climate change (Adger et al., 2015; Friedmann, 2016). While in recent years several papers have made inroads into capturing and analysing the unfolding shape and implications of narratives, discourses and framings of PMEC (see Baldwin, 2014; Mayer, 2014; Ransan-Cooper et al. 2015), this contribution presents the results of a survey with 262 respondents that directly examined the perceptions and understandings of PMEC among those who work or engage in this area largely as professionals or experts, situating these perceptions within the policy development they help to drive. The aims of this paper are threefold. First, we document some of the broad characteristics of the PMEC 'expert' community captured by our survey at a point when, arguably, PMEC has matured and achieved policy relevance: recognised and addressed as a distinct issue, it is supported by (emerging) governance frameworks, and these are shaped partially by PMEC experts. Secondly, we analyse how the PMEC 'expert' community conceptualises PMEC. Third, we examine PMEC experts' understanding of how to best address PMEC, contextualising responses with respondent characteristics such as occupation, geographic location and gender. The perceptions and priorities of those involved in this effort are crucially important because policy never develops solely on the basis of rational calculation and objective information. It is also influenced by the knowledges, values, assumptions, cultural contexts and activities of participants in a policy arena (Daniell, 2014; Stehr & Grundmann, 2011). As such, this paper takes a less travelled route (cf Moriniere & Hamza, 2012), focussing not on mobile subjects themselves but on the professionals who take an interest in understanding them and addressing the social and political issues associated with their movement.

**Olivia Dun** (odun@unimelb.edu.au) is a human geographer with a background in environmental science, migration studies and international development currently working as a Postdoctoral Fellow in the School of Geography, University of Melbourne. Her primary interests lie in the linkages between environmental change, natural hazards, and human migration/displacement as well as how social and cultural relationships with nature can shape and influence environmental protection and agriculture. Olivia is currently conducting research about ethnically diverse perspectives on the Australian environment with refugees and migrants in rural Victoria.



## Environmental Migrations and Marginalization: The Doubtful Citizens of India

Ritumbra Manuvie

The State of Assam situated in the Eastern borderland of India is one the most environmentally sensitive region of the country with a 'very high' nested vulnerability towards both the geophysical hazards such as earthquakes and the hydro-metrological hazards such as floods. Out of 32 districts in the state of Assam 28 gets annually flooded leading to massive displacements which are both temporary and permanent in nature. A lot of the permanent relocation occurs due to complete submergence of riverbanks and river islands. However, due to the politicization of migration issue in this borderland area, a legal context has been created since 1983 through which individuals who migrate can be stripped of their citizenship rights and designated as D-voters (literally meaning Doubtful-voters). In 2016 before the Assam State Assembly election, approximately 127,000 D-voters were identified. It has been found through careful analysis of highly sensitive state data and qualitative field interviews that not only the enumeration is arbitrary, featuring in the D-voter list has substantial rights implication towards the freedom, resettlement assistance and welfare benefits a person and their family can claim. The first part of the present paper conceptualizes this praxis of governance of displacements and discusses its actual implications for victims of floods in the state of Assam. The second part of the paper analysis how the over-securitization of migration debate has constricted Indian government's perception towards environmental migrations and in what ways it contributes towards a regime of inaction and absence from policy discussions on climate change and migration.

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## The rise of border security in the face of climate-induced migration

April Humble

In an unprecedented time for mankind when anthropogenic climate change threatens to impact, alter and destabilize both Earth and human systems worldwide, we are entering another unprecedented human driven phenomenon: the sealing off of great swathes of geographical territories, through the rise of border securitisation. The former has been predicted to cause great instability and insecurity, from an environmental to social and political perspective, worldwide, resulting in increased flows of human mobility across the globe. The latter is a symptom of borders becoming a national security issue and the 'migrant' being conceptualised as a threat, resulting in an attempt to 'securitise' our borders, and the inhibition of movement for the undesired. Since 9/11, incidents of border securitisation have more than tripled, and border control technologies now exist on every inhabited continent. Crucially, areas with concentrated incidents of hardened borders are often found in environmentally and politically fragile regions, such as the Middle East. This leads to suggest that the crossing point of increasingly fortified borders in a warming world could present a very toxic mix. Despite climate change, climate-induced migration, human mobility, borders and border security all receiving increasing attention in recent years in the academic, political to public realms, the nexus of these remains surprisingly unexplored. This leaves great questions unanswered. What will border security mean for climate-induced migration? Are there alternatives for those on the move? How are governments framing the issue? What does this mean for human security? And is the refugee crisis and what is happening in Syria right now a taste of what is to come?

**April Humble** (April.Humble@hzg.de) works at the Climate Service Center Germany (GERICS) in Hamburg. She is a Junior Scientist in the Climate Impacts and Economics Department, which she joined in May 2013. April is active in several projects at the Center, all which encompass differing focuses on the impacts of climate change. Her activities vary and often include the editing of papers, serving as editor to Special Issues and helping to organise international workshops and conferences. Another key aspect of her work is her role in the Secretariat of the Earth League. The Earth League is an alliance of leading climate scientists and world-class research institutions, looking to influence world policy makers on climate change, mitigation and adaptation. As a central figure in the highly active two person secretariat, she is helps with the networking, capacity building and execution of activities for the Earth League. April's main interests include climate change and the social impacts of climate change, as well as the nexus of climate change induced-migration and border security.





# Critical perspectives on climate migration in the policy arena



## From Cancun to Paris: deconstructing an era of policymaking on the migration and climate change nexus

Sarah Louise Nash

The Cancun Adaptation Framework agreed by the COP16 of the UNFCCC in 2010 ushered in a new era for policymaking on the climate change and migration nexus, anchoring the issue in an agreed text of the UNFCCC for the first time. The phrase 'displacement, migration and planned relocation' contained in the document has become a mantra for advocacy work on the nexus and, due to the considerable clout attributed to the phrase because of its status as part of an international agreement, it has become a 'basis' for further work. The 2015 Paris Agreement provides renewed legitimacy with the creation of a Task Force on climate change and displacement, for the first time creating a concrete entity under the UNFCCC to consider the nexus. Bounded by these high-profile developments in climate politics, the years between Cancun and Paris constitute a distinct era in policymaking on the migration and climate change nexus. This 'era' has been typified by the solidification of early references in policymaking documents (such as Cancun) in further policymaking processes, culminating in the establishment of a Task Force in the Paris Agreement. Furthermore, a coordinated advocacy community has emerged, featuring consensus-building before presenting a united front in advocacy work as well as a central role for knowledge creation and dissemination. Indeed, in a mutually-reinforcing relationship, calls for a better understanding of the nexus have been supported by advocacy actors, who have also been involved in knowledge creation to respond to them. This article deconstructs policymaking on the climate change and migration nexus between 2010 and 2015, and in doing so looks to five different dimensions: 1) the settings where governance efforts have taken place; 2) the 'episodes' in which governance efforts have played out; 3) the actors involved; 4) the conceptual language employed; 5) the mobilisation of knowledge.

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## From Data to Argument: the challenges of generating policy-operable understanding from empirical knowledge on climate change's relationship with migration

Calum T.M. Nicholson

Since the mainstreaming of climate change as a key topic of public and political debate a decade ago, its relationship with human migration has gained increasing prominence among researchers and policy-makers. However, among the most common refrains (and conclusions) of empirical research is that climate change is one among many variables interacting - in a complex manner - to 'drive' migration. In other words, the framework for determining the causal relationship between climate change and migration, and the threshold by which we might distinguish such migrants from any other sort of migrant, remains unclear. The paper will argue that considering such frameworks and thresholds is an integral step in any attempt to assess the state of empirical knowledge on the topic of climate change and migration. Only with such thresholds and frameworks in place may data lead to persuasive arguments for political and institutional investment in particular policies, actions, and interventions. Given the currency of both climate change and migration as themes of political and popular concern, and the associated risk of their expedient use and abuse in the service of private agendas that are not in the public interest, addressing these two considerations is especially important. This paper will therefore do three things: argue that a recognition of multi-causality and complexity is widespread in research; discuss the importance of attending to frameworks and thresholds; and emphasise the potential real-world ramifications of failing to do so.

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## Climate Migration as Political Ammunition: The Political Use of the Academic Climate Migration Debate by the Greens/European Free Alliance in the European Parliament

Luka De Bruyckere

Migration as well as climate change are currently two of the most pressing issues societies are facing. The link between both crises is easily made as exemplified by news reports positing a connection between climate change and the Syrian conflict. A vivid academic debate on the environment or climate migration nexus divides maximalist and minimalist scholars. The former analyse the plight of so called climate migrants and refugees while the latter reject these concepts by stressing the complex multicausality of migration. Minimalists fear the political instrumentalisation of the climate migration discourse, assuming a predominance of maximalist argumentations in the policy realm. Their concerns prompt questions on the relation between science and politics. Theoretical perspectives on research utilization expect a loss of complexity as academic arguments travel to the political debate. Furthermore, policy makers are depicted as selecting research findings on the basis of ideological values where after they transform these argumentations to fit their political purpose. At a time that is characterized by the omnipresence of discourses on climate change and migration it is essential to assess what (academic) arguments underpin which political stance. I conducted a case study on policy documents related to the Greens/European Free Alliance in the European Parliament, guided by the following research questions: (1) How is the academic debate represented in policy documents? (2) How are academic arguments on climate migration used as political arguments? I first assessed the way climate migration is conceptualized, what degree of complexity the documents take over from the academic debate and what the documents advocate based on which argumentative support. I brought these characteristics of the documents under analysis in relation with the respective influence of minimalism and maximalism. This assessment revealed the prominent influence of what I call 'evolved maximalism', a form of maximalism that has incorporated certain minimalist arguments. Most policy documents exhibit an awareness of the minimalist nuance but nevertheless retain the maximalist conclusion on the need for policy action in response to the growing problem of climate migration. Building on the assessment of the representation of the academic debate in policy documents, I discussed research transformation, transfer, addition or deletion. With this as a basis, I developed an interpretation of how central arguments, concepts and controversies characterizing the academic climate migration debate are used as political arguments. The research revealed that the discourse on climate migration is often used to advocate or oppose issues that are only indirectly related to climate migration. Furthermore, the way climate migration is conceptualized determines the type of solutions a document proposes. Generally, the more a document is influenced by minimalism, the less likely it is to propose concrete and intrusive solutions to climate migration. As such, the way climate migration is conceptualized matters. Analyses of these underlying conceptualizations can guide the evaluation of concrete solutions and thus provide arguments to support or oppose them.



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## Politicizing 'climate-refugees': Contested preferences of actors

Nowrin Tabassum

The term climate-refugee has been appeared in many newspaper articles, academic journals and books. It indicates the people who have been or who will be uprooted by climate-induced disasters. However, the term climate-refugee has not been recognized yet by any international organizations and countries. The term is also debated in the academic world. For some scholars, there is no empirical evidence that climate change causes refugees. On the other hand, some other scholars, as well as some climate vulnerable countries and nongovernmental organizations, claim that climate change causes displacements. This paper does not confine the understanding about climate-refugees or climate-induced displacement within this black and white analysis (which means climate change can or cannot cause refugees or displacement). Rather, this paper investigates- why has not been the term climate-refugees gained significant momentum in international policy arena? This paper argues that contested preferences of actors hinder to adopt policy options to safeguard climate-induced displaced people. For example, (i) the preference of high carbon emitting countries is not to recognize climate-refugees because this recognition will push them to allow these refugees entering into their borders. (ii) the preference of low carbon emitters is to implement loss and damage principle or polluter pay principle and therefore, they demand that high carbon emitters must compensate the climate vulnerable countries by sheltering climate-refugees. (iii) the status quo biased politicians/ law professionals prefer that climate change is not a recognized category for classifying 'refugees' and therefore, not protection regime is necessary for these climate-refugees. For this reason, no actual international protection regime can be undertaken for the safeguard of climate-refugees unless the actors cannot go beyond their preferences. Keywords: Actors, preferences, climate-refugees, climate change.

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## Syria, climate and migration.

### How the media got it wrong

Alex Randall

In 2015 the media began drawing connections between the conflict in Syria and climate change. This paper asks whether the media reporting was accurate. The paper explores some of the most prominent news stories on the topic and examines whether or not their claims are supported by the available evidence. The stories examined argue that internal migration within Syria was caused by a powerful drought, and that this migration led to violence which in turn descended into protracted conflict and the refugee situation in neighbouring countries and across Europe. However, this paper contends that many of the most prominent news stories did not draw on available evidence and presented an inaccurate causal pathway between climate change and the start of the conflict in Syria. Most news stories made the case that migration into Syria's cities started a resource driven conflict between civilians. An increased urban population added to scarcity of food, fuel and housing. Several media outlets claimed that violence then erupted along religious and ethnic lines. This paper draws on recent scholarship to critique the causal chain presented by the media. The paper argues that drought did indeed add to existing drivers of rural to urban movement. However the 'resource war' thesis is supported by very little evidence in this context. Instead this paper argues that migrants and existing urban residents engaged in various acts of cooperation in an attempt to overthrow the Syrian regime. The paper concludes that although the media brought the public's attention to the connections between climate, drought and the situation in Syria, they did so at the expense of an accurate representation of the role of rural to urban migrants. This is based on work carried out producing the interactive web documentary on the same topic - available at: <http://bit.ly/SyriaClimig>

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## From Central Asia to West Africa: What are our questions?

Etienne Piguet

In this paper, we'll try to outline and critically discuss some of the main current research questions in the field of migration and the environment. Beside the classic question of the impact of environmental hazards and climate change on migration we'll address the issue of mobility as a coping strategy, of mitigation and relocation policies, etc. We'll illustrate the different questions and the use of different methods to answer them with case studies in Western Africa and Central Asia on the basis of ongoing research projects and up to date states of the art.

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## People moved and will move again

François Gemenne, Florence de Longueville, Luka De Bruyckere, Caroline Zickgraf, Sara Vigil, Nakia Pearson, Dalila Gharbaoui, Pierre Ozer

Compiling several case studies in different developing countries, we arrive at some 'general trends' on the links between climate / environmental change and migration / displacement of populations. A series of complementary papers exemplify this assessment.

(i) No direct relationship between the scale of climate impacts and migration impacts

- Small perturbations can have big effects on migration
- Big changes do not always mean big effects on migration
- Do not assume climate hotspots are migration hotspots
- Small and big quantitative migratory outcomes can be big in terms of permanence or temporality

(ii) Climate change at 2°C, 4°C or 6°C will make migration different (not just about scale)

- Non-linear changes
- Immobility

(iii) Climate tipping points do not equal migration tipping points

- Perceptions about climate change can alter migration responses
- What is the lag time between perceptions and intentions? Between intentions and actions?

(iv) The conjuncture of social inhabitability and climate inhabitability:

- Resilience
- Maladaptation.

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# Resettlement & Immobility



## A typology for the political economy of resettlement inaction

Colette Mortreux

Resettlement of individuals and communities through planned action by government agencies, for the purposes of economic development or to avoid hazards, has been shown to have significant social consequences on different groups with such populations. By contrast, movement of individuals and households on a voluntary basis is assumed to have generally positive consequences as those populations avail themselves of economic and other opportunities. What is less understood is the way in which government inaction affects communities and individuals who have limited capacity to migrate voluntarily or to adapt in place. In this article we propose the concept of 'resettlement inaction', and suggest a typology to examine uneven government responses. We argue that governmental decisions and non-decisions can lead to movement of populations on a largely unplanned basis and can also lead to cases of trapped populations with significant consequences for social well-being and cohesion. We apply the principles of political economy to examine government inaction as a mechanism of power and the profound implications non-decisions can have on communities threatened by environmental change. The study examines resettlement decisions and non-decisions by government agencies in India's West Bengal, the power dynamics associated with these decisions, and the implications government actions have had on the mobility and immobility of populations. The study uses data from interviews with agencies involved in planning and implementing resettlement and local residents affected by government decisions (n=22) collected under the Deltas, Vulnerability & Climate Change: Migration & Adaptation (DECCMA) project. Our results show that government action does not necessarily lead to positive outcomes, but government inaction is likely to induce discrete migration and in-situ adaptation responses based on individual adaptive capacity. This has profound socioeconomic implications for those with limited capacity who are at risk of permanent displacement or who are vulnerable to becoming trapped populations.

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## Quelles actions de la société civile pour influencer sur les stratégies nationales de gestion des migrations liées au changement climatique

Mamadou Abdoulaye Mbengue

Depuis une vingtaine d'années, les organisations de la société civile prêtent une attention de plus en plus fine au rôle des États dans leur réponse face au changement climatique, entendu dans ses aspects à la fois politiques et économiques. Malgré les efforts des chercheurs spécialistes des migrations, les « migrants climatiques » sont encore couramment perçus comme des gens déplacés en raison des impacts négatifs du changement climatique. Ce récit sur la cause « climatique » comme principal facteur de migration découle en grande partie de l'influence qu'exercent sur le débat climatique les chercheurs spécialisés dans les études sur la population et l'environnement (P&E). En effet, les approches néo-malthusiennes qui sous-tendent ce débat comportent le risque d'aboutir à des solutions non pertinentes comme cela s'est déjà produit dans les années 1970 avec les politiques suivies en matière de sécurité alimentaire. Une des solutions discutée aujourd'hui est celle du déplacement planifié des populations (réinstallation/relocalisation). Comme les questions de la « migration climatique » et du déplacement planifié ont trouvé une certaine reconnaissance au cours des négociations de la 16e conférence des parties (COP-16) au Mexique en 2010, il y a de fortes chances pour que des politiques soient développées en ce sens au sein de la Convention-cadre des Nations Unies sur les changements climatiques (CCNUCC). Malheureusement, ces politiques risquent de se focaliser sur la relocalisation, qui est un outil à double tranchant mobilisé dans de nombreux programmes portant sur l'atténuation et l'adaptation au changement climatique. L'expérience montre que cette solution échoue bien souvent et que ses bénéficiaires supposés se retrouvent parfois dans des situations plus difficiles qu'auparavant. De la reconstitution du cadre légal des politiques publiques, à leur mise en œuvre quotidienne par les États, émergent des logiques plus ou moins contradictoires en termes d'approche idéologique et de vision stratégique. On peut cependant, en croisant les approches portant sur plusieurs pays, et en élargissant l'échelle d'observation aux organisations de la société civile, mettre l'accent sur des aspects complémentaires, dont la prise en considération est indispensable à la compréhension des défis liés au changement climatique et des réponses propices pour l'élaboration et la mise en œuvre de politiques publiques cohérentes en matière de protection des populations victimes des effets du changement climatique. Face à cette situation, les réponses publiques apportées par la plupart des pays africains restent inadaptées du fait de la méconnaissance des pouvoirs publics des pays du Sud de la relation entre migration et changement climatique. Notre présentation sera axée sur la construction de stratégies communes d'actions des organisations de la société civile sur les questions liées à la migration et au changement climatique. Il s'agira d'échanger pour apprécier le degré et le niveau de maîtrise par les organisations de la société civile actives dans le champ de la migration, des enjeux et des stratégies de réponse face aux défis liés au changement climatique. En somme, il s'agira surtout d'amener les organisations de la société civile actives dans le champ migratoire, à s'interroger sur leur rôle et sur leurs capacités à influencer sur la stratégie nationale de gestion des migrations liées au changement climatique.



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## Climate change, displacement and the politics of resettlement in Zambia

Mikkel Funder

This paper argues that responses to climate induced displacement may serve as a vehicle for African states to expand authority and control over people and resources in rural areas. Drawing on four years of research in southern Zambia, we show how the central state has responded to recurring flood displacement through a resettlement scheme and similar activities which seek to re-locate and sendetarize citizens, re-order livelihoods and land use practices, and shift resource rights from customary to statutory regimes. Flood displacement thereby affords a means for the state to legitimately assert itself in a context where it is otherwise weak, and to make rural people and resources "legible" and manageable. These efforts are however not unchallenged, and we further show local institutions and rural citizens respond to state interventions. This includes resisting resettlement schemes by linking mobility to identity discourses, or strategically exploiting resettlement as means to expand access to resources in ways not intended by the state.

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## Chinese investments and climate migrants

Martin Gress

The article focuses on the territorial distribution of Chinese foreign direct investments and tries to answer the question, whether these investments are made also in the countries with high number of climate migrants or Chinese investments to these regions are rather neglected. We use various scientific methods in order to answer the question.

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## 'Trapped Population' in Coastal Odisha: Analysing Geographies of immobility through People's Narrative and Policy Discourses in India

Subhakanta Mohapatra

Climate change has brought a range of calamities in coastal areas namely cyclone and sea ingress and has differential impacts on vulnerable people in India. As a result, people are either migrating or helplessly stranded depending on the sources of income, types of assets and availability of choices. To understand the complexity, the paper argues that there is a need to relook at the mainstream discourse in India which is mainly dichotomous in nature- voluntary vs. forced, adapted vs. maladapted and security vs. development etc. The study was conducted in coastal villages of Satabhaya (Odisha), India located in the east coast and one of the most disaster prone states of India. Satabhaya, a cluster of seven villages, has already lost five villages due to sea ingress. People of these villages are shifted many times during their life time. The idea of 'Trapped Population' is taken from the Foresight Report and contextualized in the study area. This is a unique case in which these villages are trapped between fury of advancing sea, frequent cyclones and legality of Bhitarkanika Biosphere Reserve and the Government. This study is based on qualitative case study that mainly focuses on immobility of 'left-behind' populations. This is essential to understand why certain groups of population are mobile while others are not. How does the departure of some affect the vulnerability of those who stay? We must address the inequality of responses today to address the implications of environmental change for in future. Exploring the environmental change- nexus has a policy value for intervention. Therefore, this paper also critically reviewed policies, legality prevalent in the country to find out gaps to address the emerging situation and has used narratives and concepts of geographies of everyday life to understand this complex and non-linear events.

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## Household Vulnerability to Environmental Change and (Im)mobility in the Volta Delta of Ghana

Donatus Yaw Atiglo, Samuel Codjoe

Global climate change and local environmental change are expected to impact livelihoods and exacerbate living conditions particularly in developing countries. Migration has been used as one of many adaptation processes in highly vulnerable locations including the Volta Delta of Ghana. Though environment-migration nexus is intricately complex, acknowledged in the environmental migration literature however is the influence of gender and migration momentum on migration intentions and actual mobility though few empirical studies have actually explored this. Further, few empirical studies have explored the phenomenon of 'trapped' or immobile but highly vulnerable populations. This study seeks to explore the relationship between household vulnerability to environmental hazards and (im)mobility among 1,364 households in the Volta Delta of Ghana using empirical data from the 2016 Deltas, vulnerability and Climate Change: Migration and Adaptation (DECCMA) Survey. Separate logistic regression models are run to explore the roles of socioeconomic characteristics and migration momentum in mediating the effect of household vulnerability to environmental hazards on (i) migration intention and (ii) immobility. Vulnerability is measured by exposure and sensitivity to flooding, drought, salinization and/or erosion. Preliminary results show that households in coastal areas are more likely to be exposed to multiple hazards compared with inland households in the Volta Delta. Whereas there is a significant relationship ( $\alpha=.05$ ) between household vulnerability to hazards and migration, cluster analyses reveal that migration momentum and place attachment significantly reduce the strength of that relationship. Also, female-headed households are less likely to move compared with male-headed households. Other significant covariates of mobility include educational attainment and as well as household demographic composition. While these findings indicate the importance of migration trajectories in determining the use of migration as household adaptation strategy there is the need for further qualitative inquiry into the lived experiences of households in different scenarios of vulnerability and migration momentum.

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## Changements environnementaux en milieu forestier camerounais et dynamique migratoire chez les pygmées Baka: Du nomadisme à la sédentarisation

Uilrich Inespéré Waffo, Sariette Agnes Nguegang Tayou

Les Baka sont l'un des peuples autochtones du massif forestier du bassin du Congo. Historiquement, classés dans le groupe des « pygmées » d'Afrique Centrale, on les retrouve également dans la forêt équatoriale du sud Cameroun. Ce groupe ethnique de chasseurs-cueilleurs, se caractérise particulièrement par un attachement ontologique à la forêt qui constitue non seulement leur cadre de vie mais aussi leur moyen de subsistance et le principal facteur de maintien et de reproduction de l'ordre social. Bien plus, les Baka se singularisent par un style de vie foncièrement nomade. En effet, suivant les saisons et les opportunités, ils migrent en forêt tout au long de l'année, s'établissant d'un campement à un autre. Cependant, l'industrialisation et l'exploitation forestière croissantes induisent un ensemble de changements environnementaux (climatique, biodiversité, utilisation des sols) qui affecte significativement la vie de ce peuple. Subséquemment, ces changements environnementaux, en plus de transformer les forêts, chamboulent leur mode de vie traditionnel migratoire, aggravant ainsi la vulnérabilité socio-économique qu'il subisse déjà. Cet article analyse les effets des changements environnementaux que connaissent les forêts camerounaises sur la dynamique migratoire des Baka. Lesquels changements sont essentiellement d'origine anthropique. Ainsi, l'étude se fonde sur la recherche documentaire et des données qualitatives collectées dans neuf (09) communautés Baka au Sud du Cameroun. Les résultats débouchent sur une réelle contradiction scientifique concernant le lien entre migration et environnement. Car les Baka se sédentarisent en guise de résilience aux changements environnementaux en forêt. Or, l'essentiel des théories et des études sur la question postulent le contraire ; notamment que la migration est la stratégie par excellence de résilience des peuples et des communautés vis-à-vis des changements environnementaux. Parallèlement, cette sédentarisation, se fonde sur l'adoption d'une « civilisation de l'éphémère » pour assurer la survie identitaire et le maintien des structures socio-environnementales traditionnelles.

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## Immobility and the Environment

Caroline Zickgraf

Thus far, most research on the human impacts of climate change has focused on the people displaced, who have come to incarnate the human faces of global warming (Gemenne 2011). However, the people who face the same adverse conditions, but who stay in communities of origin have been relegated to the academic and political backburner. Only recently have scholars noted that 'in the decades ahead millions of people will be unable to move away from locations in which they are extremely vulnerable to environmental change', becoming trapped populations (Foresight 2011).

While those 'trapped' represent a substantial policy issue, there is little empirical work specifically targeting such populations. The scant attention that is afforded to immobility centers on the notion of the involuntary, whether people are 'trapped', 'stuck', or 'immobilized'. Much like the discourse of 'climate refugees' as victims has been reframed to include migration as an adaptation strategy, the notions of people 'trapped' or 'climate hostages' must also be nuanced. The complexity of immobility in crisis, including the agency of the immobile, warrants thorough investigation. In *IMMOBILE*, 'trapped' populations are considered as only one possible 'immobility outcome.' In this presentation, we provide an empirical update on the *IMMOBILE* project after two case studies were performed in 2016 in north-western Senegal and in the Mekong Delta of Viet Nam.

**Caroline Zickgraf** ([caroline.zickgraf@ulg.ac.be](mailto:caroline.zickgraf@ulg.ac.be)) is FNRS Postdoctoral Research Fellow at the University of Liège. She holds a doctorate in political and social sciences from the University of Liège as well as degrees from Leiden University (MPhil) and Michigan State University (MA). Dr. Zickgraf has consulted for the World Bank, the Nansen Initiative, the International Center for Migration Policy Development (ICMPD) and the Food and Agriculture Organization of the United Nations (FAO) on the links between climate change and migration. In 2016, she began leading ULg in the Horizon 2020 project 'EDGE' (Environmental Diplomacy and Geopolitics), a partnership with University of Economics Bratislava and Sciences Po-Paris. She also lectures on environment, migration, and ecopolitics at Sciences Po-Paris, Paris 13, and IHECS. Dr. Zickgraf's main areas of research are the migratory impacts of climate change on coastal populations, transnationalism and transnational families, and (im)mobility. Currently, with the generous support of the Fund for Scientific Research (FNRS), she is conducting the research project 'IMMOBILE' (Immobility and the Environment), which analyzes populations 'trapped' or who choose to stay in areas affected by environmental changes and their relationships with those who go. For this project, she is conducting case studies in Senegal (Université Gaston Berger), Vietnam (Can Tho University) and Japan.



# Human Rights, Equity and other legal aspects of Climate Change and Migration



## Human Rights, Equity and other legal aspects of Climate Change and Migration

Cosmin Corendea

It is an injustice that the poor and vulnerable in developing countries, who have contributed least to the problem, are already carrying a disproportionate burden of the impacts of climate change. People in developing countries are already adapting to the impacts of climate change, since the impacts are acting as a risk multiplier, affecting people's livelihoods, health, food security, water security and human mobility. It is important that their rights are safeguarded, including their right to development. Affected communities already develop solutions and approaches to the impacts of climate change including migration. In order to make these solutions and approaches sustainable, they must be supported by a legal framework. The rule of law needs to be brought into the climate change process at the local, national and international level in order to protect rights, reduce risk, build resilience, empower people and facilitate positive migration. This is particularly important in the context of the 2015 Paris Agreement, as it will inform the legal frameworks dealing with climate change around the world. The issue of equity, or fairness, also needs to be addressed in the context of the Paris Agreement. Equity must be considered, not just in terms of mitigation but also in terms of adaptation, transfer of technologies, migration, climate finance and capacity building. The question of equity of action is also relevant, whether some countries can and should take greater action on adaptation and less on mitigation under an international framework. This session will explore human rights, equity, climate justice and legal aspects of climate change and migration -from local to global - drawing on and using global level experiences to inform national and international frameworks. The expected outputs of the session are as follows: Practitioners' perspectives on how rights and equity apply to local, national and international level in the context of human mobility Increased understanding amongst participants of the relevance of rights / legal frameworks in relation to migration actions How to use legal tools in climate change migration scenarios.

**Dr. Cosmin Corendea** (S.J.D. GGU, LL.M. (hon.) STU) (corendea@ehs.unu.edu) works as Associate Academic Officer/Legal Expert at UNU-EHS. He is acting as focal point for legal issues associated with environmental degradation and adverse effects of climate change, such as institutional vulnerabilities and adaptation, climate equity, climate justice, human rights, forced migration, etc., conducting research on conceptual and comparative frameworks of legal perceptions of environmental vulnerabilities, resilience and sustainable development impacts with distinct and positive reflection in policy making.



## Human Rights in the Changing Arctic

Dorota Harakaľová, Kristína Baculáková, Mikuláš Černota

Global climate changes in the Arctic are reflected as a significant loss of ice cover. These changes not only cause such ecosystem changes but also affect the way of life of indigenous peoples. Sustainability of their traditional way of life causes them major existential problems, whereas hunting caribou, whales, seals, etc., is their basic economic activity. The problems were that environmental changes were perceived rather in the context of the protection of flora and fauna and indigenous peoples were in the background. Recently, the status of the rights of indigenous peoples within the international community became an urgent topic. Although international legal documents governing the rights of indigenous peoples were adopted, these rights are regulated mainly by national legislation. The extent and nature of the rights granted is therefore different depending on the country in which they are situated. In connection with environmental migration, not only the rights of indigenous peoples, but all the inhabitants of the Arctic should be taken into account.

**Dorota Harakaľová** (dorota.harakalova@gmail.com), **Kristína Baculáková** and **Mikuláš Černota** are from the University of Economics in Bratislava.



## Reviewing the concept of vulnerability in the context of climate/environmental change and migration from a human rights perspective

Monika Mayrhofer

The concept of vulnerability has been increasingly used in various academic fields as well as in public and political discourse. Especially with regard to climate/environmental change it is seen as an important analytical tool for grasping the complex interrelation between social and natural systems which not only provides the context for responding to the effects of climate change but also the decision to migrate. In the academic and political debate on human rights, the concept of vulnerability, especially the notion of vulnerable groups, has also increasingly been used. However, in this field the concept has also met much criticism as it is said to conceptually victimize and marginalise certain groups or even depoliticise social, economic and political structures that are discriminating against members of specific groups. Facing such profound criticism policy makers even started to abandon the concept, e.g. the notion of vulnerability has been deleted from the new 'EU Strategic Framework and Action Plan on Human Rights and Democracy'. Against this background, the proposed paper will review the concept of vulnerability in the context of climate/environmental change and (im)mobility from a human rights and social science perspective. It will firstly identify problematic dimensions of the concept and then examine if these dimensions are also relevant concerning the climate/environmental change and migration nexus. It will secondly discuss in what way the concept of vulnerability should be modified in order to be able to adequately accommodate the social and political dimensions of environmental (im)mobility or if it should be abandoned in favour of other more useful analytical concepts and tools.

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## Adaptation strategies to avoid internal displacement in Chile: Is the current approach enough?

Sol Meckievi

Dealing with human mobility as consequence of climate change is still a challenge. However, climate impacts themselves do not displace people. Rather, the natural events create certain situations that motivate people to move to other places, but the decision to migrate will depend on the adaptive capacity of the affected population.

Chile is particularly affected by climate change impacts, holding seven of nine characteristics of vulnerability defined in the UNFCCC. In addition, it is a very unequal society, what is important if we consider that largely poorest people have a limited adaptive capacity to climate change effects.

Based on the particular situation and exposition of Chile to climate change impacts, this paper discusses the importance of adaptation strategies to prevent displacement, and evaluate if the current approach is enough to address the internal displacement according with future scenarios. We propose that the adaptation approach should consider the social dimension of climate impacts and climate patterns, and suggest that migration as an adaptation strategy should be considered.

**Sol Meckievi** (solmeckievi@gmail.com) is from the University of Chile.



## Risk management in Ivory Coast: Case Study of Population Evictions in Port-Bouët, Abidjan

Boua Raymond Comoé, Pierre Ozer

Beginning in 2011, the State of Ivory Coast decided to evict populations in risk zones of the Autonomous District of Abidjan in order to reduce the impacts of natural disasters. The last major eviction operation concerned the cleansing of the coastline in the Port-Bouët commune, threatened – according to authorities – by the advancement of the sea. This paper aims to analyse the evolution of the coastline in the commune of Port-Bouët during the period 2001-2016 and to measure the surface area of zones evacuated by the authorities in October 2014. The coastal dynamics and the surface area of the evacuated coastal zone have been analysed using high resolution spatail images available in Open Access on Google Earth between 2001 and 2016. The diachronic comparison of 29 satellite images shows that the coastline was broadly stable throughout the commune of Port-Bouët over the past 15 years. The eviction at the end of 2014 covered a zone of 10,4 km. The most densely populated area is the destroyed stretch between the main road and the beach, which varies in width between 63 and 289 m. The total surface of evictions is 124 ha. Eviction is synonymous with forced displacement, violent and authoritarian that has direct and indirect consequences on the health, economic and social wellbeing of affected populations. Additionally, the justifications given for the evictions were the threat imposed by coastal erosion in Port-Bouët and the construction of a highway connecting Abidjan to Grand-Bassam. However, our analysis proves that the coastal dynamics have been relatively stable over the past 15 years. The government's arguments are therefore unsubstantiated. What's more, the forced displacement of these populations should respond to a number of requirements, such as the Kampala Convention (ratified by Ivory Coast) that guarantees the protection of people internally displaced by natural disasters, development projects or armed conflicts. The Ivory Coast has therefore agreed to « carry out a just and equitable compensation, and to provide forms of reparation, if need be, to displaced persons for the damages resulting from displacement ». Clearly, this has not been respected.

**Boua Raymond Comoé** (MSc) is Engineer in waters and forests in Ivory Coast. He holds a specialised Master degree in natural risk management from the University of Liège.

**Pierre Ozer** (pozer@ulg.ac.be) has a PhD in geographical sciences (University of Liège, 2000). He has worked for various institutions such as the Università degli Studi di Genova (Genoa, Italy), the University of Luxembourg, the United Nations Food and Agriculture Organisation (FAO, Rome) and the Luxembourg University Foundation. In 2009 he was elected full member of the Royal Academy for Overseas Sciences, Brussels. He led the Belgian scientific delegation to the United Nations international negotiations to combat desertification (UNCCD COP-9). Pierre's main research interests include desertification processes, natural risk and disaster management, the impacts of environmental changes on public health and adaptation strategies to climate change. Pierre Ozer teaches these subjects at the University of Liège, but also in the Università degli Studi di Genova (Italy), Università degli Studi di Sassari (Italy), the University of Angers (France), Universitatea din Bucuresti (Romania) also at the University of Parakou (Benin) and the University of Djibouti (Djibouti). In 2016, he launched the specialised Master degree in risk and disaster management at the University of Liège in collaboration with the Catholic University of Louvain. He is the author of five books and over 300 scientific and 'public' publications in those fields. Pierre is the scientific coordinator of The Hugo Observatory.



# Asia



## Process and Consequences of child labour among the displaced households in the northern regions of Bangladesh

A. Halim Miah

Bangladesh is one of the leading top list in the Climate Risks Countries said by different indices. However it historically it bears the legacy of some environmental hazards like flood, cyclone, river bank erosion as one of the largest delta in the world associated with a large size of low laying coast. Some big mighty rivers like Padma, Brahmaputra, Teesta and Jamuna pass away from Himalayan to bay of Bengal through Bangladesh which carry huge of water associated with sediment. Therefore when there is heavy rainfall during monsoon at the upstream of those rivers then flood first hits on the northern parts of Bangladesh. Besides river erosion of those rivers and their streams a recurrent phenomenon that caused thousands of people landless and displacement a slow on set kind of disaster. So every year thousands of people become homeless and they are forced to migrate where most of them take shelter at high embankment, across the rail way station, and nearby town and cities as street dwellers. This study was conducted among such displaced communities lived in northern districts of Bangladesh across the river Teesta and its other stream like Dharla who were homeless due to river bank erosion and lost their traditional livelihoods too. A qualitative study was conducted during December 2013 to April 2014 with the support of the shiree/ economic empowerment of the extreme poor, a largest extreme poverty reduction program of DFID in Bangladesh. The study was supervised by the CDS of Bath University. As research tools Key Informant Interviews, Life history of different households heads, women of different ages and their current children who were in employment were interviewed. Oral consent was taken with ensured the data confidentiality by keeping the notes and citations as anonymous. Narratives data were analyzed by using MS word following the key questions and themes of the study. Besides some case studies were also collected as a thick description which best illustrate of the study. Findings reveal that children who were employment their fathers were also child labours. All of them have lost their land from river erosion which was the main option of livelihood. Among the parents who ( who were started their livelihood when they were children too) had some skills on reading and writing their children were going to school as their income was better of compare to parents who could not read and write. Parents who could read and write they found some skills based employment and trades like motor repairing, carpentry, tailoring, motor driving. Similarly child labour of those landless households who went to school but could not complete due to multifaceted deprivation of living such geographical marginalization they were enrolled in better of trades and earning compare to those who did not have minimum literacy and numeracy. " Basic literacy and numeracy is required to measure by using different scales', a child labour worked in welding workshop reported how formal education helped him to find a better employment and that raised his aspiration to be a entrepreneur like his current employer. A distinct gender differences has been found between girl child and boy child to push into a trade which is determined by the society. Girls child had very limited option to choose a trade like as home servant or ready made garment worker. Though some of them had literacy but they were not enrolled in skilled



base trade of as for gender segregated division labour. This social connotation makes girl child more vulnerable in their future life as they do not get dividend of such unskilled and low paid profession. So their children become child labour too. As conclusion this study recommends that a comprehensive social protection should be designed with emic perspective where children of homeless households should have continuous learning and skills enhance scope. Besides ICT based knowledge services can be designed for the children live in critical situation like embankments and street. Secondly in designing such education and skills based program gender perspective should take into account to design equitable learning and human resource development program as a social transformation.

Master of Philosophy in Anthropology and a Post Graduate Diploma in Youth in Development Work as academic degree, **A. Halim Miah** (bssf.gs@gmail.com) he has built his career as Professional Anthropologist and serving for twenty years in the research in development work for poor and marginalized people of the developing countries. He worked for both Government and Non Government entities notable International Centre for Diarrhoeal Disease Research in Bangladesh (ICDDR,B), Ministry of Science and ICT of Bangladesh Government, UNDP and Unicef Bangladesh, Oxfam GB, Asian Disaster Preparedness Centre, ILO Child Labour elimination program, Macro International Incorporation-USA, member of Extreme Poverty Research Group and as Senior Policy Specialist for BRAC Advocacy for Social Change Program. Designing policy and communication strategy for scaling up Zinc treatment for youth diarrhoeal illness, piloting child injury prevention model for low income countries during daily life and disasters, policy framework for multi hazards health facilities planning, A policy research on mapping poor and marginalized youth employment in Bangladesh and designing & implementing policy advocacy at national level for BRAC major programs are some of his significant contribution in the epistemology of development. He is now currently serving for the Practical Action, Bangladesh as Coordinator Knowledge Service (Operations).



## Bangladeshi Immigration in West Bengal, India: A Study of Characteristics and Adjustment Process with Special Reference to South 24 Parganas District

Ashok Kumar

Movement is an integral part of human existence. While talking about trans-border migration from Bangladesh to India, we are, however, aware that this is a controversial subject. The partition of Bengal in 1947 was the cruelest partition in the history of the world and caused forced illegal migration from erstwhile East Pakistan. It is estimated that there are about 16 million Bangladeshi nationals living in India illegally (Registrar General of India, Census 2001, New Delhi). The present study highlights a multidimensional, i.e. economic, political ethnic. From the historic point of view it has been realizing that primarily these Bangladeshi immigrants were brought to Eastern India for the fulfillment of economic needs, later on politicians utilized these immigrants as their supporting elements and further later it was made an issue of ethnic and religious sentiments. But the political importance is still predominates for the continuous flow of immigrants in West Bengal State of India. Being rising ethnic issue the immigrants adjustment in the host society becoming difficult. Not only illegal immigrants are facing difficult to adjust but also legal immigrants are facing problem in adjustment. The feeling of being foreigner and feeling of fear of communal riots and ethnic conflict is high among illegal immigrants. Also interaction at community and societal level and friendship pattern with local people is also weak among illegal immigrants. Most of the illegal immigrants are weakly adjusted or not adjusted at individual (psychological), communal and societal level. Most of the immigrant's adjustment process is in transition type and it is close to non-adjusted type. Experience of ethnic conflict, local language skill, status (legal/illegal) and educational level are the major determinants of the immigrant's adjustment process.

**Ashok Kumar** (ashok\_iips@yahoo.com) is a trained demographer and public health researcher. He has published more than eighteen papers/articles in national and international journals of repute. Added skills include: knowledge of designing randomized controlled trials on public health problems; developing longitudinal vital statistics data collection systems; preparation of results reports for government and development organisation; etc.



## Climate Induced Displacement and Livelihood Choices: Evidence from Slum Areas in Dhaka Metropolitan City

Meherun Ahmed

People of Bangladesh, particularly in the coastal areas face serious and relatively rapid alterations to ecological and social systems induced by climatic factors and are forced to adopt migration to cities as a coping strategy. Disasters such as floods, cyclones, erosion of land, tornados, arsenic contamination in ground water, water logging, salinity intrusion are intensifying gradually because of climate change and adding to the risk and vulnerability of the rural and extremely poor community. This paper focuses on the livelihood choices and labor market performances of displaced individuals for environmental reasons in contrast to economic migrants. Using a representative and random survey data from five slum areas in Dhaka Metropolitan city, I try to indentify the occupation choice, number of hours worked, the remuneration received and the overall economic well being of the environmentally displaced individuals. I also investigate whether the nature of climate induced displacement is temporary or permanent, ceteris paribus. The role of land holdings in origin, human capital, savings and access to credit for coping in a new, unfamiliar system of social protection is also analyzed. I find that some of the occupation choices in the informal sector are propelled by lack of credit and skill deficiency. There is no discernible difference between climate and economic migrants in terms of occupation choice but climate migrants work longer hours and have significantly less average monthly household income, well below the urban poverty line. They spend significantly less on food, and may face nutritional deficiency compared to the counter factual. The propensity of savings is lower for climate migrants. They are less likely to own any land and are more likely to finance their migration by eroding savings and assets. They are unlikely to return to their roots adding to the pressure on the urban metropolitan areas or cities.

**Meherun Ahmed** (meherun.ahmed@auw.edu.bd), Associate Professor of Economics, joined Asian University for Women (AUW) in 2010. She has received both her Ph.D. and M.A. in Economics from the University of Washington in Seattle, USA. Her research focuses on the microeconomic analysis of household behavior, with an emphasis on investment in education and health, crisis coping mechanisms, migration, poverty, as well as labor force supply. Before Joining AUW, she was an assistant professor at Carleton College in Minnesota, USA. She has worked for many international development agencies like the World Bank, The International Monetary Fund, International Organization of Migration and Institute of Microfinance.



## Moving from the margins: migration decisions amidst climate- and environment-related hazards in Bangladesh

Maxmillan Martin

Bangladesh is a country that sits at the heart of debates about the consequences of climate change, including migration of people affected by it. This paper probes to what extent climate- and environment-related hazards influence the decisions of villagers in Bangladesh to stay put or move of their place. It considers these hazards – including extreme events such as cyclones, droughts and floods – as proxies of what might happen in the future as a result of changing climate; and probes how people respond when their livelihoods are affected by these stresses and shocks. The qualitative analysis in this paper shows that villagers from three districts of Bangladesh affected by these hazards often migrate for better livelihoods. However, they usually do not associate their movement to the hazards even when they appear to indirectly affect their livelihoods. On the other hand, the quantitative analysis shows experiences of drought and cyclone appear to positively influence migration outside the district; while riverbank and coastal erosion as well as floods negatively influence such long-distance movement, though people affected by erosion tend to move locally. Logit models also suggest that though migration is driven by poverty and income needs, the poorest, especially those without any assets, are often unable to migrate outside the district. Whether people state it explicitly or not, migration can be interpreted as a strategy that helps them offset losses suffered in climatic and environmental stresses and shocks and be prepared better for future stresses and shocks. However, whether such migration leads to adaptation depends on the policy environment in the country. A text analysis of relevant policy documents, however, shows that though urban migration is an inevitable part of Bangladesh's economic growth, its role as a climate change adaptation strategy or its links with hazards and local vulnerabilities are often not acknowledged at a policy level. The paper argues that policies need to be more proactive so that migration does not become maladaptive or people unable to move out get trapped in places exposed to climate- and environment-related hazards.

**Maximillan Martin** ([maxmillanmartin@gmail.com](mailto:maxmillanmartin@gmail.com)) recently finished his doctoral work that builds on the research of his department colleagues on people making migration decisions in the face of changing climate, environment and hazard patterns. It also draws from his work in the media and with humanitarian groups. He held a position of Research Associate, Climate Change and Migration in Bangladesh — a CDKN-funded joint project of the University of Sussex and Refugee and Migratory Movements Research Unit, and a Research Officer position at Humanitarian Policy in a Changing Climate (Humpol) project of Institute of Development Studies.



## Climate change, migration and social resilience. Conceptual considerations and empirical insights from Thailand

Patrick Sakdapolrak, Harald Sterly

In the past few years, the discussion on climate change and migration has moved from simplistic and geo-deterministic comprehension captured in terms as “environmental refugees” to the more differentiated idea of “migration as adaptation”. Embedded in the ongoing debate, the paper has two objectives: First, it introduces translocal social resilience as a conceptual approach that captures on the one hand the complexity of the connectedness induced by migration (translocality) and on the other hand broadens the scope of how those left behind deal with risk (resilience). We argue that this conceptual development will enable a more comprehensive understanding of the migration-environment nexus. Secondly, the paper will outline the methodological implications of the approach, which includes among others the necessity for multi-sited fieldwork, the importance of a mixed-methods approach through which structures (e.g. of networks) as well as practices (e.g. translocal remitting) can be captured. Based on empirical research carried out in Thailand in the frame of the TransRe Project, the benefits and challenges of the translocal social resilience approach will be discussed and empirical insights will be presented. The paper presents findings in four interconnected fields: first of translocal networks of support and innovation; second of the related practices of migrants and the connected non-migrants, both in the places of origin and of destination; third the changes in household and community resilience in the three dimensions of coping, adaptation and transformation; and fourth the governance of the nexus of climate change adaptation and migration. Through a case study approach in different climatic regions, the connections between these four fields are traced.

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## Migrants and Natural Disasters: evidence from the 2011 floods in Thailand

Alessandra Bravi, Alexander Trupp, Katharina Schaur

The growing number of migrants affected by natural disasters in recent years has brought attention to the need to better integrate migrants into Disaster Risk Reduction (DRR) policies and practices. While there are several studies analyzing the impact of disasters on affected populations, limited empirical research has been conducted on their impact on migrants, in particular irregular migrants. The 2011 floods in Thailand were one of the most devastating floods in the history of the country and affected migrants in several regions. Our research is based on 55 semi-structured interviews conducted with migrants from Myanmar, Lao PDR, Cambodia and Vietnam affected by the flood and 37 interviews with national and international stakeholders working either on migration issues or disaster risk reduction. The paper analyses emergency mechanisms in place in 2011, their implementation, to what extent these included (or excluded) migrants and in what way government policies towards migrants shaped outcomes. Analysing a disaster which happened five years ago, we moreover are able to look at long-term consequences of the floods on migrants.

The paper on the one hand highlights that migrants' vulnerability to natural disasters is exacerbated by pre-existing factors, in particular their legal status, which is also connected to access to services and freedom of movement. Despite those vulnerabilities the crisis situation in some cases also enabled migrants to create new ways of supporting each other and the community where they lived and even finding new employment opportunities. Finally the interviews point to an increase in awareness among migrants and other stakeholders: migrants declared that after having experienced the floods are now more aware about the risk of floods and more familiar with the coping strategies at the same time stakeholders after the floods became more aware of the presence of migrants and their vulnerability during the crisis.

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**Katharina Schaur** is Junior Research Officer with the Migrants in Countries in Crises Project at the International Centre for Migration and Policy Development (ICMPD). Katharina holds an MA in Cultural and Social Anthropology from the University of Vienna. Her previous work has focused on health needs of elderly migrants and transnational engagement and integration.



## Temporal Dimensions of Weather Shocks and Migration

Nathalie Williams

Although existing empirical evidence convincingly shows that weather shocks such as floods and droughts influence migration around the globe, many details of this relationship remain unclear and some conflicting empirical results remain unexplained. In this article, we examine temporal dimensions of the weather-migration relationship in new detail using population registry data from rural Nepal and an event history approach that accounts for temporal clustering and potential confounders. We find migration responses up to five years after floods, droughts, heatwaves, and cool snaps, as well as differences in short- and long-term migration responses over time. Specifically, we find that temperature shocks are more influential than rain shocks, that effects on short-term migration are larger than on long-term migration, and that effects on long-term migration can be negative over short time horizons. These results support a multiphasic interpretation of climate-migration relationships in which households avoid costly and disruptive moves until other adaptation opportunities have been exhausted. The results also suggest that the previous focus of this literature on long-term moves that occur immediately after a shock is likely misplaced, and that future changes in weather patterns are likely to have enduring effects on migration. We have just accessed new data on the destinations of each migrant in our survey (within Nepal or the specific country if they moved internationally). We are analyzing this data now using multinomial regression models and expect to find further insights when both destinations and time length of migration are investigated in the same models.

**Nathalie Williams** (natw@uw.edu) is Associate Professor of International Studies and Sociology at the University of Washington. Her research primarily focuses on migration patterns, during periods of natural disaster, climate change, and armed conflict. Contrary to what is generally assumed, many, if not most people do not migrate during periods of crisis. Williams' work seeks to develop theoretical and empirical understandings of why some people migrate and many do not. She primarily uses statistical analysis of survey data and computational simulation modeling, grounded in intense ethnographic fieldwork in the areas she studies—Nepal, Thailand, and Cambodia.



## Re-writing geography, monetizing land and water: An inquiry into sound business sense

Gopal Krishna

This paper undertakes an inquiry into migration induced by structural intervention in Kosi sub basin, a part of Himalayan Ganga river basin in India and Nepal. It explores whether mega projects like Interlinking of Rivers (ILR) in South Asia, Three Gorges Dam, South-to-North Water Diversion in China and Initiative for Integration of Regional Infrastructure in South America (IIRSA) have factored in the lessons from past experiences which resulted in drainage crisis in South Asia and drying up of Aral sea. It examines the structural compulsions that uproot people, forests, wildlife, biodiversity and cause global warming in a business as usual manner. It probes whether or not nature's function of land building is still underway amidst efforts to stop rivers from its constant process of land building. Land and water are ecologically linked in a natural system called a watershed. The paper considers Himalayan watershed as a better reference point to comprehend the ecosystem and how artificial disruptions in the natural functions contributes to displacement. This is important because when watershed is examined both land and water has to be examined in the ecosystem in which they exist. In approaching a specific ecosystem there is a compelling logic to overcome the truncated approach of dealing with land and water as separate compartments. The paper probes the implications of the diversion of rivers through the proposed Interlinking of rivers project and the downstream concerns in the matter of proposed diversion of Brahmaputra which seem to be an exercise akin to re-writing the geography of the Himalayan watershed. This paper argues that land and water policies of countries of Himalayan watershed vis-à-vis business enterprises merits review along with their relationship with proposed water grid, energy grid, infrastructure grid and data grid in the Himalayan watershed in particular. It infers that monetization of land and water has adverse consequences for the ecological space which is the substratum of existence. It concludes that the patronage which unsound business enterprises have gained has turned sane engineering interventions into engineered interventions that do not make sound business sense.

Besides being a researcher on environmental lawlessness and emergence of a surveillance empire of commercial cars, **Gopal Krishna** (1715krishna@gmail.com) is the editor of [www.toxicwatch.org](http://www.toxicwatch.org). He has done his PhD from Jawaharlal Nehru University on corporate crimes, public institutions and their accountability and Bhopal disaster. He has briefed the Parliamentary Standing Committees on Science, Technology, Environment and Forests, Finance, Food, Consumer Affairs and Public Distribution besides German Parliamentary Committee on Transport, a Green Left European Parliamentarian's Group and UN's Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes.



## Climate Induced Migration and Urban Vulnerability in Eastern Himalayas

Sohel Firdos

This study is premised on the fact that the Eastern Himalayas has started feeling the impact of erosion in the resource base, loss of livelihoods and an increase in the natural disaster. This has triggered the movement of population from rural to urban areas at an increasing rate leading to the rise in the population of towns/cities located on the hills that are ecologically fragile and economically less resilient and with a poor urban infrastructure. Moreover, the urban governance in such towns/cities is not equipped to provide basic services to the growing urban population. This study also argues that the erosion of livelihoods in the rural areas and its impact on urbanization needs to be placed in the context of changing gender relations in conjunction with developmental and environmental issues. As livelihoods of a very large majority of women in the region are highly dependent on environmental resources, any adverse change in the environment is going to affect the women disproportionately. While analysing the adaptation capability of such hill towns/cities in response to the ever increasing population, we observed the deficiencies of current systems for accommodating rapid urbanization that is sensitive to gender, including ineffective land use, inappropriate and poorly implemented regulatory systems, poor disaster resistance of the housing stock, ineffective infrastructure planning and funding, and poorly functioning land markets. Therefore the challenge is to add urgency to the well-understood demand for increased urban investments and planning, which will allow a healthier and more sustainable urban environment to emerge.

**Dr. Sohel Firdos** (sfirdos@cus.ac.in) is working as a Associate Professor in the Department of Geography, Sikkim University, INDIA. His research focuses on understanding the interrelationship between the environmental resources, economy and mobility in India. Presently, he has been working on a project to understand population mobility caused by environmental change in the Eastern Himalayas. He was in the editorial team of a volume "Climate Change and Sustainability in Mountain Areas: Scope and Challenges for Regional Cooperation". His research articles have found place in a number of journals.



## Climate change impact on migration in high land Himalaya: a case study of Nepal

Ashutosh Mohanty

Last one decades it is well known fact that Climate change has been significant factor towards large scale migration in High land Himalaya specifically Nepal . There is a knowledge gap regarding migration in mountain regions, where exposure to environmental stress is the norm, and any increase in such stresses can be expected to have a marked effect on the lives and livelihood of mountain people. At present, there is little understanding of the process through which the impacts of water hazards influence the choice of household response, including the decision to migrate for work; and the role of remittances in shaping the adaptive capacity of recipient household. This study aimed to assess the influence of water hazards on the migration behavior and the role of remittances on the adaptive capacity of recipient households. This paper frames migration as part of an adaptation response to climate change impacts to natural resource condition and environmental hazards. Thresholds will be reached by communities after which migration will become a vital component of an effective adaptation response. Such changes to migration patterns have the potential to undermine migration policy unless appropriate preparations are undertaken. This paper describes an approach to assist researchers to frame how climate change will influence migration by critically analysing how thresholds of fundamental change to migration patterns could be identified, primarily in relation to Nepal case study. Future policy for internal and international migration could be guided by the analysis of such thresholds of non-linear migration and resourced effectively to ensure that socio-economic and humanitarian outcomes are maximized. This paper briefly discusses some of the major findings, policy recommendations and adoption strategies for climate induced Migration in Nepal.

**Dr. Ashutosh Mohanty** (drashutosh@gmail.com), working as Senior Fellow, Research and Development Department of Centre for Environment and Economic Development (Regional Research Centre), New Delhi, India and his previous assignment he was he is and Associate Professor and Director of Truman Graduate School-Public Administration (Affairs) joint Graduate School Programme with University of Missouri U. S. A. He did his PhD in Environmental Governance under Public Administration Department at Utkal University, India and MSc. in Urban Environmental Management at Asian Institute of Technology, Thailand. He was also served as Visiting faculty for Master's studies at International humanitarian and social work programme, Department of Christian Social Work, Palacký University Olomouc, Czech Republic and served as Regional Capacity Development Officer at International Centre for Integrated Mountain Development (ICIMOD), Nepal.



## Seasonal pattern of temporary labour migration, and survival strategy: A perspective of agro-climatic region in India

Imtiyaz Ali

The issue of the seasonal pattern of temporary labour migration and survival strategy has rarely been studied at a macro level from researchers and policy makers despite its high prevalence in India. Drawing from the 64th round of Indian National Sample Survey, this paper aims to explore the influence of rainfall variability and crops failure on the seasonal pattern of temporary labour migration. It is estimated that 12.6 million temporary labour migrants in India. Seasonality has been an important feature of temporary migration. The paper shows that a vast disparity exists in the pattern of temporary and seasonal migration across the different agro-climatic region, and as a result, there is a tendency among poor people to migrate when there is a lull in agricultural work. The results show that in the western Himalayan region, the highest seasonal pattern of temporary migration (41%) occurs during sub round July-September, which is mainly the rice sowing season in most of the regions due to the monsoon-induced rainy season. In the trans Gangetic plains region, the highest proportion of migrants is observed during October-December (39%). In Gujarat plains region largest movement of temporary migrants (40%) is observed during April - June. It also analysis the characteristics of temporary and seasonal migrants, the issue of temporary and seasonal migration as a successful or failure strategy to adopt to agro-climatic change, and the related policy issues. Keywords: temporary and seasonal labour migration; survival strategy; rainfall variability; agro-climatic region Biographical I am currently pursuing Ph.D. in population studies from International Institute for Population Sciences (IIPS) Mumbai, India. He is exposed to various statistical models; moreover, he learned handling large scale data set. Furthermore, his understanding in migration, health and various aspects of population issues that he learned from course work in MPS and M.Phil and his specialization in international migration and remittances can help immensely in his future research endeavours in the field of migration and public health.

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## Diversify and out-migrate: Responses of farm households to environmental changes in rural Cauvery delta region, Tamil Nadu, India

Jyoti Nair

Seasonality and environmental triggers such as drought or flood and their impact on rural, agrarian households have been dealt with extensively in the empirical literature on livelihoods, environment and development. Diversification of income sources and seasonal out-migration are strategies frequently employed by rural households to manage their livelihoods, and cope with stresses and shocks. However, abandoning agriculture and out-migrating permanently is a significant decision on the part of the farm household. In this ongoing study, we examine the social and environmental factors that determine such decisions. We take the case of farm households in rural Cauvery delta region, Tamil Nadu, India. From preliminary field investigations we found that households have been experiencing increased frequency of drought, increased sunshine intensity, uncertain rainfall and salinization of ground water and soil. There has been loss in crop yield primarily attributed to soil salinity and variation in rainfall. Owing to a general feeling that farming in itself is not able to fulfill survival requirements, there is an increasing trend of moving out of agriculture, diversifying and out-migrating. While the diversify and out-migrate strategy in the initial period was driven mainly by wage differential, it is increasingly being triggered by environmental changes mentioned above and subsequent disruption of livelihoods. In our study, we look at the socio-economic determinants of diversification and out-migration, which are relatively well documented, as well as the biophysical determinants, looking at the longer term trends and the responses by households in the region. We aim to contribute to the discussions on the impacts of long term environmental changes on livelihoods and well-being by emphasizing 'slow' triggers such as climatic variations and loss of biophysical attributes over the long term, in contrast to sudden and unexpected triggers like flood or drought.

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## Gendered agricultural and water management in polders of Bangladesh in the midst of migration and environmental challenges

Panchali Saikia, Marie-Charlotte Buisson

Bangladesh coastal region is one of the most vulnerable regions in the world, prone to sea level rise, saline water intrusion, prolonged water logging, floods, reduced freshwater flow and natural calamities like cyclones or tidal surges. The occurrence of these events is already exacerbated as a result of the climate change impacts. These hazards are causing serious disruptions, posing threats to the productive systems, agriculture, aquaculture, and other rural livelihood, further affecting the socio-economic condition of the coastal inhabitants. It has largely impacted the rural households in the region, who are dependent on these productive systems for income and food and resulted in expanding seasonal and semi-permanent out-migration of men to earn cash income. As a result, women commonly left behind take on additional tasks beyond their traditional sphere and have to diversify household's income and food sources. Based on two quantitative surveys conducted among coastal households in Khulna region in 2015, qualitative data and extensive field work, we analyse the time allocation of women in agriculture, water management and domestic activities. The results compare the time allocation of women in households based on the presence or absence of males and are also disaggregated by the occurrence of environmental challenges. We establish that with women's exposure to increasing responsibilities in the agricultural sector and additionally carrying out other household chores, and under the circumstances of access to limited resources and climate change hazards, it has become quite challenging for them to meet these basic needs for their families. Therefore a gender inclusive, sustainable and efficient water governance and management is critical to improve the livelihood and socio-economic condition of the inhabitants in the polders.

**Panchali Saikia** (P.Saikia@cgiar.org) has a Masters in Political Science from University of Delhi, India and her research interest covers trans-boundary water governance and management, gender issues in water management, water policy and institutions, human migration and regional cooperation. Panchali has extensive field experiences in the regions of South Asia (India, Nepal and Bangladesh) and Southeast Asia (Thailand) and Central Asia. Her professional experience includes developing project proposals, conducting surveys, coordinating and supervising both qualitative and quantitative surveys, designing survey guides, training enumerators, training community groups at grass-root level, stakeholders engagement, technical report writing, research publications, policy analysis, data analysis (SPSS), working on gender analytical tools and methods. She is currently working as a Scientific Officer-Social Science with IWMI, New Delhi since 2013.

**Marie-Charlotte Buisson's** research interests cover impact evaluation, agricultural microeconomics, natural resources management, vulnerability and households' behaviour. She holds a PhD in Economics from the CERDI (Studies and Research Centre on International Development) in France. Along with her research, Marie-Charlotte has conducted several impact evaluations and socio-economic surveys around the world (Africa, Central Asia, South-East Asia) with the purpose of enlightening the decision making process at the micro level in order to understand how vulnerability may be alleviated. Marie-Charlotte joined IWMI, New-Delhi office, in June 2012, and is now International Researcher in Economics and Impact Evaluation. She leads several research projects on community-led organizations for improved water access and better water governance.





# Theoretical perspectives



## Geography of 25 years of research on the migration environment nexus

Etienne Piguet, Raoul Kaenzig, Jérémie Guélat

This paper aims to present the geography of research in the field of climate-induced migration over the last 25 years. The Climig database is at the core of the paper. It consists in an exhaustive bibliographic database of approximately 1100 scientific papers and books on climate change and migration, among them more than 400 empirical case studies. We analyze this invaluable material and show the uneven geography of research in terms of field case studies but also in terms of researchers' academic affiliation and funding's origin. Mapping the case studies locations worldwide allows us to point toward research blind spots and, by contrast, to identify "overstudied" areas. We also analyze the methods used in the studies to understand which ones are most or least used in different locations. Finally, we identify the different types of environmental hazards linked to migration according to case studies locations. This analysis allows us to outline future directions of research and to suggest some critical considerations about our field of study.

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## Barrier or breakthrough: complex fragmentation of climate change - migration nexus

Selena Lee

Climate change is expected to become the primary driver of migration in 21st century. While migration in the context of adaptation has increasingly gained its rightful ascendancy, it seems to be locked-in the 'field of formation' where absence of common framework and incoherence in advocacy restrain further progress. The research aims to explicate such crosscutting fractures through the sequence of two methodologies: 1) Deductive qualitative analysis identified the dominant gaps in and between three dimensions: how migration as adaptation strategy is framed, evaluated and approached due to involved actors' operational mandate (donor - recipient of adaptation), profession (academic – practitioner), and expertise (adaptation - migration as adaptation - migration). 2) Semi-structure interview: Comparative analysis of the finding from the in-depth expert interview addressing the detected three gaps revealed more nuanced fractures that exist within and amongst the three gaps and reasons behind them. It is essential that such fragmentation is acknowledged and understood to promote the idea forward but it need not to be eliminated. Rather, considering the complexities and sensitivities attached the topic, the paper argues that the existing fractures can and should be harnessed to construct a flexible governance as an effective, if not only, breakthrough strategy. This reframing of the fragmentary governance to its benefits can be facilitated by strategy promotion of both the climate change adaptation and migration communities: such as broadening the concept of adaptation toward more inclusive concepts like resilience and giving weight to human rights approach in migration. In all, the same logic used for promoting migration as adaptation can be applied in addressing the fractures that abound in climate change and migration nexus: if they are well managed, they need not be a challenge but a great opportunity.

**Selena Lee** (golden.jhl91@gmail.com). As a final fulfilment for my Master's degree in Environment and Development, I am writing a paper that looks into migration in the context of adaptation. As a nascent initiative, the conceptual frameworks and policy responses towards it are still highly fragmented. The paper argues that instead of eliminating the gaps, they should be harnessed to construct a flexible governance as a breakthrough strategy. As I hope to pursue PhD in climate change – migration nexus, this paper would serve as a springboard for my future research on this vibrant topic.



## Geographies of Dispossession to Repossession in context of Climate Displacements- Revisiting 'Bhoodan Movement'

Sonali Narang

The geopolitics of climate change in the imaginable future will continue to oscillate between various imaginative geographies of fear and counter-imaginative geographies of hope, depending upon their power-political rhetorical agendas. It is worthwhile to explore the prospects for the geographies of hope and the role they could possibly play in approaching the issue of climate induced displacements from the angle of human security and human rights of the socially disadvantaged and displaced of Global South. The impact of Climate migration in South Asia will lead to geographies of dispossession of land and create 'spaces of exception' and 'spaces of exclusion'. Such dispossession will create new 'global souls' [climate Refugees] and new social-cultural geographies of identity determined and organized on the basis of catastrophic climatic events. The momentous rejoinder to climate change will require sacrifices, strong regional Institutions with accurate governance and cooperation across borders. Hitherto, the land management policies of the State in South Asia have failed in supporting the commons and the livelihoods options of the citizens and non-citizens alike. With emerging discourse of climate change new land management policies are indispensable that will further demand committed leadership and powerful regulation. The goal of this paper is to analyse the relevance of Bhoodan movement as an institution to govern the common property management and the use of natural resources in a sustainable way. It is a process of receiving land as a gift, distribution of land to landless and plans for construction and management of land. This paper will further look into how this concept can be used inter-state or intra-state within South Asia as 'geographies of repossession' towards climate displaced community? Can this be applied to Climate refugees and understand that whether it would be able to provide land and dignity to millions who will be crossing edge in search of protected lands and livelihood?. Can this fulfill hope to those who are dispossessed, disadvantage and homeless in their struggle against Climate geographies?

**Sonali Narang** (snarang68@gmail.com), Reserach Scholar Center for the study of geopolitics, Panjab University Chandigarh. I did Masters, M/Phil, PhD on Climate Change and human migration. My work look at the various aspects of climate change from critical geopolitical perspective how the Formal, Practical and Popular Geopolitics are in a process of constructing climate knowledge by using climate scenarios and narratives. I believe that a critical social science intervention in the nascent discourse of 'climate change migration' is needed, in order to uncover and analyze the political uses and abuses of climate fear, and growing securitization and militarization of climate change policy and responses. I consider it is important to understand and describe the Climate Justice and ethical work that the idea of climate change is currently performing across different worlds. My research interests are therefore explore role of geopolitics of climate fear in B/ordering practices in India and Bangladesh, especially through the deployment of various official and popular narratives of 'climate migration'. I look at how the Counter-Imaginative Geographies are growing against the dominant geographies of power, practice and representation.



## Environmentally-related migration in the digital age

Ingrid Boas

Whilst much scholarly research has been done on environmentally-related migration, a blind spot remains when information and communication technologies (ICTs) come into the equation. This whilst ICTs – such as mobile phones and smart phones – and related information exchange are playing a crucial role in decisions and practices of migrants. The central aim of this research is to provide a fundamental understanding of the ways in which ICT-enabled information exchange shapes practices and flows of environmentally-related migration. Through ethnographic methods, the research will inductively build a novel conceptual framework that can demonstrate relations between ICT-usage, information exchange and practices of environmentally-related migration. This will also include an analysis of the content of the information exchanged via ICTs to examine how and to what degree migrants communicate about environmental events. This simultaneously provides a new method to identify the role that the environment plays in these migration processes compared to other socio-economic drivers of migration. The research is conducted via two case-studies: Bangladesh and Kenya. In Bangladesh it is analyzed how ICT-enabled information exchange shapes migration in the context of floods and storms. In Kenya this is analyzed in the context of drought. Fieldwork will focus on migration in and from Barisal and Chittagong divisions in Bangladesh, and on migration in and from Baringo and Samburu counties in Kenya. This includes travelling with migrants to key sites, such as nearby cities and (cross)border villages, to study the role of ICT-enabled information exchange in their migration practices.

**Ingrid Boas** ([ingrid.boas@wur.nl](mailto:ingrid.boas@wur.nl)) is Assistant Professor at the Environmental Policy Group at Wageningen University. Ingrid's research is based in the field of environmental change and governance, with a focus on the topics of environmentally-induced migration, climate security and urban resilience approached through the lens of the digital age. She has recently been awarded a personal grant (VENI, NWO) on the subject of environmentally-related migration in the digital age, which she will work on from October 2016-2020, together with other related projects focussed on the role of information and communication technologies in urban and climate governance.



## Climate change and migration in the UK press

Alex Randall

This paper explores who the media turn to when writing about climate linked migration. The research examines 12 years of media coverage from UK outlets and analyses hundreds of news articles that have focused on climate linked migration. The research was carried out to inform policy advocacy on climate linked migration and to give advocates and campaigners a clearer picture of the media landscape in which they are operating. The research focuses on identifying the sources journalists turn to when writing about climate-linked migration. It examines the experts, scientists, academics, activists, government officials and affected individuals that journalists quote in their stories. Quantitative methods were used to reveal hundreds of different actors in the media discourse. Analysis of the data produced by these methods reveals the very narrow focus the UK media has taken when reporting on this issue. Looking at the sources the media has turned to demonstrates a focus on dramatic cross-border forced movement and a neglect of the other kinds of mobility that are more common in this context. Analysis of the data also reveals narrow focus on a small number of geographic locations, at the expense of reporting on the plurality of locations that may be affected by climate-linked migration. The paper concludes that the small number of sources used by journalists has created a distorted picture of climate-linked migration amongst their readership.

**Alex Randall** ([alex.randall@climateoutreach.org](mailto:alex.randall@climateoutreach.org)) is project manager of the Climate and Migration Coalition. The coalition is a network of refugee and migration rights NGOs working together on issues around migration and displacement linked to environmental change. Alex has written extensively on climate change and migration. He was lead author 'Moving Stories' a publication based on the testimonies of people affected by climate change from across the world. He is also author / producer of 'Syria and Climate Change: this the media get it right?' and interactive web documentary examining the links between climate change and the conflict in Syria.



# Risk perception and reduction



## Securing indigenous land right(s) as climate change mitigation & adaption measures

Alexandra Tomaselli

Indigenous peoples are among the most vulnerable sectors of the society in the face of climate change since many (if not all) of them have a profound and spiritual relationship with the(ir) land. Paradoxically, they are among those who have caused less climate change effects. No instrument explicitly protects indigenous peoples from climate change-related harms. This is primarily due to the nature of climate change, which is an extremely prismatic and indistinct phenomenon. Indeed, it is extremely arduous to find, or even to claim, a causal nexus between a climate change-related harm and a potential indigenous (human) rights violation in the legal sense. Although indigenous peoples have always been at the forefront in the international environmental debates, they have received poor consideration in the design of international environmental and climate change law regimes. Recently, indigenous traditional knowledge has been cited as one of the “adaptation prospect” by the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, and as basis and guidance for “adaptation action” by Art.7 of the Paris Agreement. In various parts of the worlds, indigenous peoples have already applied their traditional knowledge and advanced innovative strategies of climate change adaptation (e.g., by fixing soil surface nutrients against water runoffs in Africa). In addition, indigenous peoples’ land management does not include land destruction or extreme land exploitation since their existence may depend on the(ir) land. Indeed, indigenous land right(s), and their co-related rights, are established international (human rights) law standards in both treaties and international jurisprudence. Such rights are widely recognized –albeit often poorly implemented– at domestic level too. Against this background, this paper thus aims to explore the potential of indigenous land right(s) as mitigation and adaptation measures, and as an (indirect) safeguard from climate change-related harms.

**Alexandra Tomaselli** ([alexandra.tomaselli@eurac.edu](mailto:alexandra.tomaselli@eurac.edu)) is a (post-doc) Senior Researcher at the Institute for Minority Rights of the European Academy Bolzano/Bozen – EURAC (Italy), and a Teaching Fellow in Law at the Faculty of Law of the University of Graz (Austria). Since 2007, she has been working in international cooperation and research projects in Europe, South Asia and Latin America working closely with indigenous communities. At EURAC, inter alia, she coordinates the program “Indigenous Peoples: Political Participation, Movements & Land Disputes – InPLEs”.



## Reducing Relocation Risk in Urban Areas

Cassidy Johnson, Garima Jain, Allan Lavell, Charlotte Barrow, Shuaib Lwasa

Interactions between environment, migration and politics can be observed in densely-populated urban centres that are exposed to multiple climate-related hazards. Environmental changes exacerbated by the changing climate and unplanned urban growth coupled with floods, heat waves, cyclones, landslides and other events often have significant impacts on people's lives and livelihoods, particularly those of the poor.

In an effort to reduce people's exposure to hazards, many national and local governments are aiming to move people from hazardous urban areas. Displacement or resettlement can occur as part of national level programmes to move people out of high-risk areas, or as part of a local government development plan. This is often accompanied by the upgrading of vacated areas to reduce risk, or to change land use, with implications for those left behind or still living in the surrounding area. Relocation and resettlement may reduce a region's future climate-related disaster risk, but can also increase people's poverty and vulnerability. The processes for making and implementing decisions on post-disaster relocation, pre-emptive resettlement and on-site upgrading play a large part in determining whether outcomes are socially just, and whether they actually reduce future risks for individuals, urban regions and society as a whole. While urban resettlement programmes are becoming widespread across urban centres in Asia, Africa and Latin America, the social and economic impacts of resettlement and relocation on individuals, society and urban regions are not well understood either by experts or by those enacting them.

This paper presents research carried out in the last 18 months examining social and economic implications of climate-risk related resettlement and relocation policies in cities across India, Uganda, Peru, Mexico, and Colombia. It analyses the political, economic and institutional contexts in which resettlement takes place; the costs and benefits of resettlement from both the government and individual's perspective; and how resettlement impacts people's well-being and resilience over different time frames. It finds that shaping future urban growth by controlling settlement of people in hazardous areas is more beneficial than resettlement. Resettlement is only successful if it can tackle the underlying drivers of why people live in hazardous areas in the first place.

The paper authors are part of a research project "Reducing Relocation Risks in Urban Areas," funded by the Climate and Development Knowledge Network (CDKN). Dr **Cassidy Johnson** ([cassidy.johnson@ucl.ac.uk](mailto:cassidy.johnson@ucl.ac.uk)) is Senior Lecturer at the Bartlett Development Planning Unit, UCL, where she researches and teaches about disaster risk, post-disaster recovery and climate change adaptation. Her academic interests are linked by a commitment to improve the quality of life and livelihoods of low-income groups living in urban areas. Her research contributes to the area of disaster risk reduction and recovery and to the role of local governments and civil society in this – and to integrating an understanding of disaster-risk into development. This has encompassed issues of urban planning, housing quality, building code regulations, informal settlements (and upgrading) and evictions. Her work engages internationally with policy makers as well as with local communities and has worked in more than ten countries across Asia and Africa, including Turkey, Thailand, Bangladesh, India, Tanzania, Uganda, Malawi



## Capturing risk perception as a driver for decision

Maria Manez Costa, Cheney Shreve, Maria Carmona

When it comes to environmental extreme events and which decisions to make regarding their management, including decisions on migration in cases in which this social transformative process is the only alternative, risk perception is the main driver. Human beings understand the world around in such a way that they recognise the environmental stimuli and respond to these stimuli through actions (Otara, 2011). The mental model that people have about risk works as a lens used to see how new information is evaluated, how it is perceived (Jungermann, 1988). All these mental models are influenced by communication processes and cultural backgrounds (Morgan, 2001). Factors such as knowledge, experience, values, attitudes and feelings influence the judgement of people about the significance of risks (Slovic, 1987). And those factors influence the perception of the risk differently depending on the culture, which encompasses all these factors mentioned. With this study we make present how important the analysis of risk perception is as the first step in the consideration of a threat and how this is dependent on internal, personalized, intuitive and contextual understanding of individuals acquired over time through social interactions and experiences. Reactions to environmental policies are therefore directly linked to the risk perceived. Consequently, capturing the risk perception of the population at risk and analysing the attached decisions to it might facilitate the management of environmental extreme events by the pro-active development of risk management policies including the insights of those analyses.

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## The socio-economic hazards in Haiti as a consequence of the environmental changes

Ivana Dancáková, Barbora Janubová

The paper deals with the impact of the environmental changes on the migration flows and socio-economic aspects of life in the Caribbean. We concentrate on the internal migration as the consequence of the extensive environmental degradation in one of the most vulnerable country of the region – Haiti. Haiti is exposed to both types of climate changes' processes, the slow-onset as well as the sudden-onset. In the paper, we examine climate changes on the environment and their impact on the internal and external migration to urban areas. The second part reviews the ability of displaced persons to adapt in urban areas. We examine certain social and economic aspects, such as rise of poverty and all dimensions of inequality, especially the issue of social exclusion and weak access to basic services (water, electricity, and sanitation) as well as access to education, health care and employment. The aim of the article is to define the most significant impacts caused by the environmental changes and to analyse the ability of Haiti, the least developed country of the region, to face them and improve living conditions in order to reach the sustainable development for its citizens.

The authors are PhD. students of the second year in the International Economic Relations at the Faculty of International Relations of the University of Economics in Bratislava. **Ivana Dancáková** (ivana.dancakova@euba.sk) focuses on the research of the environmental migration and with the migration and the climate changes related topics. **Barbora Janubová** deals with the income inequality in Latin America in context of the economic growth. Because this region is rich in natural resources, the solution of environmental issues together with all aspects of inequality seems to be a key factor which may contribute to sustainable development in the future.





# Africa



## Climate change adaption and tilapia farming in the south Dayi district: a case study of fish farming in Kpeve Tornu

Conrad Kyei-Mensah, Rosina Kyerematen

Fish farming is becoming a huge economic activity along the Volta Lake, employing a lot of people who are not necessarily residents of such communities. People find this activity as an alternative to crop production which is reducing in yield due to erratic rainfall regimes. On this basis, this study looked at the economic significance of Tilapia farming, its environmental implications, and examined the best approaches for undertaking Tilapia production as a preferred adaptation strategy against the impacts of climate change in Kpeve Tornu of the South Dayi District in the Volta Region of Ghana. The study undertook an onsite production-stage experiment involving cage preparation, stocking of fingerlings, feeding, maturity and sale of Tilapia to assess the economic and environmental implications of these activities to the farmers and the Volta Lake respectively. Three Focus Group Discussions were held, and conducted five key informant interviews as a way of data triangulation to validate the three data sets. Results from this study revealed that, the cost of operating a single cage of Tilapia is relatively expensive but yields higher returns after sale, making participants determined to expand the Tilapia farming. Also, the fish feed were observed to be high in protein with the potential of increasing the biological properties (Eutrophication) of the Lake. In response to the health of the Lake, a more organic feed was recommended to safeguard the Lake and enhance Tilapia farming.

**Conrad Kyei-Mensah** (conradkyeimensah@yahoo.com) is a researcher from the climate change and sustainable development programme of the University of Ghana. He holds BSc and MPhil in Tourism Management and Climate Change and Sustainable Development respectively. He has works on economic impacts of ecotourism development, adoption of EbA approach in the face of climate change, and suggesting EbA approach in restoring the Korle Lagoon.



## **'Rural-rural migration from Northern Ghana to Brong Ahafo's 'transition zone': Assessing the potential and limitations of migration to 'agricultural frontiers' as an 'adaptation' to environmental change'**

Jon Sward

North-South internal migration flows in Ghana have long been influenced at least in part by climatic conditions in the country. In the case of migration from Northern Ghana to Brong Ahafo Region in central Ghana, in particular, land scarcity in the north is reported by van der Geest (2011) as a key reason for Dagaba out-migration. This finding was echoed in my recent research in Brong Ahafo at three 'settler' communities of migrant farmers from Northern Ghana situated in different districts across the region. Additionally, I found that migrant livelihood outcomes at destination were also highly sensitive to environmental factors (including rainfall variability, bushfires, and declining soil quality), pointing to the need to focus on how environmental conditions affect the potential for migration to act as a form of adaptation to climate change at both ends of the migratory chain. In this context, different livelihood outcomes at destination also imply different potential 'adaptive' pathways for migrant farmers, based on their level of access to financial, social or other forms of capital. In my research in Brong Ahafo, migrant livelihood outcomes were highly stratified across the case study sites, and better capitalized farmers were able to invest in more diverse livelihood portfolios that in turn made them more resilient to environmental variability at their migration destinations.

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## Climate Change and Migration Dynamics of cattle farmer in southwestern Nigeria

Ayansina Ayanlade

This study aims at examining the climate change as the major drivers of migration of cattle farmers in the southwestern part of Nigeria. The study focused on both forced and voluntary migration of cattle farmers. Using mixed method approach, the study will assess the climate variability in the study area over the past four decades and investigate the level of awareness and sensitivities of local farmers' to climate variability/change. The major goal of the study is to evaluate the key factors that determine cattle farmers to move from one location to another as a preference mean for selected adaptation to climate change. Consequently appraise whether particular perceptions of climate change/variability are consistent with climatic trend analysis. The study focuses on two major research problems: the sensitivity of rural farmers to climate change, and their adaptive capacity to the extreme weather events. In this research, cattle farmers awareness were seen as science-driven assessments that estimate potential climate impacts to policy-driven assessments, which consequently recommend specific. Vulnerability to natural hazards and gradual climate-driven environmental changes are all linked to migration. Factor such as family and community networks, historical ties, proximity, and ease of access were used to determine where cattle farmer migrate to during extreme weather events to get good pasture for their livestock. The major findings of this study is that though, campaign towards a behavioural and policy change as a result of change in climate may be a long term subject, creating awareness of the frequency extreme weather events needs to be addressed expeditiously in rural areas in the Southwestern part of Nigeria.

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## Impacts and responses to flood: a case study of farmers in Oke-Ogun region of Oyo state, Nigeria

Sunday Opeyemi Okeleye, Félix Olorunfemi, Jean Mianikpo Sogbedji, Mawuli Aziadekey

The frequency and severity of floods in Nigeria have increased considerably in recent years. Oke-Ogun Area of Oyo State, which is widely known as the food basket of South-Western Nigeria, is prone to seasonal flooding with the attendant impacts on the people who are predominantly farmers. This study was carried out to assess the impacts of flood disasters on farmers of Oke-Ogun Region and their responses to these impacts. The data collected through in-depth interview, structured questionnaire, Focused Group Discussions and hand held GPS were subjected to analysis, using descriptive and inferential statistics. The results reveal that farmland's proximity to river/stream (>50%), limited drainage system, frequent heavy rainfall (>80%); limited supports from external bodies following flooding (<20%) are some of the factors that make the farmers highly vulnerable to flood disasters. Furthermore, the study showed that the farmers have very low coping mechanisms as most of them do not have access to insurance facilities and do lack timely and precise flood early warning systems, flood local signs and support from government. They rely more on support from family. The study established a significant inverse relationship between farmers' vulnerabilities and their livelihoods at 0.05 level of confidence. Given the low response capability of farmers and the attendant erosion of farmers' livelihood, the study recommended that government and relevant agencies should provide measures to mitigate and reduce the impacts of flooding on farmers. Key Words: Vulnerability, flood disasters, farmers' livelihoods, coping mechanisms.

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## The state of land grabbing viz-a-viz peasant farming in the Awutu Senya and Gomoa East districts of Ghana

Daniel Adu Ankrah

Exponential population growths in the urban areas lead to rippling negative effects in peri-urban areas. The immediate need for raw materials such as sand for building and available land leads to uncontrolled rate of land grabbing. This study examined the drivers of land grabbing in the Gomoa East and Awutu Senya Districts of the Central region of Ghana assuming an alarming proportion. This study made use of qualitative methods involving key Informant Interviews and Focus Group Discussions by interviewing over 100 small sale farmers. The finding of the study showed that population growth coupled with the associated need for houses has made the real estate sector become vibrant. The real estate industry players purchase large tracts of fertile agricultural lands for real estates. There is an accompanying practice of also excavating the fertile agricultural lands for sand which is used for building thereby leading to massive uncontrolled sand winning activities. Most of the sand winners do not reclaim the land as requested by the district assemblies. Affected farmers are not compensated when their lands are excavated through the sand winning activities. The districts assemblies responsible for planning and land use policy have no control over the current land grabbing activities. This trend is displacing most farmers off their traditional agro-based livelihoods. The chiefs and some family heads who are land owners have no land use plan over the available lands in the two districts thereby leading to abuse of the existing lands. The study therefore proposes that the districts assemblies collect a fee for reclamation of the lands that are sand wined. In addition there should be a land use policy by the two districts involving the farmers, chiefs and family heads to properly plan and demarcate lands for solely agricultural activities in what is known as land banks.

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## Climate Change Migration and Internal Remittances: A Missing Opportunity

Issah Justice Musah Surugu

The Paris, COP 21 recognizes the impact of climate change on migration. Many researches have recently sprung up in an attempt to explain the nuances related to climate change and migration. This paper contributes to this growing trend and examines how climate change migrants' uses social networks to remit their families internally. Though evidence abounds for internal remittances there is apparent neglect within the migration and policy literature. We makes a novel contribution to literature in the paper and argued that internal remittances have rather proven to be essential for the poor, for improving their livelihood access and increasing their access to economic opportunities. The following research question were used to guide the entire study: How do climate change migrants remit internally since the cost of using formal processes is costly and non-attractive, to what extent have social network among climate migrants have proven (non)favorable for remitting, and finally what are the challenges climate change migrants faces in remitting internally. The basis of our departure in this paper is that, it is evidently true, that many families that travel abroad (from global south to global north) appears to be above the poverty line and hence their remittances have less impact for poverty reduction, financial inclusion, access to education-health-livelihoods. However migrants within the same territorial area (from rural to urban areas, from one country to neighboring country etc) appears to be within the poverty zoon and hence their remittances have significant implication for economic growth and reduction in extreme poverty. Case evidences from key informants provide empirical support to this argument. Through the interpretive research paradigm, the article interviewed 35 respondents and conducted 4 focus group discussions across two administrative regions of Ghana.

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## The Influence of Climate Variability on Internal Migration Flows in South Africa

Marina Mastrorillo, Rachel Licker, Pratikshya Bohra-Mishra, Giorgio Fagiolo, Lyndon Estes, Michael Oppenheimer

This work investigates the impact of climate variability on internal migration flows in post-apartheid South Africa. We combine information from South African censuses and climatic data to build a panel database covering the waves 1997-2001 and 2007-2011. The database enables the examination of the effect of spatiotemporal variability in temperature and precipitation on inter-district migration flows defined by five-year intervals. We employ a gravity approach where bilateral migration flows are explained by climate variability at the origin, along with a number of geographic, socio-economic and demographic factors traditionally identified as potential drivers of migration. Overall, we find that an increase in positive temperature extremes as well as positive and negative excess rainfall at the origin act as a push effect and enhance out-migration. However, the significance of the effect of climate on migration greatly varies by migrant characteristics. Particularly, flows of black and low-income South African migrants are strongly influenced by climatic variables whereas those of white and high-income migrants exhibit a weak impact. We also argue that agriculture may function as a transmission channel through which adverse climatic conditions affect migration.

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## Understanding the relationship between climate change and urbanization in South Africa: A migratory systems approach

Shepherd Muchuru

Most studies on rural-urban migration in the Africa continent demonstrates that migrants tend to move in a “circular” fashion and only spend short periods of time in cities before returning home to rural villages. However, research has shown that deteriorating environmental conditions may force and lead people to migrate to urban areas searching for greener pastures and stay for longer periods of time. If the statement is true, then the changing climate menaces to increase rural-urban migration and lead to restored pressure on cities’ infrastructure. The main aim of this study is to explore and examine how climate change may affect rural-urban migration and urbanization in South Africa, Southern Africa. To achieve this objective, we employed various methods namely: collecting survey [n= 250], focus group discussions [n = 125 participants] and in-depth interview [n = 75] data from rural and urban South Africa. Two key findings emerged from the study as significant. (1) Migrants in South Africa’s cities tend to stay in the urban environment for longer periods of time than conventional understandings of migration would predict. (2) The changing climate may actually lead, in the case of South Africa, to reverse (i.e. urban-rural) migration. The reason being that many of the people in South Africa's cities depend on goods and products produced in rural environments (e.g. food and fuel wood). If the changing climate impacts rural livelihoods, then many city dwellers will find moving back to rural villages a solution to their affected livelihoods. Overall, based on our results, the recommendation is that in at least one case the impact of climate change on migration may not be largely to increase migration towards urban areas but to necessitate an exodus from cities and back to the rural villages.

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## Land grabbing, Climate Change, and migration nexus. Patterns and trends in Africa.

Chipo Mukonza, Ricky Munyaradzi Mukonza

There is growing academic literature dealing with the impacts of Climate Change, land grabbing and migration. Literature is awash with evidence which suggest that Africa is the most affected by Climate Change. This will have dire consequences in the Agriculture sector which is the back borne of many economies in Africa. This has been exacerbated by land grabbing patterns that have erupted in various parts of Africa. In the process people have been forced to migrate to other countries. The paper examines the interactions between climate change, land grabbing and migratory processes in selected parts of Mozambique and Zimbabwe. Furthermore, the paper analyses policy framework and the relevant institutions that might have an effect on mobility of people. It has been established that the causes of migration are manifold, it can be forced or temporary migration.

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## An Exploration of the Provision of Government-Subsidised Housing without Title Deeds: A Recipient's Interpretation of Security of Tenure

Olusegun Michael Onaolapo

Low-income households earning less than 3,500 ZAR (about 175 GBP) per month can apply to the South African government, through the National Housing Subsidy, for fully subsidised houses. An objective of this subsidy is to enable low-income households' participation in the formal housing market; however, the beneficiaries received houses without title deeds. As such, if the beneficiaries did not have a secured tenure at the time of their death then surviving family may face possible eviction. Therefore, an aim of this research was to determine how these beneficiaries interpret tenure security. The research focused on government subsidised housing in the Dithlake settlement of a rural hamlet named Koffiefontein, in the Letsemeng Local Municipality of South Africa. Quantitative data on the beneficiaries were collected from the local municipality, while qualitative data were collected from a sample of 45 beneficiaries.

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## Voluntary and involuntary relocation due to climate-induced flooding in Kampala

Shuaib Lwasa, Kisembo Teddy

A number of factors contribute to Kampala's high incidence of flash flood including poor drainage, high rate of urbanization and land use change. This flooding is accentuated by climate change with serious consequences to households in Kampala. Households make complex and challenging decisions to leave their homelands and relocate to new environments with less flood risk. This paper analyses the decisions regarding voluntary relocation from flood risk areas. The objectives include; (1) understanding the drivers, the tipping points and limits of tolerable risks, which push or enable people to move out of the flooding; (2) discuss the process of implementing decisions regarding involuntary relocation; (3) use the case study of Kampala to propose a framework that would help understand the relocation decisions at multiple scales. The research is based on experiences of relocation and resettlement risk from the respondents in tow locations of Kampala. The tolerable risk was assessed in terms of how households are able to tolerate the flooding risk like Social identity, historical perspective and economic status. Tipping points are viewed as those incidences that trigger residents to relocate. Factors including education, social, flood mitigation, the high cost of responding to flood, low savings, constant loss of property and destruction of houses households voluntarily relocate. The process of involuntary relocation is analysed in relation to how public institutions manage the process. KCCA values people's property and thereby compensate them but doesn't relocate people, individuals or families find where they can relocate by themselves. The study concludes that most people are tolerant to flood risk which suggests that any decision to relocate is not the primary determinant but they are other fundamental factors that influence their decision to relocate.

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## Remittances and resilience to climate change in semi-arid areas of Senegal: a gender effect?

Mamadou dit Ndongo Dimé, Cheikh Tidiane Wade, Lancelot Ehode

In Senegal, remittances are the largest source of external capital before foreign direct investment and official development aid. In the semi-arid areas of the country (Centre, North and North-East), households depend on it to face to vulnerabilities related to poverty, environmental degradation and socio-political exclusion. Several studies have shown that the perceptions of climate change, the degree of exposure to vulnerabilities and the coping strategies vary according to gender. In Senegal, socioeconomic roles are strongly marked by gender. This effect is also noticeable in migration dynamics. Migration, especially the international one, has long been "men's business" but today it begins to be more feminized. Women like men contribute to the "economy of remittances" allowing Senegal to be the third sub-Saharan Africa to receive more transfers. But key questions arise: how gender influences remittances' dynamics? What are the points of convergence and divergence between men and women in terms of money transfer channels, destination and use of transfers and their impacts on resilience to climate change? Our research will be structured around the following hypothesis: women as heads of households in areas where remittances represent the main economic resource consider investing in human capital as a priority and make choices in favor of more resilience.

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## Illegal migration and climate change in Senegal

Franck Aurelien Tchokouagueu, Joseph Arsène Feutoho Defeu

Senegal is one of West Africa regions doubly affected by environmental changes and illegal immigration. Environmental changes relate to both human actions such as deforestation and natural actions such as floods and coastal erosion. About clandestine emigration in Senegal, it is summed up phenomenon "Barca or Barsakh" (to see Barcelona or to die). Several studies have shown that international migration, particularly illegal in Senegal have for main factor the socioeconomic conditions of households. But environmental changes due to climate change occurred in recent years in the country have significantly affected the living conditions of the Senegalese people. Habitat loss due to flooding; the loss of arable land due to coastal erosion; the decline of fishing activities caused by the depletion of fish products, are few direct consequences of climate change in Senegal. Therefore, it appears a link between illegal migration and climate change in Senegal. This study aims to identify the interaction between climate change and illegal migration in Senegal. Specifically, it's about: to identify the consequences of illegal migration and climate change in Senegal; analyze the links between global warming and illegal immigration; and identify actions to be taken by the Senegalese policies. It appears mainly in this study that climate change increases the risks of illegal migration in Senegal, especially for young farmers and fishermen. The main climate change planning actions that could mitigate the clandestine departures in Senegal would be: subsidizing field studies of population struggling to cope with climate change, and the forecast studies on its effects; support farmers and fishermen cope with the effects of global warming.

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## Development-induced displacement: The case of Chinese investment in Africa

Natália Hlavová

The paper discussed the topic of development-induced displacement within the migration debate and its coverage in current scientific research. The specific position of development as a driver of displacement offers room for debate on this topic. The paper further illustrates the historical experiences with development-induced displacement in China and in African states. The main part of the paper introduces the cases of development-induced displacement in Africa caused by the investment projects financed by China.

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## Internal-displacement and immigration provoked by oil mineral exploration in the Albertain region in Uganda

Skyler Jayden Dembe, Julian Nambi, Geoffrey Matovu

Extraction and transportation of mineral resources today presents an increasing social crisis, leading to environmental degradation and the infringement of human rights. In addition to economic, social and political controversies, it caused population displacement on a large scale. The social costs of oil production illustrate asymmetric power relationship between transnational capital and the populations of developing countries. Crude oil extraction also leads to massive environmental devastation, which clearly affects the living conditions of local communities. Access to oil has been a common cause of conflict, which obviously has affected the scale of evictions in the Albertain region. Protests against the expansion of mining, oil exploitation and environmental destruction has led to violent clashes with police and forced evictions of entire communities. Authorities have often forced the violent displacement of local communities, sometimes involving many thousands of people. Displacement associated with the extraction of oil has been a unique and interesting issue. The multidimensional nature of the problem breaks the general division of internal displacement into: conflict-induced displacement, environmentally-induced displacement, disaster-induced displacement, and development-induced displacement.

Oil-induced population displacement has occurred profoundly in Uganda as a failed states and conflicted laden country with poorly-established principles of democracy, ethnic antagonism or practices of discrimination against indigenous and tribal people of Bunyoro, and low efficiency in the institutions of legal protection. The environmental consequences of oil extraction are becoming a growing social problem in Uganda. The widespread deforestation of the Rainforest is, in fact, preparing a place for subsequent ecological devastation: the extraction of mineral resources and inappropriate agricultural practices. Unfortunately, according to many scientific studies, oil production in developing countries almost never contributes to improving the situation of local communities. Loss of land leads to loss of economic base functioning of the whole community.

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## Assessing Social Vulnerability and Climate Change Impacts on Immigrant Populations in Lake Victoria Basin, East Africa

Casianes Olilo, Anastasia Muia, Wilkister Moturi, Japhet Onyando, Kenneth Werimo

The problems of climate change and social vulnerability links equity and social justice as fundamental in finding solutions through population participation, representation, accountability and transparency for the formulation of policies for the mitigation and adaptation of climate change impacts on immigration populations in the Lake Victoria Basin of East Africa. The hypothesis investigated claims that the practice of access to voluntary family planning among the gender helps in shaping demographic patterns of the immigrant populations who co-create clean renewable energy to reduce the emission of greenhouse gases, thus reducing social vulnerability through equity and justice. Data were collected by structured questionnaires and focus group discussion through participatory rural appraisal, from fisheries reports, climate related human population immigrants, co-management and modeled biophysical data, from Lake Victoria Basin countries namely: Kenya, Uganda, Tanzania, Rwanda and Burundi. Root mean square errors were computed using SPSS software. Results show that climate change focus is shifting from equality and distribution of responsibility for organic carbon emission and impacts; to renewable energy use, sequestration of organic carbon, economics, effectiveness and efficiency in addressing climate change impacts of social vulnerability groups in the society. Access to voluntary family planning as a tool in having sustainable families that use sustainable renewable energy and organic carbon emissions sequesters through agroforestry by the Lake Victoria edge populations, relocating fishing populations who live in flood prone lowland geographic areas to higher ground areas during hazardous floods. Thus, co-creating voluntary access to family planning that would impact on fertility and immigrant population trends would enable women to manage their timing of pregnancies and manage their time and energy to contribute to the sustainable reduction of greenhouse gas emissions and societal resilience to improve the likelihood of climate change outcomes and policies for mitigation and adaptation measures in the Lake Victoria Basin.

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## Recent evolution of the coastline in the Gulf of Guinea. Example of Togo and Benin (2000-2015)

Pierre Ozer, Yvon-Carmen Hountondji, Florence de Longueville

The land-sea interface is an extremely fragile environment. On a global scale, coastlines are threatened by a multitude of factors sometimes natural and mostly anthropogenic. Thus, in addition to the disruptions to coastal areas by port facilities, dams, sediment sampling on the beach or urban sprawl, there are the consequences of climate change, including rising sea levels. The objective of this study is to assess recent trends (between 2000 and 2015) of the coastline in Togo and Benin where more localized studies show that sandy beaches are experiencing major changes (accretion or erosion) in recent decades. Coastal dynamics are analyzed using very high spatial resolution images available in open access on Google Earth; the coast is studied by section of 1 km on a coastline of 170 km (pk1 to pk170) by calculating the average change in meter per year since 2000. Analysis of coastal Togo and Benin shows that only 34% of the coastlines (often protected) are stable and that accretion is recorded only upstream of harbor infrastructures (14%). Elsewhere, coastlines undergo erosive processes (52%), sometimes exceeding annual average retreats of 10 m / year. In such conditions, villages have disappeared during the past decade and a large number of people have been displaced.

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## Impact of shoreline changes on population in Cotonou, Benin

Florence de Longueville, Yvon-Carmen Hountondji, François Gemenne, Pierre Ozer

The shoreline of Cotonou (Benin) is affected by intensive erosion for several decades, mainly due to unsuitable port infrastructures and human activities. This results in destruction of habitats and in population dynamics in the risk zone. In the future, the process would be worsen by a rising of the sea level as a consequence of global warming. The objective of this study is to assess the shoreline changes in a span of 8 km at the East of the Siafato groyne between 2002 and 2014 and understand the dynamic of population in the risk area. To do so, we used a combination of very high resolution satellite imageries from Google Earth recorded in 2002, 2011, 2013 and 2014 and carried out field missions in September 2012, September 2013, July 2014 and February 2015. Multi-temporal analyses of satellite imageries show that nearly 93 hectares of land were progressively recovered by the sea between 2002 and 2014 on the stretch of the first 8 km at the East of the Siafato groyne. This corresponds to an average coastline retreat of 115 meters in a span of 13 years, with variations from 38 to 145 meters. From 2002 to 2014, around 765 houses disappeared by the encroachment of the sea in the study area. Well-off population left the risk area when their houses were threatened and installed inland. Fishermen preferred to stay in the risk area to be close to their activities. Precarious population have no financial and social capitals to migrate, they are trapped in the risk area and new settlements of poor population increase the at-risk population. The analysis of intermediate images and the results of field works confirm a rapid process of settlement/destruction of makeshift houses in the coastal area. And then, the affected people successively move through the risk area. There is an urgent need for effective measures to secure coastal population of the risk area. Update and respect of urban planning regulations, good governance, cooperation with other countries and involvement of local communities are all factors that are expected to alleviate the target population of this sensitive area.

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# Europe



## Intergenerational Transmission of Attitudes Toward Migration as a Potential Antagonist of the Demographic Metabolism

Erich Striessnig, Nadia Steiber

Due to their continuous aging, capital rich European societies increasingly rely on migration from societies with large youth bulges to fill up their depleting human capital stocks. In this article we look not only at how public opinion toward migration has changed over time, but also distinguish the age and period dimensions of attitudinal change with regard to migration. Using different waves of the European Social Survey, in a first step we model age-period-cohort trends in attitudes toward migration controlling for important covariates. Subsequently, we project how attitudes toward migration can be expected to evolve in the future considering past changes along cohort lines and future age compositions. For this projection exercise we apply the notion of the “Demographic Metabolism”, introduced by Ryder (1965) and advanced into “A Predictive Theory of Socioeconomic Change” by Lutz (2013). Yet, whereas the demographic metabolism assumes that societies automatically become more tolerant as more tolerant younger cohorts replace less tolerant older cohorts, in this article we look at the possibility of intergenerational transmission of attitudes as a mechanism through which the workings of the metabolism may be slowed down (e.g., when the attitudes of upwardly mobile young individuals – with higher levels of education than their parents – are still strongly influenced by their parents’ attitudes that they have been socialized with before entering the schooling system).

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## Defining the “new normal”: Integrating climate change into the European Union’s root causes of migration discourse

Benjamin Hulme

As the “migrant crisis” continues at the external borders of the European Union, the European Commission has recognised that such migratory pressures are the “new normal” and are driven primarily by geo-political and economic factors in many countries of origin. Throughout the development of the Union’s migration policy, it has sought to integrate and synthesise migration management with other areas of policy such as trade, development and human rights. The EU has sought to target actions in these areas at what it perceives to be the underlying root causes of migration. However, this discourse does not currently include migration which is caused or exacerbated by the effects of climate change. This lack of recognition is in spite of the European Union being one of the founding members of the Platform on Disaster Displacement.

This paper will argue that climate change will overtake political and economic factors as the push factors for the “new normal” in the future. In recognition of this, it will be argued that the explicit recognition and subsequent linkage between climate change and migration in the EU’s migration and asylum policy at this stage in time will provide an adequate basis for the development of an overarching EU policy towards what may be described as climate change migrants. Drawing on a number of proposed definitions of climate change migrants, it will be argued that the understanding of the climate change-migration relationship needs to be more narrowly defined in EU policy in order to effectively integrate climate change into the European Union’s root causes of migration discourse.

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## On the environmental costs of the current refugee crisis

Paula Puskarova, Katarina Csefalvayova

This paper contributes to the discussion on the possible short-run and medium-run impacts of the current refugee crisis on the environment in the European Union. We assume that the volume of the inflows and possible existence of differences in environmental protection between refugees' countries of origin and the European Union might lead to certain additional costs for the EU that have not been properly discussed so far. Inter alia we may assume the environmental costs of the refugee camps or effective environmental protection agenda among refugees. First, we summarize the empirical evidence on impacts of immigration on environment. Then we model our situation - the characteristics of the incoming refugees, the differences in environmental protection between countries of refugees' origin and the EU, the asymmetries of geographical redistribution of refugees across the EU, the volume of the inflows. Then we revert to the current state of environmental degradation alongside the movement corridors and within the final destinations of the asylum seekers and develop a map of environmentally vulnerable zones where policy actions might be needed in the following periods. Finally, we point out the short-run and medium-run environmental impacts of the refugee crisis.

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## The village in Central Europe which disappeared from the map

Mikuláš Černota, Katarína Cséfalvayová, Dorota Harakalova, Kristína Baculakova

The village of Horne Opatovce was stricken in the year 1953 by the establishment of aluminium steel company in its vicinity. The pollution of the old style production technology destroyed the living conditions to firstly to the bees, livestock, trees and subsequently the health of the inhabitants got worsened and the resilience of children decreased significantly. In the year 1960 the Czechoslovakian government made a decision of village liquidation and after the outmigration of inhabitants the village was expunged from the map of Slovakia. The main pollutants were aluminium dust, hydrogen fluoride, arsenic and mercury.

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## Lessons for so-called Climate Refugees from livelihood of Fukushima evacuees

Mikiyasu Nakayama

Around 100,000 Fukushima prefecture residences were obliged to evacuate from their homes due to the contamination of their residential areas by radioactive materials, which was caused by the accident at the Fukushima Daiichi Nuclear Power Plant in March 2011. As of July 2016, a half of these evacuees are permitted to come back home, while many of them are still away from their hometown. For example, only 7% of the residences have come back home in the Naraha Town, where the residents were allowed to come back home after 4.5 years of absence from their hometown. Interviews with these not-yet-returned evacuees revealed that they do not want to come back home, not because they are afraid of the "contaminated" homeland but because they find their livelihood in their temporary residences much more convenient and enjoyable than their original residences. They enumerate such positive aspects as better medical and dental services, easier access to shopping facilities, more job opportunities, better education for their children, closer relationship with those from the same municipality (for those in the temporary housings), no need for rice farming, liberation from the conventional societal bindings and family ties, etc. as the reasons why they do not come back home. These aspects may seem attractive also for so-called Climate Refugees, who are obliged to leave their homes. The majority of the Fukushima evacuees had very limited choices to select their destinations. Still, they find their livelihood as evacuees convenient and enjoyable. So-called Climate Refugees may have much more time to plan for their relocation than Fukushima evacuees. It implies that the lessons learned out of Fukushima evacuees must include useful clues to deal with so-called Climate Refugees, so that they may find their unavoidable relocation as opportunities for better livelihood.

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## Building transnational solidarity on climate change and migration: The case of non-state actors in Turkey and Germany

Ethemcan Turhan

Climate change and migration are two key global challenges facing Europe today, including its Southern neighbourhood. They require not only a coordinated and collaborative policy response across levels, but also a holistic, intersectional understanding of the interactions and feedbacks between them. Turkey and Germany are key actors with regard to these issues in both research and political decision making. On the one hand, Germany, powerhouse of the EU, stands at a crossroads in terms of its migration policy. It is also one of the countries that increasingly stress the importance of effectively combating climate change in order to curb its impacts on peace, security and human mobility. Turkey, on the other hand, an EU accession candidate with a developing economy and significant political turbulence, has received a high number of migrants after the onset of the Syrian conflict. Both countries are thus increasingly connected via climate diplomacy and efforts to understand and manage the effects of human mobility on the local, national and international level. This paper views migration in the context of climate change as a transformative opportunity, capable of reinvigorating transnational solidarity. In this sense, it focuses on the role of non-state actors. The rationale for focusing on non-state actors on climate change and migration is the increased influence of on the local institutions and their international networks in addressing both challenges. There is an urgent need to transform perceptions of migration and climate change in order to have a better understanding of the role that local institutions play. Non-state actors stretching from cities, local authorities, subnational governments and NGOs, in this sense, have stepped forward in the past years both in terms of addressing both issues. The paper explores the roles, strategies and motivations of non-state actors in Turkey and Germany in addressing the climate change-migration challenges.

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## Involuntary displaced people's attachment to their original home

Ryo Fujikura

Attachment of involuntary displaced people by development projects to their original home often affects implementation of the resettlement plan and their satisfaction to resettled areas. In the cases of Indonesian dam construction projects, far less residents moved to away from the submerged original home than what the government had expected resulting difficulties in securing land for resettlement close to the dams. In another Indonesian dam construction project, many resettlers later returned to the vicinity of the dam due to desire to reunite with families remaining in the original vicinity. In many Japanese dam cases, first-generation resettlers still gather regularly on the lakeshore to hold festivals. They also have built villas along the lakeshore and in nearby towns, and come to visit regularly even if they have resettled far away. Dam developers of Miyagase Dam in Japan, whose operation began in 1998, invested JPY 79 billion (about USD 790 million) for regional development in addition to the generous monetary compensation provided to the 1136 resettlers. They are satisfied with their current living conditions, but they still have not cast aside a sense that they became victims of national policies. It might be impossible to completely mitigate local sentiment of resettlers to their submerged home howsoever generous compensation is provided. However, significant improvement of educational opportunities for second and third generation seems to contribute to comfort the first generation. Moreover, the nature of emotional issue differ greatly between the first generation and the secondary or tertiary generations. Many cases show that only first generation had a very strong attachment to his land, while the second or third generation is rather indifferent of his original residence.

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## Migration as an Opportunity for Livelihood Re-Establishment of Climate Change Induced Transboundary Displaced Persons

Yoshioka Nagisa

Climate change induced transboundary displaced persons (CCITDP) represents migrants who are forced to move internationally due to climate change. They are usually considered as miserable people who have no choice but to leave their home country. This study aims suggesting another view of CCITDP, especially those from the Small Island Developing States (SIDs) in the Pacific Ocean. That is, they can find their forced migration as opportunities to secure a better job, to let their children have a better education, or to be emancipated from their conventional thoughts or old custom. Moreover, unlike forced migrants by other causes, very long time available for CCITDP in SIDs to plan for their future allows them to change their paradigm, namely they may not necessarily feel their forced relocation as a miserable fate. The Kiribati migrants living in New Zealand, who have migrated under immigrant policies such as Pacific Access Category (PAC), suggest that CCITDP must feel happier after relocation. Some of the migrants to New Zealand have already succeeded in having access to better education for their children, health services, or fresh fruit and vegetable which are difficult to gain in Kiribati. These migrants anticipated, before their leaving Kiribati, that they would enjoy their improved livelihood in New Zealand in these aspects. Future CCITDP may regard their fate of forced migration as a chance to secure a better livelihood than a miserable fate. It should also be noted that people in SIDs have kept moving from one island to another historically, in order to adapt themselves to environmental changes. This paper proposes international society a new assumption in considering possible solutions to address the issues related to CCITDP.

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## Understanding Climate Change, Security and Migration: A study of Syrian, Somali and Pakistani refugees in the EU

Christian Webersik

In the past years, Europe has witnessed a large number of refugees and migrants from Syria, Somalia, and Pakistan. At the same time, a policy and academic debate developed addressing the role of climate change impacts, largely extreme weather events, such as droughts and floods, in armed conflict. Armed conflict in turn is seen as one of the main drivers of forced migration. This begs the question to what extent natural hazards, such as droughts or floods, implicate in current conflicts in Syria, Somalia or Pakistan? All three countries have a strong agricultural sector and occurrences of natural hazards, including droughts, floods, and landslides. All three countries are having and had episodes of armed conflict. However, linking climate change impacts to armed conflict and migration implies the assumption of a causal link between climate change impacts, armed conflict and migration exists, a causal relationship that lacks rigorous empirical and systematic evidence. It is not clear why climate change would or should drive conflict or form migration decisions, and the literature has not addressed this issue. This study aims at closing the gap. The discussion on climate change, security, and migration often rests on mono-causal links, while migration studies have stated the multi-dimensional factors explaining why people migrate. The factors include economic ones (poor incomes and unemployment), social ones (low educational attainment and poor welfare system), environmental ones (natural hazards and environmental degradation) and security concerns (armed, political conflict, gross human rights violations, inequality and crime). Preliminary findings show that armed conflict undermines people's and institutions' capacity to respond and to cope with extreme weather, they are weakened to build resilience, and alternative income opportunities are limited. The decisions to flee or to migrate are not determined by objective, measurable factors but driven by people's perceptions of their own vulnerability.

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## Why are Western Africans migrating to Spain?

Lizzie Wynn

Large-scale forced migration is on the increase and due to border restrictions, migrants put themselves at great risk. Reasons for involuntary or forced migration are discussed along with links to climate change. The paper focuses on the relationship that Western Africa has with migration routes, a longer and quieter story than the Syrian exodus. Sub-Saharan Africa has a history of environmental changes and migration. A group of people are interviewed from Almería, Spain, revealing rationale for journeys along some historically established and dangerous routes. Vulnerable communities lack support in mitigation and adaptation to climate change, to avoid displacement. In situations with involuntary migration, proper and safe ways to make internal and cross-border journeys need to be established, along with dignified relocation strategies. The study finds some migration is linked to soil degradation and low wages and that climate migration is not always obvious, nor the sole reason for migration.

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## Here to stay: The failure of European migration policy to understand the permanence of climate change as a root cause for migration

Clarisse Kehler Siebert, Leif Holmberg

In recent years, numerous social science disciplines have hypothesised and established causal links between environment change (broadly) and climate change (specifically) on the one hand, and human displacement on the other. This same – and not uncontroversial – literature anticipates that there will be many more such “environmental migrants” or “climate refugees” in the foreseeable future. Whether framed as directly causal or as compounding an already complex set of circumstances leading to emigration, the environmental and climactic changes that result in people fleeing are long-term or permanent, and are part of the calculation of why people leave their homes and whether they return. The policy responses required in recipient countries to meet this new brand of environmentally-induced human migration must acknowledge and accommodate migration with climate change as a root cause – notably anticipating the longevity or permanence of environmental change. Yet Europe and its Member States are meeting the current and fundamentally different “refugee crisis” with conventional policies and tools. A systematic mapping and analysis presented in this paper of current migration policies and political responses at the European and (select) Member State levels demonstrates that the present European response to human displacement fails to acknowledge the changing drivers of human displacement. The paper proposes elements of a “successful” (measured through integrating new populations while developing viable economies and upholding human rights) European response to the “refugee crisis”, which requires (im)migration politics and policies to acknowledge and plan for the changing, globalised and lasting causes of migration.

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## What is the role of environmental factors in current immigration flows to Europe?

Robert Stojanov, Daniel Němec, David Prochazka

The media are full about so called “European refugees crisis” and the numbers of “refugees flowing to Europe”, information and data vary based on the resources used. What we know that about two millions immigrants came to Europe for last two years seeking asylum, new home and opportunities for their households and families. The main aim of the paper is (i) identify the causes of the immigration of people currently coming to Europe, and (ii) recognize what is the role of environmental factors in their decision making. A total of 283 households from Syria, Afghanistan, Iraq, Eritrea, Iran and other Asian and African countries were addressed within the framework of the questionnaire survey. On the basis of the conducted research, we determined mix of reasons for immigration to Europe and just a little knowledge of local environmental conditions in their countries of origin within the sample. Nevertheless, we recognized that environmental factors are part of decision making processes of any households in some selected countries.

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# South America



## Towards building local public policies for guaranteeing human rights of environmental migrants: the case of the Province of Pichincha in Ecuador

Sergio Antonio Ruiz

Under the principles of universal citizenship, the Ecuadorian Constitution recognizes migration as a human right and objects to labeling any human being as an “illegal” migrant. Thus Ecuador now hosts almost 60,000 people, with the largest number of migrants stemming from Colombia, Cuba and Haiti. Despite this advance in regulatory frameworks, current norms do not provide adequate elements for protecting the rights of environmental migrants, which amount to 1.5 million in Latin America alone (2015), approximately three times the number who fled conflict and violence in the whole continent. Considering the latest natural disasters such as the earthquake in Ecuador but also the increasing risk of volcanic eruptions, or the cyclical threat of El Niño phenomenon, the number of environmental migrants could double in the next years in the Andean region. Because persons affected by natural disasters are mostly internal migrants, subnational government should play a decisive role for improving socio-economic conditions. This paper aims at contributing to the development of local instruments and policy towards guaranteeing human rights, both in the migrants’ place of origin as well as in the host cities. The governance and political framework in Ecuador provide ideal conditions for adapting strategies to rural areas, since provincial governments such as that of Pichincha have the mandate to reduce poverty, promote agricultural production and also contribute to environmental protection measures. Similarly, municipal governments are responsible for improving conditions in host cities such as housing, employment opportunities and social inclusion of migrants. However, challenges remain, such as improving coordination and joint work between public bodies, formulating local norms that recognize affected persons as “environmental refugees” or reducing development gaps between rural and urban areas. This study aims to shed light on implementing actions within the framework of the international Habitat III conference.

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## Brazil Legal Framework for environmentally displaced people

Giulia Mancini Pinheiro

Brazil is one of the most affected countries in terms of natural disasters. According with the Germanwatch report, in a length of 20 years, 1610 people died in natural disasters and more than U\$ 1,7 trillion has been spent with losses. Furthermore, due to its continental territorial extension, issues like floods, soil erosion, draughts and deforestation have caused thousands of people to move, seeking for a safer place to live. Although most environmentally displaced people move inside borders, Brazil has also received other immigrants induced by environmental reasons. In this sense, the aim of this paper is to investigate and summarize the legal framework that can be used by environmentally displaced people to seek for protection. In addition, it will briefly analyze two recent and relevant cases and the laws applied in each situation. The internal case is the Samarco disaster of the collapse of a tailing dam in November 2015 and the external case is the flow of Haitians that immigrate to Brazil after the 2010 Earthquake in Port-au-Prince. In the national framework it is possible to stand in two main directions. The internal displacement has its main guidelines and competences in the Law n. 12.608 from 10 April 2012, named as National Policy for Protection and Civil Defense, however, all the practical actions concerning the population is regulated by decrees or additional laws. The second direction concerns the cross-borders displacement which is ruled by the Foreigner Statute Law n.6.815 from 19 August 1980, where it is possible to find the main guidelines for immigration and also the base for National Committee for Refugees who deals with all the individuals cases by its decrees. Finally, the paper will investigate the main treaties and declarations that has been signed by Brazil and its reflexes in domestic law.

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## Migrations and climate change, case studies in South America

Roberto Aruj, Cristián Retamal

This research, funded by IOM and currently in its final stages, is based on five case studies in which the links between human mobility (temporary or permanent, internal or cross-border) are explored as strategic responses to extreme and/or adverse climate or environmental events. The work combines documents information of: general frameworks on international agreements on climate change, environmental and migration policies that link both components at local and national levels, as well as climate and environmental extreme events occurred in South America (bibliography, statistics, researches), information gathered directly from inhabitants of the selected communities for the case studies –affected by extreme weather events– and also in depth interviews with civil servants, NGOs members and researchers/experts in the migration and climate domains, at both national and local levels. As part of the field work, studies are carried out in Argentina, Brazil, Chile, Colombia and Ecuador, based on participants observation, interviews with key informants and local settlers –affected directly or indirectly–, as well as systematisation of referential studies and journalism reports in each of the communities selected for the case studies in the five countries involved. Based on the findings and conclusions of the research –expected for the last quarter of 2016– a set of recommendations shall be suggested for the decision making and public policy formulation in the environmental and migration domain in the context of vulnerability, adaptation and climate/environmental risk, with either natural or anthropogenic origin, or a combination of both. Similarly, a publication for the dissemination of such outcomes will be elaborated as well awareness-raising and capacity building workshops in each of the countries where the research is being carried out.

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Roberto Aruj and Cristián Retamal currently collaborate with IOM South America in improving the understanding between human mobility and climate/environmental change, as well as creating awareness in regional political spheres about this phenomenon.

