



International Organization for Migration (IOM)



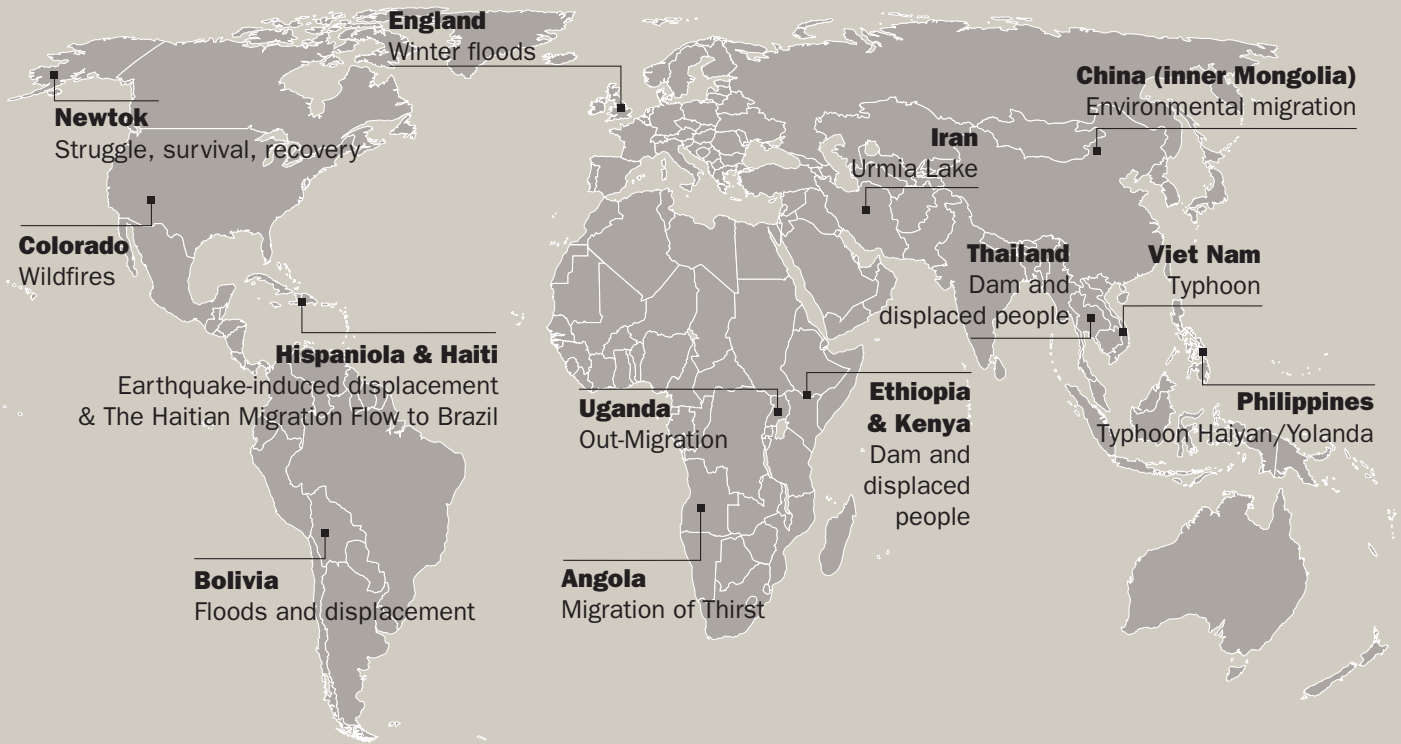
SciencesPo.

The State of Environmental Migration 2014

A Review of 2013
Edited by
François Gemenne
Pauline Brücker
Dina Ionesco

With the support of





Contents

Introduction	5
Asia	
Recovery and return after typhoon Haiyan/Yolanda	13
One typhoon after another: Viet Nam in Fall 2013	31
Assessing the evolvments and impacts of environmental migration in Inner Mongolia	49
Exploring social vulnerability and environmental migration in Urmia Lake of Iran: Comparative insights from the Aral Sea	65
Africa	
Angola's Migration of Thirst: The 2013 Drought	85
Leaving drought and hunger behind: out-migration from Karamoja, Uganda	101
The Americas	
Newtok: struggle, survival and recovery	119
Earthquake-induced internal displacement and cross-border migration on Hispaniola in 2013	135
The Haitian Migration Flow to Brazil: Aftermath of the 2010 Earthquake	149
The 2013 Colorado Wildfires	167
Floods and displacement in Bolivia	175
Europe	
The Impact of Displacement in the 2013/2014 Southern England Winter Floods	191
Special section	
Gilgel Gibe III: Dam-Induced Displacement in Ethiopia and Kenya	215
Water management in Thailand: dams and the voice of the affected and displaced people	235
Biographies	252

With support of COST Action IS1101 on Climate change and Migration

COST IS1101 Climate change and migration: knowledge, law and policy and theory is a pan-European network of social scientists that aims to build a broad body of social science research on all aspects of climate change and migration. Our objectives are:

- to enhance and improve understanding of climate change and migration;
- to furnish state and non-state actors with state-of-the-art empirical, theoretical, legal and policy research on climate change and migration;
- to inform national and international policy dialogue, such as the IPCC and other policy initiatives;
- to expand research capacity in the area of climate change and migration; and
- to establish a network of Europe-based social science researchers working on climate change and migration.

Our work is subdivided into three working groups: Working Group I (WGI) —Knowledge; Working Group II (WGII)—Law and Policy; and Working Group III (WGIII) - Theory. The focus of WGI is empirical research, including method and data collection, quantification, remote sensing and geographical information systems, and modelling. The focus of WGII is normative research, including research leading to the development of policy and law. And the focus of WGIII is theoretical research, including political, cultural and social theory, postcolonial theory and critical race theory.

In order to achieve our objectives, we fund a range of activities including workshops, knowledge exchange, and research dissemination, such as the annual publication of the *State of Environmental Migration* report.

Our Action began in October 2011 and will run for 4 years, winding down in October 2015.

Dr Andrew Baldwin, Institute for Hazard, Risk, and Resilience, Durham University Chair, COST Action IS1101.



Disclaimer – IOM

The opinions expressed in the report are those of the authors and do not necessarily reflect the views of the International Organization for Migration (IOM). The designations employed and the presentation of material throughout the report do not imply the expression of any opinion whatsoever on the part of IOM concerning the legal status of any country, territory, city or area, or of its authorities, or concerning its frontiers or boundaries. IOM is committed to the principle that humane and orderly migration benefits migrants and society. As an intergovernmental organization, IOM acts with its partners in the international community to: assist in meeting the operational challenges of migration; advance understanding of migration issues; encourage social and economic development through migration; and uphold the human dignity and well-being of migrants. www.iom.int

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise without the prior written permission of the publisher.

**DINA IONESCO
FRANÇOIS GEMENNE
PAULINE BRÜCKER**

Introduction

As the environment, climate change and migration complex nexus is drawing increasing attention in the contemporary international agenda, *The State of Environmental Migration 2014: Review of the Year 2013* is the fourth of our annual publication¹, with a specific focus on the year 2013 and aiming to enhance understanding on natural disasters, sudden onset events and slow onset events and their links to human mobility. The publication is not only focused on 2013 events but does also consider the longer term impacts of a natural event on migration, as we can assess them with the state of knowledge we have in 2013, as well as developments at policy level relating migration, climate and the environment.

The State of Environmental Migration series seeks to document empirical evidence to provide an annual assessment on the changing nature and dynamics of environment and climate related migration throughout the world. Written by the graduate students enrolled in the “Environment and Migration” course at the Paris School of International Affairs (PSIA) of Sciences Po, this report goes through the issue of environmental migration, by analyzing case studies selected by students.

The report is jointly published by Sciences Po and the International Organization for Migration (IOM). IOM is particularly concerned with human mobility matters in the context of environmental degradation and a changing climate. The organization acknowledges that the migration, environment and climate change nexus has emerged as one of the thematic policy areas in expansion within national, regional and international migration and climate agendas. This new volume of the State of Environmental Migration is also part of IOM’s commitment to provide information and knowledge on different environmental migration issues and to engage with academic partners in the development of research, data and publications. The publication benefits from the agreement between IOM and the University of Michigan Ford School of Public Policy and from the work undertaken by Amanda Van Dort with IOM in 2014.

This edition reviews case studies across continents, dealing with both developing and developed countries. It tackles a diversity of natural events such as storms, floods and drought, while analyzing many different types of migration such as pastoralist movements, displacement due to natural disasters or cross-border displacement. It considers key concepts as community resilience and social vulnerability and how resilience and vulnerability impact on migration strategies. Furthermore it provides

1. *State of Environmental Migration 2013: Review of the year 2012* (IDDRI, IOM, COST, 2013) ; *State of Environmental Migration 2011* (IDDRI, IOM), 2012 ; *State of Environmental Migration 2010* (IDDRI, IOM), 2011

examples of policy responses such as resettlement, national adaptation strategies, disaster risk reduction and return and perspectives at the individual, community and national and regional levels.

METHODOLOGICAL CONCERNS

As for the last editions, the choice of the cases studied was based on predefined criteria. The case studies needed to address events that occurred in 2013 or that were still on-going in 2013. They needed to present and assess the different policy and humanitarian responses implemented. The methodology applied tried to capture both quantitative and qualitative information on each specific case, with limited possible field work. However, the joint publication with IOM has facilitated students' contacts with IOM staff members on the field allowing some of them to rely on first-hand sources. Others have interviewed experts such as scholars, policy makers and journalists, as well as migrants and community leaders. The key sources of information remain governmental agencies' reports, international, national and non-governmental humanitarian and emergency relief reports, along with press articles.

Students faced many challenges: how to deal with events that are so recent and to analyze them within such a short time frame which makes it difficult to size all consequences, have all data available and contextualize their findings? How to work through secondary sources of information of varied nature in particular the pre-eminence of media articles and to be able to raise contradictory views to their arguments? How to deal with sources of information that are only from governmental channels and with the overall lack of quantitative data? How to conceptualize environmental migration and to identify environmental migrants when migration is driven by multiple factors and it is difficult to isolate environmental and climatic factors? How to define and what terms to use, when migrants do not fall squarely in any legal categories and a mix of normative, legal and rights based approaches need to be considered? Finally, how to analyze the policy responses that cut across a large number of policy areas, including adaptation, migration, development, humanitarian, human security or disaster risk reduction?

The publication gathers the students' choices, as guided during the course work and through exchanges with IOM. However, the chapters express above all the students' voices, their views and investigations and this is a great part of what the State of Environmental Migration aims to offer: the understanding of a complex and evolving area of work through the perspectives of young researchers.

THE YEAR 2013: MIGRATION AND DISPLACEMENT DUE TO ENVIRONMENTAL AND CLIMATIC FACTORS

The Global Estimates Report² released in September 2014 by the Internal Displacement Monitoring Centre (IDMC) offers evidence that 22 million people were newly displaced as a result of natural disasters in 2013.

As the previous years, the year 2013 underwent a series of natural hazards inducing mass displacements, more frequently in the most exposed and vulnerable countries. More than 600 events were recorded during the year, of which 37 involved mass movements ranging from 100,000 to over four million people. Asia was the worst affected region in 2013 by natural disasters. Within the 20 largest displacement

2. IDMC 2014 Global Estimates

events, 17 were recorded in this region, with Typhoon Haiyan attracting most of the media's attention. This dramatic hazard is ranked as the strongest tropical cyclone ever recorded: it devastated several Southeast Asian countries, affecting 14 million people and displacing 4 million. Among natural disasters, typhoons, floods and earthquakes were the most frequent, particularly in China and the Philippines. Sub-Saharan Africa was not spared either, rainy season floods triggering population displacement in Niger, Chad, Sudan, South Sudan, and Mozambique. The exposure of population to hazard is a crucial variable, making some countries more vulnerable to natural disasters. Environment and natural disaster-related displacement was also recorded in the developed countries: Typhoon Man-yi in the Chubu region of Japan displaced 260,000 people, tornadoes in the US state of Oklahoma 218,500, and floods in Alberta, Canada, displaced 120,000.

These data, though striking, are not comprehensive. They do not account specifically for cross border displacement and do not explore the wide range of 'environmentally' induced human mobility such as drought driven migration or slow onset events such as desertification and ocean acidification, sea level rise and their impacts on human mobility. The Intergovernmental Panel on Climate Change (IPCC) released in September 2013 its fifth scientific assessment report showing that climate change effects are happening at a quick and intense path; hence the impacts on people's livelihoods cannot be ignored.

This volume shows that different types of natural events may induce different forms of environmental migration. Environmental migration can take the shape of short term displacement, permanent migration, circular migration, evacuation, resettlement, return and so on. This broad term is used to address all shapes of human mobility in which people exposed to natural disasters, or to a deteriorating environment, may have to move to survive, or may decide to move as a strategy of livelihood diversification. The selected case studies in this volume show that, migration remains one of the most ancient strategies to face hard environmental conditions and can represent an adaptation strategy with a positive potential.

This volume stresses also the importance of the recognition of the environment as a driver of migration in order to have a better understanding of the potential impacts of a changing environment on migration and to see how migration can be mainstreamed in many policy areas. The report seeks to raise awareness on the effects of climate change on the livelihoods of vulnerable populations, which therefore requires a coordinated effort to manage, facilitate voluntary migration or prevent forced forms of migration when a massive displacement is likely to occur. As a consequence, the issue of migration induced by environmental and climatic factors is gradually appearing in regional programmes. The importance of regional cooperation should be therefore emphasized, as most environmental migration is either of an internal or regional nature. Cross-border dynamics are also mostly regional and require better exchange of information, data and sharing of responsibilities among countries.

POLICY DEVELOPMENTS IN 2013

The relationship between environment, climate, disasters and migration gained relevance in the international political processes and negotiations in 2013.

The powerful typhoon that swept through the Philippines painfully called attention on the impacts of climate and disasters on people's lives and livelihoods, as the United Nations Convention on Climate Change (UNFCCC) 19th Conference of Parties (COP) opened in Warsaw. The President of the COP19, Marcin Korolec, Poland's Minister of Environment mentioned in his opening speech that the typhoon claimed thousands of lives, "*leaving hundreds of thousands of people displaced from their homes. A great human tragedy. Unforgettable, painful, awakening*".

The COP19 in Warsaw, built on the 2012 Doha decision paragraph 7 a) mentioning migration, and mandating the executive committee of the Loss and Damage mechanism to take action on enhancing knowledge and understanding on human mobility, through the agreement on the “Warsaw international mechanism for loss and damage” (decision -/CP.19 para 5 (b)). The committee was mandated to develop a two-year work plan and to enhance engagement with relevant stakeholders and initiatives outside the UNFCCC.

COP 19 was equally important to stress the climate adaptation approach. The UNFCCC Secretariat invited Parties and organizations to balance mitigation and adaptation actions, as set for the objectives of the 2015 agreement that adaptation capacity should be built while binding nations together into effective global mitigation efforts. As of COP19, all 48 Parties of the Least Developed Countries umbrella concluded their National Adaptation Programmes of Action (NAPA) preparation process. The Secretariat also pledged for technical and financial support to the National Adaptation Plans (NAP) process in order to assist the least developed country Parties in undertaking their NAPs process that is also a way for states to integrate human mobility matters in their national planning. International agencies and non-inter-governmental organizations worked together within the framework of a climate advisory group comprising UNHCR, IOM, United Nations University (UNU), United Nations Development Programme (UNDP), International Labor Organization (ILO) and IDMC and the Norwegian Refugee Council (NRC) to advocate for the incorporation of human mobility matters in the climate negotiations within the UNFCCC framework. The climate negotiations remain a relevant policy space for the migration and climate debate and action.

One other key relevant area of policy is disaster risk reduction. The biennial Fourth Session of the Global Disasters Risk Reduction Platform was organized in May 2013, in Geneva Switzerland, chaired by Switzerland, and brought together over 3,500 participants from 172 countries. The Platform met at a crucial stage to provide elements of the future framework for disaster risk reduction (second Hyogo Agreement to be reached in 2015, HFA2) and in the international preparations for the post-2015 development agenda and called for disaster risk to be overtly recognized in the post-2015 development. It was followed by Regional Platform meetings and national consultations. At the Global Platform, the Governments of Pakistan, Kenya and the Philippines, with the support of IDMC, and IOM organized an event focused on “Disaster-related displacement and migration: new policies and tools for more effective prevention and response”, in order to contribute to the development of the Hyogo Framework Agreement (HFA) successor agreement. The disaster risk reduction policy arena remains a relevant space to provide a common framework to address disaster-related displacement and migration and to further anchor the discussions in ongoing work on sustainable development and resilience.

At the humanitarian level, the Global Camp Coordination and Camp Management (CCCM) Cluster is composed of a number of partner agencies with IOM and the United Nations High Commissioner for Refugees (UNHCR) co-leading the Global CCCM Cluster for natural disaster and conflict-induced IDP situations, respectively. In 2013, cluster partners included 17 agencies. CCCM Cluster works in countries impacted by natural disasters and thus has a great role to play to improve the humanitarian response to natural disasters.

Other fora provided in 2013 space for policy discussions on climate, environment and land, where human mobility matters were brought to the front by different states and agencies such as the “High-level Meeting on National Drought Policy (HMNDP)” organized by the World Meteorological Organization (WMO), the United Nations Convention to Combat Desertification (UNCCD) and the Food and Agriculture Organization of the United Nations (FAO), or the 3rd Asia Pacific

Climate Change Adaptation Forum held in Seoul with a session organized by the Asian Development Bank (ADB) and IOM on migration and adaptation.

The year 2013 was quite significant for European negotiations on climate, as the European Commission adopted a Working paper on migration and climate change as part of the Communication package on the EU Adaptation Strategy approved in spring 2013³. This paper recognized that *“there is growing evidence that climate change, climate-induced events and environmental disruptions are likely to assume greater importance in influencing migration, particularly within the developing world”* and has a specific focus on human mobility induced by environmental degradation, including land degradation, drought, desertification, rising sea level, and by climate induced disasters, such as drought, floods, extreme weather events, winter storms and heat waves. This is an important achievement, since it enhanced the discussion on climate induced migration at EU level and sought to clarify which should be EU role to adequately respond to the challenge posed from environmental migration. The Communication also aimed to identify what are the legal options and policy responses at EU level to protect and accompany climate migrants. Finally it advocated mainstreaming climate change adaptation and mitigation into EU sector policies, including also migration policies and social issues.

At the level of IOM, the migration, environment and climate change nexus has emerged as one of the thematic policy areas in expansion within national, regional and international agendas. In 2013, all the Regional bi-annual Strategies developed by IOM’s nine regional offices around the world acknowledge that environmental, climatic and ecological factors increasingly influence human mobility, in both its forced and voluntary forms. Moreover, in 2013, 54 offices worldwide responded to IOM’s internal survey on environmental migration, calling attention on the heightened relevance of environmental and climatic factors for migration management activities. The responses coming from national offices, mandated to work on a broad spectrum of migration management aspects, is an interesting barometer of states seriously considering the links between migration, environment and climate. Throughout 2013 IOM enhanced the use of its Migration Crisis Operational Framework (MCOF), which was developed in 2012 and applied to respond to Typhoon Haiyan the day after the event. The organization took stock in 2013 of its activities implemented between 2010 and 2013, identifying 257 projects contributing to disaster response, risk reduction and resilience building in 31 countries directly benefitting at least 23 million individuals⁴.

Launched in October 2012, the Nansen Initiative seeks to promote a protection agenda for cross-border disaster-induced displaced people through regional consultations and research. Two regional consultations were organized in 2013 in the Pacific (Rarotonga, Cook Islands) and in Central America (San Jose, Costa Rica). The Initiative offers a useful space for discussion at regional levels and with a focus on protection and legal frameworks.

Finally, in 2013, the Climate Vulnerable Forum (CVF), an international partnership of countries highly vulnerable to a warming planet launched a new Action Plan under the Costa Rica presidency for the 2013-15 period that mandates new research, high-level consultations and diplomatic activities. Joint efforts of CVF members till 2015 are focused in six multi-lateral sectors, one of them being migration which shows the importance of human mobility in the context of climate change for most vulnerable countries.

3. EU working paper on climate adaptation strategy: http://ec.europa.eu/clima/policies/adaptation/what/docs/swd_2013_138_en.pdf

4. IOM Compendium on Disaster Risk Reduction and Resilience, 2013

IN THIS EDITION

This volume provides an overview of recent cases of migration induced by or related to environmental or climatic factors in each major region of the world. The first chapter addresses environment related displacement in Asia. It begins with environmental displacement in the Philippines analyzing the recovery process and return after Typhoon Haiyan, known as Yolanda. It continues with a review of the impacts of the 2013 typhoon in Vietnam; then assesses the evolution and impacts of environmental migration in Inner Mongolia before exploring the social vulnerability and environmental migration in Urmia Lake region of Iran, by providing comparative insights from the Aral Sea.

The second chapter addresses African cases of environmental migration. It begins with Angola's drought, which hit the country between the end of year 2012 and the beginning of 2013 and is considered the worst drought in 30 years. It then tackles out-migration from Uganda, particularly the district of Karamoja in the north-eastern part of the country, where pastoralists are forced to leave the dry lands.

The third chapter is dedicated to the Americas. It begins with cases of spring 2013, such as the resettlement of the community of Netwok in Alaska. It continues with the earthquake-induced internal displacement and cross-border migration on Hispaniola in 2013. It then explores the Haitian Migration flows to Brazil, by providing an insight of the ongoing consequences of the 2010 earthquake; reviews the Colorado Wildfires of 2013 and tackles floods and displacement in Bolivia.

The fourth chapter is focused on Europe. It addresses the impact of displacement in the 2013/2014 Southern England winter floods and it deals with the challenge of community resilience.

Finally, the volume concludes with a special focus on displacement induced by development projects including the story of Gilgel Gibe III: Dam-induced displacement in Ethiopia and Kenya; and ends by analyzing water management in Thailand and dams through the voices of affected and displaced people. ♦

Dina Ionesco, François Gemenne, Pauline Brücker

5. With thanks to Serena ODIANOSE for her inputs and support

Asia

ISABEL MAKHOUL

Recovery and return after typhoon Haiyan/Yolanda

Environmental displacement in the Philippines

Super typhoon Haiyan, locally known as Yolanda, hit the Visaya Islands of the Philippines on November 8, 2013 around 5 a.m. local time producing one of the most severe human tragedies the country has ever seen. Only 3 days after the natural disaster the 19th session of the United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP19) began in Warsaw from 11 to 22 of November. The touching and tearful speech given by the lead climate negotiator of the Philippines Yeb Sano, who is originally from the completely devastated city of Tacloban, earned standing ovations and an applause that lasted several minutes. He also announced that he would start a hunger strike against the passivity and stagnation of the COP in the Figure ht against greenhouse gas emissions and global warming as a consequence of climate change (Young 12.11.2013). The conference provoked strong reactions of compassion and, as described by UN Secretary-General Ban Ki-moon, typhoon Haiyan has given a “human face” to climate change (Nunez 22.11.2013) pointing to the millions of people affected by the typhoon.

The occurrence of highly destructive storms has been increasing in the past few decades especially for disaster-prone countries like the US (Katrina 2005, Sandy 2012) or island states like the Philippines, yearly haunted by over 20 tropical storms (Ther 07.11.2013) which regularly cause great devastation (ultimately by Typhoon Bohol 2012). But never has a tropical storm been as devastating as Haiyan/Yolanda, overwhelming local, national and international authorities. According to the United Nations offices the typhoon affected in total 9 regions, 44 provinces and nearly 600 municipalities. The human impact was tremendous: 14.1 million people were affected (almost 15 percent of the total population), over 6,000 died and almost 2,000 were by the time still missing. In total 4.1 million people were displaced by the event and 1.1 million houses were damaged (OCHA & UNEP 14.01.2014). A few days after the disaster 1,552 government-run evacuation centers were hosting approximately 387,450 displaced people (IDMC 2013c).

Following the flood, media all around the world uncovered the devastation and mobilized huge amounts of international aid. The Filipino government together with several UN- and other international aid agencies, but also smaller NGOs actively took part to alleviate the situation of the displaced. Nevertheless Haiyan clearly showed the limited capacity of the international community to handle a disaster of this extent. In this paper we will primarily try to assess the situation of the displaced people and draw their migration since Typhoon Haiyan until now. We will try to focus on the recovery process as a whole and the return of Internally Displaced People (IDPs), as well as the short and long-term challenges. Furthermore, we will examine the policy responses proposed by the Filipino Government and international aid agencies to handle the environmental and human disaster.

THE PHILIPPINES

The Philippines is an archipelago with a total area of 299,404 km² in the north-western Pacific of 7,107 islands, from which around 1,000 are inhabitable. The country has a rich biology, a great diversity and has one of the world's longest coastlines. The Philippines has a population of 97 million people and is considered a lower middle-income country.

At the same time the country is one of the world's most disaster-prone countries, from which typhoons, earthquakes or floods are only few examples. Natural disasters have led to great destruction and a high vulnerability of the majoritarian poor population. The island state is thus especially affected by the consequences of climate change. Most of the Filipino population lives in a situation of high social, environmental and economic vulnerability. Around 26.5 percent of the population is living under the poverty line (DATA World Bank).

The Eastern and Western Visayas were strongly affected by Haiyan and led to a displacement of more than 4.1 million people.

1. THE PHILIPPINES – A VULNERABLE ARCHIPELAGO IN THE PACIFIC OCEAN

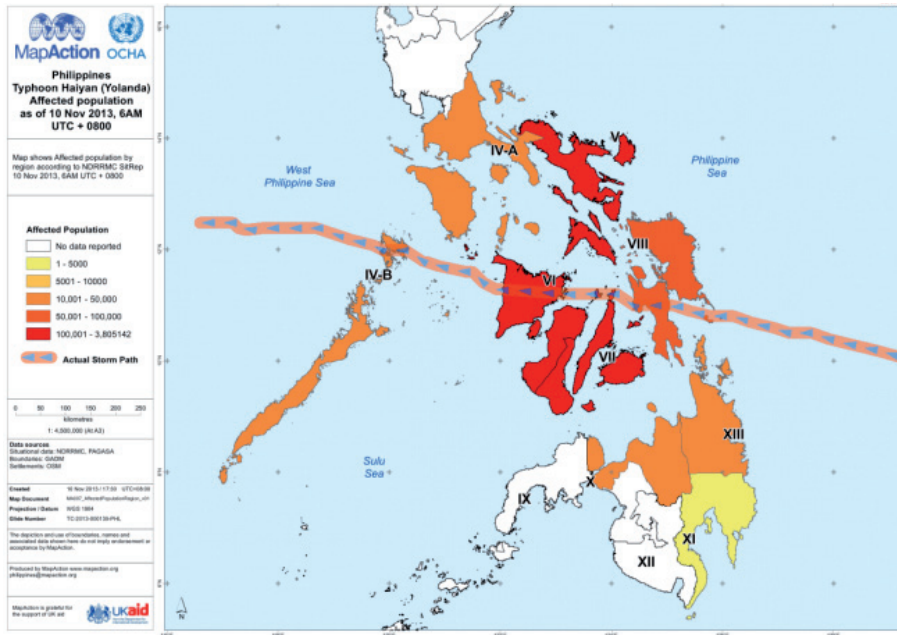
1.1. Risk exposure and assessment of vulnerabilities

The Philippines is located in the northwestern Pacific zone and is considered one of the most “at risk” countries of natural disasters. The Visayas, a group of islands in the Philippines, has high rates of poverty with over 50-60 percent in the different sub-regions, along with high child mortality rates, lack of basic health assistance and higher than average numbers of diseases. Malnutrition among pregnant women and children is high. Trafficking is one of the major concerns in that region, especially concerning women and girls. Education and school completion levels are also widely under the national average (Nguyen 2013: 3).

Geographical patterns increase the exposure to environmental disasters; in this case the overlap of the so-called “Ring of Fire” causing regular earthquakes and volcano eruptions and the typhoon belt, in particular prone to the formation of typhoons because of the high temperatures of the water. The provinces of Leyte and Samar are especially exposed to natural hazards due to their geological patterns and location. (SciDevNet 12.03.2014). Moreover ecological degradation and the socio-economic aspects of the region make it extremely vulnerable to natural disasters with higher human impacts than in other countries of that region (IDMC 2013a). According to the World Risk Index of 2013 the Philippines is ranked number 3 out of 173 countries for disaster exposure.

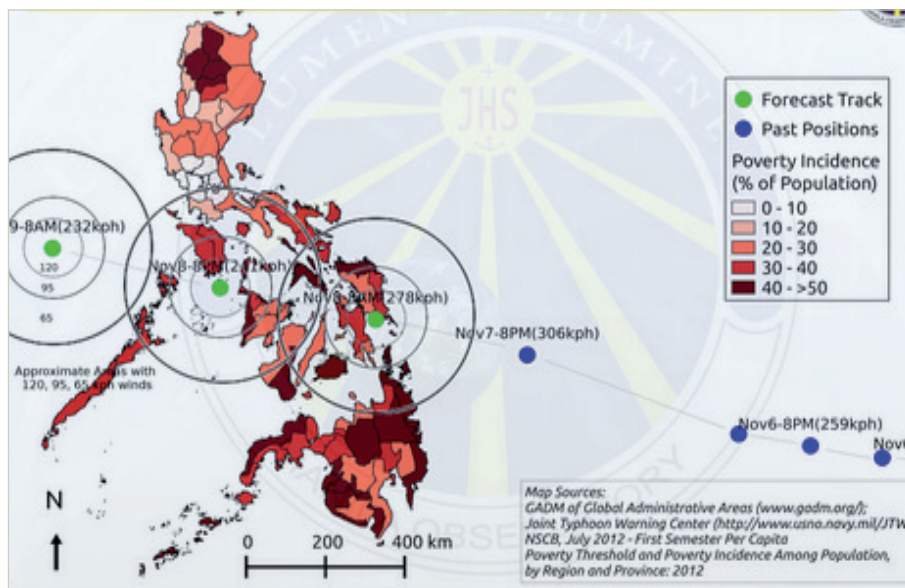
Super typhoon Haiyan was not the first event that made the Philippines rank high in international climate disasters, since 2009 the country has experienced 17 of the worst typhoons in history (Nunez 2013). The Archipelago is also one of the most at-risk countries of climate change according to UN data. Likewise in the assessment of the Germanwatch e.V. 2014 Vulnerability Index- the Philippines over the last ten years always appeared in the top 10 countries and ranks number 7 measuring the climate risk in the 10 most affected countries worldwide between 1993 and 2012. After Typhoon Bopha (locally known as Pablo) in December 2012 caused catastrophic damage and high human losses the country is now position 2 of the ranking, only preceded by Haiti. The Philippines is yearly hit by around 20 typhoons and in the past decade there has been an increase in the frequency and occurrence of storms and typhoons. Haiyan, for example, hit the country remarkably late for its magnitude and was already the 25th storm in the typhoon season, which lasts from end of June until December (Than 2013).

Map 1. The path of Typhoon Haiyan and Affected Population



Source 1: OCHA 10.11.2013: iv. Map provided courtesy of the UN Office for the Coordination of Humanitarian Affairs. The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations

Map 2. Forecasted Track and Poverty Incidence



Source 2: Image courtesy of the Manila Observatory with GADM, NSCB and JTWC data

The high vulnerability is exemplified in the environmentally induced displacements that are an often-recurring issue in the Philippines with the increasing number of rapid-onset natural hazards and more than 1 million displaced people each year. According to the Internal Displacement Monitoring Centre (IDMC) figures, since December 2012 there have been three major natural disasters (Typhoon Bopha, Bohol earthquake and Typhoon Haiyan) where 23 million people were affected, about 8 million internally displaced along with massive damage or complete destruction of livelihood and shelter (IDMC 2013b).

1.2. Recent changes of disaster legislation

The Philippines has always been highly exposed to natural disasters and since the 16th century introduced first measures of disaster risk reduction (DRR) including an emphasis on ways to measure and record risk. The 2011 budget for DRR was about USD 624 million and represented 2 percent of the national budget (~0.28% of GDP). Additionally local authorities contributed to their respective “Local Disaster Risk Reduction Management Fund” (Chughtai 2013: 10).

Since mid-2000 the numbers of environmental disasters have been increasing and have led to the emergence of different legal acts, which were introduced during the last few years to support the displaced people inside the Philippines. In 2007 a disaster coordinating body introduced a cluster system that made it possible to coordinate and supervise humanitarian assistance and activity on the ground between the national state and the international community.

From 2009 important legislations were introduced in the protection of IDPs suffering from environmental or human-made disasters. The Climate Change Act of 2009 (CCA-2009) is an important legislation aimed to mitigate the risks caused by climate change, to reduce the risk of disasters and adapt to climate change. Important features of the legislation include pro-active measures supported by the law including local risk assessment and the identification of vulnerabilities as well as the empowerment of local authorities (Smith 2012).

The Hyogo Framework for Action (HFA) was a 10-year plan introduced in 2005 by 168 UN member states aimed at reducing the risks of disaster. This framework highly influenced another important but also controversial legislation adopted in 2010, the Philippine National Disaster Risk Reduction and Management Act (PDRRM). The law received positive approval for being a passage from a *posteriori* response to disasters towards an *a priori* strategy of effective disaster risk reduction and management (DRRM). The latter foresaw a decentralization of authority and a reallocation of responsibility and resources on a sub-national and local level.

The promising legislation revealed many deficiencies in its implementation according to an IDMC study of 2013. Main challenges were on the one hand the lack of capacity at the local level and on the other hand political will to actually implement the strategies. Another important challenge remained regarding the protection of the displaced people and the need of a human rights framework, which could be applied for the protection of the displaced (IDMC & NRC 2013).

Finally in February 2013 a pioneering legislation was adopted, including the recognition of the right of protection and assistance of IDPs in the case of environmental, political or other cases of displacement. It would not only lead to increased accountability, but also preventative displacement measures and the guaranteeing of compensation payments. However the Filipino President Benigno Aquino claimed that parts of the legislation were unconstitutional and vetoed the law. An important reason for the veto was certainly the fact that the Commission of Human Rights (CHR) would have gained importance in defining terms of displacement and the amount of compensation payments as well the ability of individuals to hold the state accountable in cases of displacement. Even though the Philippines is considered a country with a solid and reliable National Disaster Risk Reduction and Management

Council (NDRRMC), the country was completely overwhelmed by typhoon Haiyan and therefore the question has to be raised if the warning systems are still efficient enough given future risks of disaster (Neussner 2014: 9).

2. BIG, BIGGER, HAIYAN

2.1. Expectations and preparations before the storm

The typhoon season of 2013 was not particularly violent at the beginning, but increased in severity from October onwards. Evacuation warnings from the government and media were already diffused a few days before the arrival of the typhoon. Prior announcements to the arrival of Haiyan were already a sign of the extreme intensity and degree of the storm. Several hurricane experts all over the world already expected the strongest typhoon of the season. The Manila Observatory warned on November 7, 2013 that Haiyan could cause “catastrophic damages especially in the Visayas and islands in Southern Luzon, as well as parts of Northern Mindanao” (Ortiz et al. 7.11.2013) taking into account the available data together with the regional socio-economic characteristics of the population and other regions that could be partly concerned by the storm. At this point the typhoon had already developed high-speed winds and was expected to bring heavy rainfalls, which could lead to floods and inundations.

In preparation of the storm around 800,000 people had been evacuated and personnel as well as equipment to face the disaster had been installed (Chughtai 2013: 4). Even before Haiyan finally hit the coast of the Philippines the high speeds of the typhoon were predicted to be more than 195 mph (315-km/h) correspondent to Category 5 winds. This intensity held up when Haiyan first hit Guiuan in Eastern Samar and only gradually decreased intensity when passing over Leyte (Neussner 2014: 11). According to surveys conducted in the region the population was generally aware of the arrival of the storm and need of evacuation. Still many admitted that they did not completely understand the extent and true nature of the typhoon. Despite the evacuation appeals, the real danger of the typhoon was either underestimated or people remained in their homes because they were frightened of possible lootings (Neussner 2014: 45).

As mentioned above the central islands of the Visayas are extremely vulnerable. Only one month before the arrival of Haiyan an earthquake in the Bohol-region with a 7.2-magnitude had led to wide destruction and a humanitarian disaster causing displacement of more than 340,000 people (IDMC, 2013b). The reconstruction process was still ongoing and many people were already at risk (Than, 2013), housed in tents and temporary shelters. In only three weeks these people were displaced a second time as with many other people who had been affected by previous floods, earthquakes and less devastating typhoons.

2.2. The Typhoon hits the coast – immediate consequences and action

Haiyan turned out to be the strongest typhoon ever measured and the southern coastal areas of Eastern Samar province, where Haiyan first hit, had been over rolled by a storm surge of 10 meters height (OCHA-Philippines, 2013). According to OCHA in the municipality of Guiuan, the water-, power- and communication provision had completely collapsed, “all stores ha[d] been looted and medical facilities were completely destroyed. There [was] immediate need of food, water, medical supplies, shelter and generators. The team observed similar conditions in the surrounding municipalities” (OCHA-Philippines 2013).

In almost all regions the housing and public infrastructure got heavily damaged or destroyed. Furthermore, the shortage in food and water supply was a major problem as in some cases there was barely enough for a few days. Hospitals were also affected

and medical supply needed to accommodate the injured. The lack of precise information in the immediate aftermath of the crisis represented one main obstacle to rapid and effective action, as many areas remained inaccessible due to the destroyed infrastructure without any communication means.

Tacloban City was one of the most destroyed urban centers and was heavily affected by the typhoon with about 1.1 million houses destroyed (Duerr 28.02.2014). Major problems included not only lootings but also large groups of rural migrants heading to the city in hopes of assistance. The airport was also heavily damaged and the telecommunication network completely broke down.

On November 11 President Benigno Aquino declared a national state of calamity (OCHA-Philippines 2013) since the extent of the crisis became visible. The most affected regions were “Samar, Leyte, Cebu, Iloilo, Capiz, Aklan and Palawan”. An Action Plan requiring USD 301 million, later raised to USD 348 million, was launched by the Humanitarian Country Team to assist the affected people. Buildings and infrastructure were used to receive the entering help and provision. International mobilization was high and in a few days different funds were opened to collect donations and humanitarian assistance: the Haiyan Action Plan (OCHA-Philippines 2013) was launched on 12 November almost half of it funded by 40 UN Member States as well as the Central Emergency Response Fund (CERF), financed by public and private donors (IDMC 2013c).

3. TYPHOON HAIYAN: EVACUATION AND MASSIVE DISPLACEMENT

3.1. A highly complicated evacuation process

The tragedy of Haiyan continued in the weeks following after the disaster with an overstraining situation for both national authorities as well as international humanitarian assistance. Although these groups had assisted in previous recovery processes, they were still lacking in personnel. The destroyed infrastructure worsened the situation and the responsive capabilities of local authorities. As local governments were completely overburdened or non-functioning due to displacement, the national government took over relief operations and military command centers were established in concerned areas (Tacloban, Cebu, Roxas) with an established humanitarian center.

The Department of Social Welfare and Development (DSWD) declared that Haiyan had produced approximately 4.1 million IDPs in different regions of the affected areas, of which 65 percent originated in the Western and Eastern Visayas. According to UNOCHA, only 2 percent (around 100,000 people) of these displaced were accommodated in one of the 381 evacuation sites and unfortunately they are often the poorest and most harshly affected. However nearly 4 million displaced people are living outside of these evacuation facilities. They mostly left the region or found dwelling in family or neighboring shelters, whereas almost all are concentrated in the Western and Eastern Visayas (OCHA & UNEP 14.01.2014).

Some of the evacuation centers were also heavily damaged during the storm or completely destroyed. Those who did not stay in evacuation centers and had the right to return to damaged houses, built tents and makeshift shelters (IDMC 2013c).

In the aftermath of Haiyan, evacuation centers that had not been destroyed by the storm, often settled in different public buildings, were very quickly overloaded. Main deficiencies were often the lack of adequate equipment, water and sanitation facilities and sufficient space to host the large groups of people in need of shelter. Overcrowded centers as in Roxas and a lack in camp management capacity in Tacloban were still to be found even one month after the crisis (IDMC 2013b). The dangers of poor conditions in evacuations centers have to be taken seriously as they can provoke the spread of diseases, lead to social problems and conflict, to name a few.

3.2. Wide displacement and migration outflows

The displacement of over 4 million people mainly in the Western and Eastern Visayas remained a major challenge in the aftermath of Haiyan. The regions hit by Haiyan are among the poorest and most underdeveloped areas of the country and have a lower capacity to handle the crisis. More than 50 percent of the population in the Bicol and the Eastern Visayas live under the poverty line of USD 1.25 per day and malnutrition is widespread (IDMC 2013c). Long-term consequences include increasing indebtedness and vulnerabilities of an already poor population (Chughtai 2013: 2).

While disaster assistance slowly began to reach the most affected regions, the existing situation deteriorated further. A lack in shelter- and basic needs provisions resulted in a steady rise in the number of internal displacements. According to International Organization for Migration (IOM) estimates, from November 10th on, 5,000 people per day on average were leaving Tacloban towards the northern parts of the neighboring island of Samar or alternatively to the island of Cebu. The transport was extremely expensive and people were camping in the harbor or the airport in order to find a way to travel (IDMC 2013e).

The migration outflows further increased one week after the arrival of Haiyan and in an IOM report from the 14th of November, people leaving Tacloban via Ormoc city on the island of Leyte already accounted to 10,000 per day on average (IOM-Philippines Situation Report 14.11.2013).

The IOM was especially active to register the number of people forced to migrate through its Displacement Tracking Matrix tool (DTM), which was registered in various evacuation centers first in Tacloban and later also in Palawan. Food, water and health as well as beddings were identified as primary needs (IOM-Philippines Situation Report 15.11.2013). The Province of Palawan in the very Western part of the Visayas was the last Filipino Island hit by Haiyan, which damaged several cities in the northern parts and led to wide destruction of settlements. The huge lack of provision for basic human needs aggravated the situation even more (IOM-Philippines Situation Report 15.11.2013). The IOM's DTM pointed out main challenges on the concerned islands as to say the lack of electricity supply, of drinking water and shelter. Moreover the bad health situation and lack of medical assistance represented a major challenge while diarrhea and other diseases were expanding.

So-called temporary Family Rebuilding Centers or "tent cities" were provided by humanitarian organizations such as the Philippine Red Cross (PRC). These Centers are supposed to operate for a few months, after which inhabitants are supposed to find their own shelter in the immediate surroundings or to return back to the regions where they initially came from (Bongcac 04.03.2014).

3.3. Important consequences for the most vulnerable groups

The Philippines faced a range of problems in providing life-saving assistance, basic food, water, shelter and immediate health assistance. Vast destruction left many in remote locations non-contactable and without access to information. Two weeks after the disaster half of the affected people had still not received any humanitarian assistance, affecting the most vulnerable groups (pregnant women, children, the elderly and the disabled) either because there were no adequate programs designed to help these groups or because they were simply not reached with the existing aid relief (IDMC 09.12.2013). The risk of child abuse and trafficking grew significantly and according to IDMC after Haiyan, about 1.7 million of the displaced were children.

Among the displaced people only 103,000 could find shelter in one of the 385 evacuation centers run by the government, whereas 97 percent were living outside of those facilities. These already highly vulnerable groups are further exposed to risks of human exploitation as well as sexual abuse.

Abuses and violence in the aftermath of a great devastation does more commonly affect the most vulnerable groups: children, the elderly, the disabled, but especially

women and girls who became victims of hygienic and infrastructural deficiencies (lack of privacy or poor lighting) in and outside evacuation centers (IDMC 09.12.2013). Women as well as children faced a high risk of human trafficking in the aftermath of Haiyan, according to UNICEF approximately 1.7 million children were displaced, sometimes alone, towards big cities in search of work. Beside the psychological impacts of such a disaster, many children lost their daily routines and could not immediately return to school, often because the buildings were damaged during the storms or they were transformed into evacuation centers in the aftermath. Classes were often held only half-day and the lack of materials was widespread (Nguyen 2013: 1).

Haiyan also caused the displacement of more than 46,000 people over 60 years old, who not only lost their social networks but also were exposed to harsh conditions in evacuation centers without adequate attention from humanitarian assistance services (IDMC 09.12.2013).

Displacements were extremely harsh for pregnant women and in the first three months of 2014 around 1,000 births were expected daily in the regions affected by Haiyan (Nguyen 2013: 1).

In the case of displacement caused by Haiyan, food provision became a critical need for the displaced, as in their sudden migration they could only afford to take the minimum and were therefore highly dependent on emergency food assistance. According to IDMC, eleven days after the crisis about 2.5 million people in the most remote areas, especially in Capiz and Iloilo, were still cut off from services and could not get reached by food assistance services due to heavy structural damage (IDMC 2013b). This was expected after a national emergency, Haiyan IDP's food consumption levels did not only decrease in quantity, but also in quality and most of the displaced were at high risk for malnutrition.

In the aftermath of the crisis unconditional cash transfers were paid in the Western Visayas and helped relieve the population in these regions; but because the amount of payments relies on the fast progress of market recovery, expansion stayed quite humble with only 20 percent of the potential beneficiaries that were reached. In the Eastern Visayas, markets recovered slowly and almost no cash transfers were paid. (ICCHCT January 2014: 5). Relhousing of IDPs started very slowly and according to national authorities data will cost around USD 6 million (IDMC 2013e).

4. RETURNING AFTER TYPHOON HAIYAN

4.1. Difficulties in the assessment of returning IDPs

Among the internally displaced, the majority were deprived communities that are regularly affected by natural disasters and often have already experienced displacements. The affected find themselves in an endless downward spiral of poverty and vulnerability, which makes recovery nearly impossible. Accurate figures of the number of displaced people are difficult to obtain as displacement and resettling is constantly changing. Due to the fact that most of the displaced stayed with host families and relatives, it is expected that numbers may be underestimated, yet overestimation is also a possibility as 'double registration' is a common strategy to obtain additional assistance.

It is reported that a few days after the disaster many of the displaced people returned to their homes and it is generally expected that many of the internally displaced will return to their former regions, which were hit by the typhoon. This requires a major need of material and financial support which is necessary for the reconstruction process. Most of the people lost community facilities, as well as official and legal property documents, which must be recuperated. Assistance in reinstating landowner rights is also needed (IDMC 2013b).

Many of the displaced had already returned a few hours after the storm. There are recorded migration flows towards urban slums in other major cities of the Philippines such as Cebu City or Manila, where around 20,000 people arrived in the month after the disaster (IDMC 2013b). These groups of displaced people often arrived to overcrowded areas with high poverty levels and did not get the necessary assistance. Young people, especially those of working age left for big cities like Manila or Cebu in search of work and support, often leaving their children and relatives behind (UNHCR 06.12.2013). However, some fail to find a job and to rebuild a new life in the big urban centers that are already overcrowded and are sometimes forced to return to their regions a few weeks or even several months later. Returnees can get financial support from the Department of Social Welfare and Development (DSWD) to pay relocation fees but the costs usually exceed the amount paid by the Department. Returnees often have to pay additional fees to return from the big cities (Henneka & Chowdhury 2014). To overcome this problem, some regional governments have tried to organize collective repatriation for small groups of displaced people by the Air Force planes or Navy ships. This would also allow the returnees to take the goods they have accumulated during their displacement (Bongcac 04.03.2014).

A few months following the disaster many have returned and started rebuilding what Haiyan has destroyed, businesses reopened and houses were reconstructed. By the end of January, people living in displacement sites had decreased to around 26,000, meaning that many have used the emergency shelter material to rebuild on the areas which were affected by the typhoon (ICCHCT January 2014: 9). Already one month after the catastrophe tens of thousands of displaced people started to come back, with nearly 100,000 remaining in the existing evacuation centers. Humanitarian organizations like UNHCR distributed tents as temporary shelters, as well as solar lights for electricity provision. By February 2014, three months after the landfall of Haiyan, 5,000 people have still not returned to their homes in Tacloban. This has important economic impacts on the country; Haiyan is estimated to have caused an economic loss of 0.9 percent of GDP in 2013, a sum of 101.79 billion Filipino Pesos (Neussner 2014: 10).

4.2. Long-term challenges for returnees

In the immediate aftermath of typhoon Haiyan improvement of the situation was attributed to the rapid humanitarian response. However many challenges still remain for returning IDPs, who are facing difficulties rebuilding their lives as a result of decreasing aid inflows.

Agriculture and Nutrition

A few months after the storm, about one third of the affected population still remained food insecure (OCHA & UNEP 14.01.2014). The returnees are also at high risk for nutrition deprivation because of the great agricultural losses and destruction of material induced by Haiyan. According to the UN Food and Agriculture Organization (FAO) devastation of the agricultural sector, as well as of fishery and forestry, is immense and will endanger the provision of food for several thousand people. Most fishermen and farmers have lost their livelihoods. Without assistance to provide the needed seeds and material, they will not be able to provide crops in the next season. When Haiyan hit the country the rice-planting season was just about to begin (FAO-Philippines 2013a). This will have devastating effects not only on the regional population, but also on the entire country as these crops make up for one third of the nation's rice production (IDMC 2013b).

The coconut industry was also heavily impacted with many trees damaged or destroyed. As a result over 1 million livelihoods are concerned especially because the plantation of new coconut trees takes several years (FAO-Philippines 2013c).

Even though the crop production of rice and cereals at the national level seems to be secured, assistance has to concentrate on regions that were affected by the typhoon (FAO-Philippines 2013b). Agricultural infrastructure has to be rearranged in order to assure cultivation and provision in the long-term. Rice input packages were distributed by humanitarian organizations, but because of heavy rain and flooding at the start of 2014 and the missing drainage capacity the rice crops were once again destroyed. About 1,000 livelihoods were affected (ICCHCT January 2014: 5).

The provision of Health and Water, Sanitation and Hygiene (WASH) services was one of the most urgent needs from the very beginning onwards. Various humanitarian actors contributed to a swift response in providing needed services as well as supporting further local capacity building. However, long-term solutions for the most vulnerable people and those living in remote areas remain very difficult. The transition between first emergency responses towards effective recovery still remains a major challenge (ICCHCT January 2014: 17ff.).

Rebuilding

The typhoon has damaged about 1,140,332 houses, half of which were totally destroyed (OCHA & UNEP 14.01.2014). Especially problematic were regions where even a few months after the typhoon destruction is widespread, rebuilding is slow and reconstruction is of poor quality. Many returnees began to rebuild their houses with the material. Due to the high costs of rebuilding, people are often unable to replace their professional equipment that was damaged by the storm. The storm also destroyed small businesses, traditional vehicles such as fisher boats and transport means in general. One of the crisis responses by the 'Shelter Cluster' were to provide households with tarpaulins, but given the extent of the damages and the high number of people affected, a compromise of one tarpaulin per household was met. However in the long-term this is considered to be insufficient taking into account the weather conditions and the short lifespan of the material. Finally from the 400,000 households that obtained emergency shelter assistance 83 percent received only 1 tarpaulin (ICCHCT January 2014: 9).

Equally significant, almost all shelter assistance (95 percent) was given to coastal areas, while 40 percent of damaged houses are inland (ICCHCT January 2014: 9).

Schools and other public buildings were also heavily damaged and many were not rebuilt in an adequate timeframe. By the 6th of January 2014 most of the schools had reopened, nevertheless only some could afford to open half-day. Material remains scarcely available and the fact that other buildings are still damaged means that some children stay outside of school for an extended time.

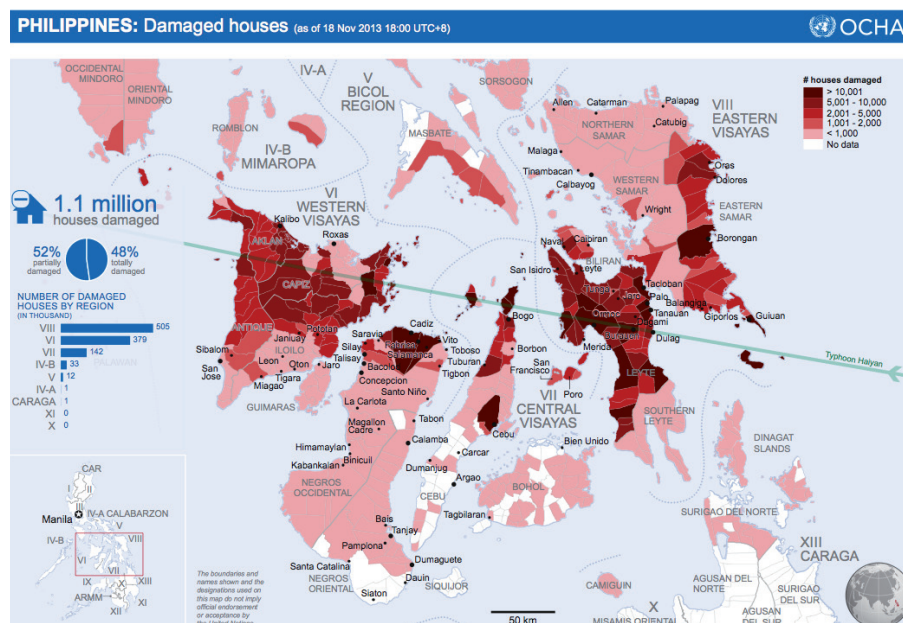
Rebuilding assistance has been unsuccessful in many regions and as evacuation centers began to close while relocation sites were yet unfinished, people have started to resettle in 'dangerous areas', regions declared unsafe by the government because of their immediate proximity to the sea. This has led to increased vulnerability for those who are highly probable to suffer from future storms and environmental disasters (Yeo 12.02.2014). However even the declaration of the so-called 'No build' zones has led to resistance by inhabitants claiming the deprivation of livelihood. The fishermen in Tacloban City for instance, protested against these measures (Yeo 2014).

According to UNOCHA (16 January 2014) up to two months after the typhoon, many people were still dependent on humanitarian assistance and only 52 percent of the needed funding had reached the Philippines. Rebuilding was extremely slow and by February 2014, only 20 percent of the funding for material and tools to rebuild the houses was secured. The forthcoming rainy season complicates the process even further.

Apart from the significant lack of financial support for reconstruction, the unclear specification of the 'no build' zones (ICCHCT January 2014: 9) complicates

and prolongs the rebuilding process. People placed in so called ‘bunkhouses’¹ or people who returned to live in ‘no build’ zones will likely suffer from repeated displacement, furthering the demand for well-planned relocation sites.

Map 4. Damaged houses by Typhoon Haiyan



Source 4: OCHA 18.11.2013: iv. Map provided courtesy of the UN Office for the Coordination of Humanitarian Affairs. The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations

By the end of February, only 20 percent of the city of Tacloban had restored electricity. Many were forced to rush home before sunset and the activities of small family businesses to big firms remained extremely restrained as a result of infrastructural deficiencies (Duerr 28.02.2014).

Employment and Economic recovery

Vast destruction accompanied by widespread displacement has led to the loss of livelihood and employment of millions of workers. According to the International Labor Organization, about 6 million workers were affected in total, whereas prior to the typhoon 2.6 million were already in a vulnerable state in poor regions (ILO 17.02.2014). Two types of professional activity can be characterized: agriculture and fishery in one category and non-agriculture/non-fishery activities in the other. However all employment sectors have experienced an approximate 50 percent decline in profits (OCHA & UNEP 14.01.2014).

One of the strategies implemented was the inclusion of the affected workers in restoration of the public and economic infrastructure. The initial target of 200,000 workers was missed by far and only 15 percent received short-term trainings and were engaged in the restoration projects. More successful was a cash-for-work activity in

1. Bunkhouse can be defined as “a rough building, often with bunk beds, used for sleeping quarters, as for ranch hands, migratory workers, or campers”(Dictionary.com).

Leyte and Eastern-Samar where people were engaged in clearing the debris of public buildings. Especially in the short-term the cash input proved to have a crucial impact on IDPs (ICCHCT January 2014: 15). With international support the Department of Labor and Employment (DOLE) set up other emergency employment programs in some regions offering a decent job, social security provision and skill-trainings (ILO 17.02.2014).

In order to secure fast resumption of agricultural activity, rice seed input packages were distributed shortly after the disaster to over 100,000 households in order to secure cultivation in the following planting season. This measure successfully supplied 1,000 households that were affected by the floods. Concerning fishery, the repair or distribution of material like boats and general gear for fishing, were still not vastly needed. However the FAO together with the Bureau of Fisheries and Aquatic Resource (BFAR) are initiating information campaigns and are working especially on needs assessments to identify the best solutions (ICCHCT January 2014: 13). Concerning employment and economic development, IDPs and returnees are still suffering from under-employment and insufficient economic activities due to the lack of funding, professional reintegration programs and long-term solutions.

5. POLICY RESPONSES AND CHALLENGES

Completely overwhelmed by the Haiyan disaster, President Aquino admitted: "The system failed. We had a breakdown in power, a breakdown in communications, a breakdown in practically everything" (GMA News/ HS 19.11.2013).

The Filipino disaster management is coordinated and led by the National Disaster Risk Reduction and Management Council (NDRRMC), which handle different public requests as well as the military and representatives of the civil society (Chughtai 2013: 7). Apart from the life-saving needs provided by national and international institutions, future planning of options to support the displaced after environmentally induced catastrophes were on the government's agenda. The Filipino government introduced a recovery and rehabilitation strategy, the "Reconstruction Assistance on Yolanda (RAY)" plan (Neussner 2014: 10). The National Economic and Development Authority (NEDA) established a framework and an investment of PHP 361 billion, more than USD 8 billion, over a period of three years in the rebuilding process of buildings and societal infrastructure (education, health, social services, and employment). The objective was to not only re-install pre-disaster conditions, but also to increase risk prevention (Nguyen 2013: 2). The complexity of the crisis led to a disordered coordination and lack of leadership in disaster management, but was then resolved on December 2, when former Senator Pantillo Lacson, was appointed head of rehabilitation and reconstruction (Chughtai 2013: 7).

Haiyan was classified *Level 3 emergency* with the *highest disaster response*² by the UN and within a day a multi-faceted "emergency response team" was enacted. While some UN agencies displayed a quick and efficient response, others struggled initially but implementation gradually improved over the first few weeks (Chughtai 2013: 7). Both international and national partners coordinated the initial responses and just two days after Haiyan's landfall, 12 clusters to supervise and coordinate humanitarian action began in Manila and sub-clusters were enacted in the concerned regions.

Regional and international financial support was also important and exceeded

2. The Inter-Agency Standing Committee (IASC) Transformative Agenda (TA) introduced Level 3 (L3) emergency for major humanitarian crises. The time-bound L3 was issued by the Emergency Relief Coordinator (ERC) and obligates humanitarian agencies to make available "the leadership capacities, funds, supplies and personnel required to support the Government's Response." (ICVA 2013).

the attention and financial support of other humanitarian crisis. The Philippines' co-members of the Association of Southeast Asian States (ASEAN) all contributed to humanitarian donations. Internationally the financial response³ was high with USD 391 million mobilized in the first three weeks. Traditional donors, some Gulf countries, multilateral organizations and private individual donors also greatly contributed financially (Chughtai 2013: 7).

Information for IDPs remained a problem for an extended period and many were unaware of relief distributions. Despite the improvement of logistical problems, those in remote areas could not be reached or receive any relief measures even two weeks after the first landfall (IDMC 2013e). Precise data and information on IDPs is crucial when responding to such disasters and must be available throughout the initial phases of displacement through returning and even after building up their new livelihood.

The vast financial assistance from national and international mobilization in the aftermath of Haiyan contributed greatly to relieve the situation of the displaced. However additional financial support especially long-term is needed to assist the people in returning or resettling. A major source of difficulty for long-term planning possibly stems partly from inadequate accountability of local authorities (IDMC December 2013). Further capacity building at the local level is necessary, including the acknowledgement of IDPs rights' by local governments and efficient data collection.

International funding for immediate recovery was important for broad support of urgent humanitarian needs. An elevated humanitarian emergency level was declared and all international agencies and institutions agreed to assist the Filipino government and even sent deputies into sub-regions to assist the local authorities directly.

NGOs and local community groups displayed great effectiveness and played a crucial role in the first days following the disaster. Even still, the main challenges were modes of delivery due to a lack of transport means and destroyed infrastructure (Chughtai 2013: 8).

International organizations played an important role in assisting the government financially and enabled humanitarian action, but assisted with the coordination and administration process of evacuation and resettlement. Financial assistance and possible long-term underfunding is a grave concern due to the immense need for infrastructure. Also as demonstrated in the case of Haiyan, additional solutions at community level are needed, with regards to access to remote areas, and accurate information about the local population, infrastructural conditions and general needs. Communities should be further integrated in the development of protection networks and design of response mechanisms (IDMC, 2013b).

6. CONCLUSIONS

The case of Haiyan in the Philippines has shown the world once again how destructive environmental disasters can be, how heavily they affect human livelihood and how they may lead to large displacements with important short- and long-term consequences. Even in the months following the disaster, the most severely affected regions still suffered from vast destruction and a slow recovery and reconstruction process. Entire cities and areas are still in ruins and have not recovered economic activity. Basic life conditions remain alarmingly low (Del Mundo 11.03.2014). Given the violent situation of its population after Haiyan, the Philippines currently finds itself

3. The largest contributors were: US, UK, Japan, Australia, Canada, Sweden, UAE, NL & Saudi Arabia (Chughtai 2013: 7).

in urgent need of adaptation and protection measures as it is a country extremely vulnerable to natural hazards. Innovated legislation needs to be established to allow for the realization of IDPs' rights.

Funding and institutional capacity

Although international aid was critical in supporting on-site assistance, the case of Haiyan has revealed gaps in essential provision of nutrition and shelter. We could also observe an urgent need to improve coordination and management between the different actors and local authorities. Increased long-term funding is needed to support the recovery process of concerned populations in these vulnerable regions.

Greater transparency is also needed, as demonstrated in claims that local and regional officials unequally distributed funds. The availability and distribution of funds must be public and transparent to avoid mistrust and the disadvantages for some groups and individuals (Chughtai 2013: 7).

Local actors have to be further empowered as they are proven to have a great impact on DRR and coordination in the aftermath of the crisis. There should be an increased participation on behalf of local governments and NGOs and civil society members should be further integrated in policy response designs and implementation following natural disasters in order to facilitate swift recovery.

Humanitarian assistance, reintegration and resettling

When IDPs return to rebuild their houses they need special food assistance and compensation payments for full recovery. In the case of Haiyan we could see that the support is often not offered long enough and distributed unequally. In the Eastern and Western Visayas especially, many people live in remote areas and it can take several days to reach them.

Returnees also require special attention and adaptation measures. The local population has to be sufficiently prepared for future disasters and to decrease their vulnerabilities during natural hazards. Relocation to safer areas has to happen as quickly as possible in order to avoid inadequate temporary solutions. The responses to Haiyan have also exposed important deficiencies in construction including of the evacuation centers. Therefore norms and minimum standards are needed to ensure durable reconstruction and avoidance of the structural vulnerabilities. In the future, more coordinated action is needed and the concerned population has to be well informed and included in the decision-making process.

As the Eastern and Western Visayas are regularly hit by environmental disasters, inhabitants highly vulnerable and often experience repeated displacements. Rapid and efficient assistance is needed in order to find long-term solutions to stabilize the livelihood of these IDPs, prevent the risk of future displacement and increase the capacity to absorb external shocks (IDMC, 2013b). Post-Haiyan rehabilitation and planning activities have to take geological characteristics and elements of risk exposure into account in order to make the region more resilient towards future natural disasters (SciDevNet 12.03.2014).

Legal protection and ownership rights

Returnees often face serious problems in claiming their property and land ownerships and their rights need to be reinforced by assistance and a clear legal framework. Likewise returnees have to be supported through compensation and reconstruction programs to rebuild their livelihoods as soon as possible (IDMC 2013b). IDPs who were victims of lootings or those who lost official documents should have access to compensation payments and administrative assistance.

The Philippines should advance in introducing an innovative legislation framework in order to protect and assist IDPs. They may set a milestone in this field, acting as global model for other concerned nations.

International negotiations and climate change-induced displacement

The increasing numbers of persons displaced by natural hazards and environmental degradation are on the rise. Yet they cannot be completely ascribed to climate change. An urgent need exists for more in-depth research and data collection to support international policy-making to assist IDPs hit by natural disasters.

During the the 2013 COP taking place in Warsaw, expectations were high that the disastrous images from displaced people and complete destruction after typhoon Haiyan could have an impact on the debate about compensation payments between global partners, but especially between industrialized and developing countries. The prevention of displacement and disaster management *ex ante*⁴ has to be the central issue in the discourse instead of limiting the negotiations to *a posteriori* consequences like 'loss and damage' mechanisms⁵ (IDMC 2013e,f).

Risk reduction and adaptation measures

Past experiences have shown that the step-up of investment in Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) was efficient and *a fortiori*⁶ increased also by international donors. Warning systems have to become more widespread and affordable so they can be utilized on a large scale (World Bank, Adaptation). Internationally, further exchange of experiences and lessons learned are needed to generate best practices. Haiyan has exposed the vulnerability of poor people and the very harsh ways they are hit by natural disasters. Therefore the reduction of poverty and inequality levels simultaneously with the empowerment of the most vulnerable groups of the society has to be further pursued (Chughtai 2013).

A renewed debate on disaster risk management

The great humanitarian devastation consequences caused by Haiyan have opened up a new debate about the legal framework and the instruments of Disaster Risk Management. The United Nations Office for Disaster Risk Reduction (UNISDR) launched a debate with the aim to reform the existing Hyogo Framework for Action⁷, which was introduced after the great disaster of the tsunami in the Indian Ocean in 2004. It can be inferred that environmental catastrophes will be multiplied in the future and not only heavily affect the Philippines, but many other regions in the world. This has created an important demand, which is to develop a "new global framework for disaster risk reduction" (UNISDR 12.11.2013).

Since the beginning of 2014 and in preparation for the upcoming typhoon season, UNISDR and global insurance companies have developed and presented a new catastrophe scheme for the Philippines in order to enable and facilitate budgetary support in cases of natural disasters: *The Philippines Risk and Insurance Scheme for Municipalities (PRISM)* (UNISDR 20.01.2014). The new scheme responds to the need to disaggregate and simplify insurance payments as well as the empowerment of municipalities and affected people, which will be more protected and covered by insurance in case of natural disasters. ♦

4. 'Ex ante' can be defined as "Based on forecasts rather than actual results" (Oxford Dictionaries).

5. Introduced at COP19 in Warsaw (2013) these mechanisms aim to identify and promote efforts to address loss and damage in vulnerable developing countries associated with impacts of climate change (UNFCCC 2013).

6. 'A fortiori' can be defined as "Used to express a conclusion for which there is stronger evidence than for a previously accepted one" (Oxford Dictionaries).

7. The Hyogo Framework for Action (HFA) UN-Plan to reduce the risks of disaster (see section 2.2 in this paper).

BIBLIOGRAPHY

BOOKS AND REPORTS

- Alliance Development Works. 2013. World Risk Report 2013. Focus: health and healthcare. Berlin: Alliance Development Works.
- Barber, Rebecca. 2013. Localizing the Humanitarian Toolkit: Lessons from Recent Philippines Disasters. Save the Children and the ASEAN Agreement for Disaster Management and Emergency Response (AADMER) Partnership Group (APG).
- Chughtai, Shaheen. 2013. Typhoon Haiyan: The response so far and vital lessons for the Philippines recovery. Oxfam International. Oxford, UK.
- Inter-Cluster Coordination Group for the Humanitarian Country Team. 2014. Periodic Monitoring Report (November 2013-January 2014): Typhoon Haiyan (Yolanda).
- IOM-Philippines Situation Report. 14.11.2013. Typhoon Haiyan.
- IOM-Philippines Situation Report. 15.11.2013. Typhoon Haiyan.
- Kok, Frederik. 9.12.2013. Philippines: Comprehensive response to wave of displacement crises needed. Internal Displacement Monitoring Centre (IDMC).
- Maloney, May. 2014. See me, ask me, hear me: children's recommendations for recovery three months after Typhoon Haiyan. Save the Children. Manila, Philippines.
- Neussner, Olaf. 2014. Assessment of Early Warning Efforts in Leyte for Typhoon Haiyan/Yolanda. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Manila, Philippines.
- Nguyen, Trinh D. 2013. After the storm: The Philippines copes with catastrophe. HSBC Global Research, The Hongkong and Shanghai Banking Corporation Limited.
- OCHA & UNEP. 14.01.2014. Typhoon Haiyan (Yolanda) Philippines-Environmental Situational Overview, Joint UNEP/OCHA Environment Unit.
- OCHA-Philippines. 12.11.2013. Philippines: Typhoon Haiyan: Situation Report No. 6.
- Saferworld Viewpoint. 2013. Typhoon Haiyan: Philippines. Think Long-Term,

Act Local.

- UNHCR. 18.11.2013. Philippines: Typhoon Haiyan, External Update #5, <http://www.unhcr.org/528b24a89.pdf>.

ARTICLES

- Asia-Pacific Analysis: Raising public trust in science, <http://www.scidev.net/asia-pacific/education/analysis-blog/asia-pacific-analysis-raising-public-trust-in-science.html>
- Capili EB, ACS Ibay and JRT Villarin. 2005. Climate Change Impacts and Adaptation on Philippine Coasts. Proceedings of the International Oceans 2005 Conference. 19-23 September 2005, Washington D.C., USA. Pp. 1-8.
- Eckstein, David and Kreft, Sönke. 2013. Global Climate Risk Index 2014: Who Suffers Most from Extreme Weather Events? Weather-Related Loss Events in 2012 and 1993 to 2012. Briefing Paper. Germanwatch. Bonn, Berlin, Germany.
- International Council of Voluntary Agencies (ICVA). 2013. Emergency Directors: Typhoon Haiyan in the Philippines: Analysis of the Classification of the Emergency.
- Internal Displacement Monitoring Centre (IDMC), Norwegian Refugee Council. 2013. A Bend in the road is not the end of the road – the veto of the IDP Act in the Philippines.
- Internal Displacement Monitoring Centre (IDMC). 2013a. Disaster induced internal displacement in the Philippines/ The case of Tropical Storm Washi/Sendong.
- Internal Displacement Monitoring Centre (IDMC). 2013b. Comprehensive response to wave of displacement crises needed.
- Internal Displacement Monitoring Centre (IDMC). 2013c. 1 in 10 Filipinos affected by Haiyan, as picture of mass displacement emerges.
- Internal Displacement Monitoring Centre (IDMC). 2013d. Why should governments negotiating on climate change care about displacement?
- Internal Displacement Monitoring Centre (IDMC). 2013e. Increasing movement of IDPs out of the areas worst affected by Haiyan as displacement figures rise to over 4.4

million.

- Internal Displacement Monitoring Centre (IDMC). 2013f. Update from COP19: Displacement sidelined as negotiations bottleneck around money talk.
- Ortiz, M.; Lorenzo, G.; Gozo, E.; Antonio, R.; Dado, J., Narisma, G. (7.11.2013) Typhoon Haiyan Brief Technical Report, Manila Observatory.

PRESS ARTICLES

- Agence France-Presse with GMA News/ HS. 19.11.2013. PNOy: Yolanda caused 'breakdown of practically everything', GMA News Online, <http://www.gmanetwork.com/news/story/336086/news/nation/pnoy-yolanda-caused-breakdown-of-practically-everything>
- Aroy, Marissa. 11.12.2013. Displaced families struggle to rebuild their lives after Typhoon Haiyan, UNICEF, At a glance: Philippines, http://www.unicef.org/infobycountry/philippines_71516.html.
- Bongcac, Doris C. 04.03.2014. Leyte survivors choose to rebuild lives in Cebu City, Inquirer Visayas, <http://newsinfo.inquirer.net/582000/leyte-survivors-choose-to-rebuild-lives-in-cebu-city>.
- Burgos Jr. Nestor P. 22.03.2014. 'No-dwelling zones' stump mayors, Inquirer.net, <http://newsinfo.inquirer.net/587945/no-dwelling-zones-stump-mayors>
- Del Mundo, Fernando. 11.03.2014. PHILIPPINES : Après le cyclone, une reconstruction précaire, Courrier International from Philippine Daily Inquirer, <http://www.courrierinternational.com/article/2014/03/11/apres-le-cyclone-une-reconstruction-precaire>
- Duerr, Roxana Isabel. 28.02.2014. Tacloban's arduous recovery after 'Haiyan', Deutsche Welle, <http://www.dw.de/taclobans-arduous-recovery-after-haiyan/a-17463609>.
- FAO-Philippines. 2013a. Severe damage to agriculture and fisheries after Typhoon Haiyan, (12.11.2013), <http://www.fao.org/philippines/news/detail/en/c/209358/>.

- FAO-Philippines. 2013b. Farmers hit by Typhoon Haiyan need urgent assistance, (19.11.2013), <http://www.fao.org/philippines/news/detail/en/c/209357/>.
- FAO-Philippines. 2013c. FAO and Canada to help Philippine coconut farmers rehabilitate their livelihoods hit hard by Typhoon Haiyan, (08.04.2014), <http://www.fao.org/philippines/news/detail/en/c/223341/>.
- Henneka, Gregor & Chowdhury, Zafrin. 11.02.2014. Typhoon Haiyan: Rebuilding lives, returning to school, UNICEF-Philippines, Blog Archive.
- International Labour Organization (ILO). 17.02.2014. 100 days on, Haiyan survivors need more jobs to recover, http://www.ilo.int/global/about-the-ilo/multimedia/features/WCMS_235739/lang--fr/index.htm
- Mcshane, Larry & Schapiro, Rich. 09.11.2013. Typhoon Haiyan death count could reach 10,000 in Central Philippines: officials, New York Daily Times, <http://www.nydailynews.com/news/world/typhoon-haiyan-kills-1-200-philippines-report-article-1.1511577>
- Nunez, Enrique. 22.11.2013. Typhoon Haiyan's Impact Felt at United Nations Climate Change Conference in Warsaw, News Watch, National Geographic, <http://newswatch.nationalgeographic.com/2013/11/22/typhoon-haiyans-impact-felt-at-united-nations-climate-change-conference-in-warsaw/>.
- SciDevNet. 12.03.2014. Rebuilding from Super Typhoon Haiyan's devastation, <http://www.scidev.net/asia-pacific/disasters/feature/rebuilding-from-super-typhoon-haiyan-s-devastation.html>
- Smith, Thierry. 04.05.2012. Is the Philippines' climate law the best in the world?, Responding to Climate Change (RTCC). <http://www.rtcc.org/2012/05/05/is-the-philippines-climate-law-the-best-in-the-world/>.
- Than, Ker. 07.11.2013. Super Typhoon Haiyan Headed Toward Philippines: Super typhoon Haiyan looms as this year's strongest ocean storm, National Geographic, <http://news.nationalgeographic.com/news/2013/13/131106-supertyphoon-haiyan-yolanda-philippines/>
- UNFCCC. 2013. Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts. http://unfccc.int/adaptation/workstreams/loss_and_damage/items/8134.php.
- UNHCR. 6.12.2013. One month on, typhoon Haiyan survivors start to return home, Press Release, <http://www.unhcr.org/52a1a0c49.html>.
- UNISDR. 12.11.2013. Super Typhoon Haiyan "a turning point" for disaster risk management, <http://www.unisdr.org/archive/35452>
- UNISDR. 20.01.2014. Typhoon Haiyan losses trigger major new proposal on catastrophe insurance for the Philippines, <http://www.unisdr.org/archive/36205>.
- Yeo, Sophie. 12.02.2014. Philippines warning as communities return to danger zones post Haiyan, Responding to Climate Change, <http://www.rtcc.org/2014/02/12/philippines-warning-as-communities-return-to-danger-zones-post-haiyan/>.
- Yolanda (Typhoon Haiyan): Aid, donations from int'l community: <http://www.rappler.com/nation/43310-yolanda-international-community>
- Young, Robin. 12.11.2013. Researcher: Climate Change To Cause Human Migration, here & Now, Interview with Susan Martin, director of the Institute for the Study of International Migration at Georgetown University, <http://hereandnow.wbur.org/2013/11/12/climate-change-migration>

WEBSITES

- Dictionary.com, <http://dictionary.reference.com/>.
- International Organisation for Migration, Asia and the Pacific, Philippines, <https://www.iom.int/cms/philippines>.
- Oxford Dictionaries, <http://www.oxforddictionaries.com/es/>.
- Reverso Dictionary, <http://dictionary.reverso.net/>
- United Nations Office for the Coordination of Humanitarian Affairs, Typhoon Haiyan, <http://www.unocha.org/crisis/typhoonhaiyan>.
- World Bank, Philippines Dashboard, Overview, Vulnerabilities, Adaptation Options by Key Sectors, http://sdwebx.worldbank.org/climateportal/home.cfm?page=country_profile&CCode=PHL&ThisTab=Dashboard.

FRANCESCA BOCCHINI

One typhoon after another: Viet Nam in Fall 2013

Climate change and natural disasters in the Central Region

With approximately half of its population being settled in low-elevation coastal zones, Viet Nam is considered one of the most vulnerable countries in the world in relation to climate change (ADB, 2012) and sudden-onset disasters. Every year the Vietnamese coastal areas suffer from the impact of four to six storms on average (Pilarczyk and Si Nuoi, 2009). Both the intensity and frequency of natural disasters have increased in the past few years, provoking 9,500 deaths and missing, along with an economic loss of 1.5% of the GDP from 2001-2010 (National Strategy on Climate Change, 2011).

In the fall of 2013 the Viet Nam Central Region was hit by three typhoons within five weeks. On September 30, typhoon Wutip hit the Central Region bringing heavy rains, flash floods and strong winds. Only two weeks after, it was the turn of typhoon Nari, which exacerbated the already critical living conditions of local communities in the central coastal areas and provoked extensive flooding. Following the disastrous passage of typhoon Haiyan in the Philippines on November 8, 2013, the Vietnamese government implemented emergency evacuation plans. On its way to Viet Nam, the super typhoon Haiyan reduced its intensity and eventually reached the coastal north-eastern province of Quang Ninh bringing heavy rains and winds before moving to China as a tropical depression (IFRC, 2013b). The typhoons had far-reaching consequences, provoking deaths and wounded, but also serious damages to livelihoods and economic resources, increasing local people's vulnerability. Moreover, the compelling proximity of natural disasters highly affected people's preparedness and recovery.

Evidences show that internal migration from rural to urban areas (UNFPA, 2009), but also from rural to rural areas, are progressively increasing; highlighting the relationship between the impoverishment of people in highly affected areas and displacement. Environmental disasters seem to boost short-term migration during the dry season, conceived as a common coping strategy to improve household living standards (De Brauw, 2010). 2013 typhoons could therefore contribute in triggering longer-term consequences on the migration patterns of the affected populations.

To respond to climate change the Viet Nam Government and international and national NGOs have proposed and undertaken several structural and non-structural measures in the framework of the National Strategy for Natural Disaster Prevention, Response and Mitigation (2007-2020) and the National Strategy for Climate Change (2011) in order to empower local communities in the event of natural disasters.

This paper aims to assess the repercussions of the fall 2013 natural disasters on the lives of locals in the Central Region and questions the nexus between environmental

catastrophes and the displacement of persons. It will firstly overview of the exposure of the Central Region in relation to climate change focusing on floods and coastal retreat. It will secondly describe the impact of the three typhoons (Wutip, Nari and Haiyan) in the Central Region and then analyze the implementation of evacuation, as a short-term forced displacement, and of relief programs. It will thirdly discuss the long-run effects of natural disasters on internal migration patterns and social structures, particularly analyzing the possible connection between temporary migration and the last typhoon season. It will fourthly assess the efficacy of the governmental policies in response to the 2013 typhoons and local capacity building programs as a long-term response for improving mitigation and resilience.

1. THE CENTRAL REGION: AN EXTREMELY VULNERABLE COAST

The Central Region is highly prone to water or water-related disasters (Sternin, 2003). It is indeed exposed to both typhoons and monsoons. The typhoon season starts in June and ends in November, whereas the monsoons cause torrential rains from September to December (Pilarczyk and Si Nuoi, 2009). Despite the majority of the territory being mountainous and hilly (85% in the Quang Binh province), the high fertility of the coastal areas in the river deltas makes it the most economically dynamic (UNDP, 2012) and densely populated (ADB, 2012). This inevitably means that when a natural disaster hits the region, the livelihood of a large amount of people is affected requiring not only the deployment of prompt assistance, but also effective prevention and rehabilitation mechanisms to mitigate the disaster effects.

From a topographic perspective, low-lying plains and short rivers characterize the coasts of the Central Region. During the rainy season, water streams overflow creating flash floods (Pilarczyk and Nuoi, 2009). These phenomena are hard to forecast and therefore require an immediate response. The flooding often provokes landslides and can also lead to slow-onset disasters, such as salinity intrusion, which severely affects the productivity of agricultural lands and irrigation systems for years (Pilarczyk and Nuoi, 2009).

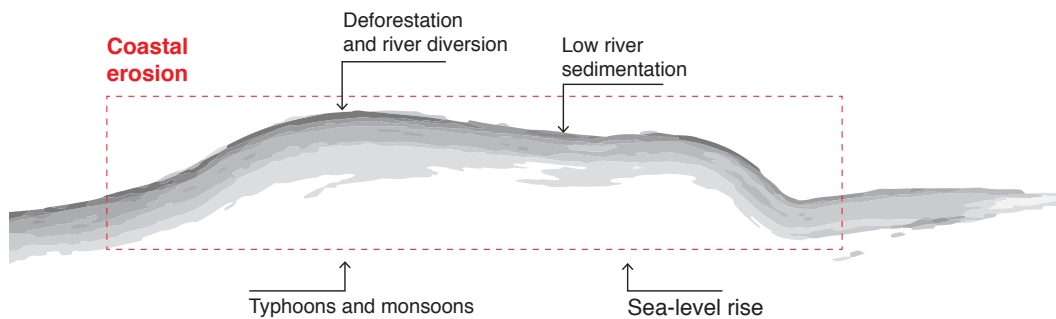
Furthermore, the Central Region suffers from the effects of climate change, such as coastal erosion, which has been recorded in 263 sites distributed over all the provinces (Huy Tien, 2005). The main reasons behind erosion are: the composition of the coast, the vast majority of the eroded sites (93.7%) being composed of sand, the effects of strong winds and waves in the event of natural disasters, such as typhoons. Another contributing factor to erosion is the low-level of river sedimentation (covering 5,200.4 ha in 2005), which does not compensate for coastal erosion (covering 8,839 ha in 2005) (Huy Tien, 2005), and has been reduced by the construction of dams, causing a retreat of up to 1 kilometer in 20 years (Pilarczyk and Nuoi, 2009).

Despite the existence of sea-dykes and tree plantation programs, coastal erosion has not halted due to the long-term impact of deforestation practices and river diversion (Gegar Prasetya, FAO). In October 2013 the Viet Nam Administration of Seas and Islands issued a report concerning the status of coastal erosion in the country corroborating this finding: “121 areas where are built dykes and plant trees against waves [...] still suffer from erosion. In particular, Thanh Hoa has 18 km of coastline eroded at a rate of 15-30 m per year. Coastal erosion is breaking dykes, causing flooding, saltwater intrusion in the area” (Viet Nam Administration of Seas and Islands, October 28, 2013).

It is estimated that Viet Nam will be one of the main victims of sea-level rise, which consequently will bring an aggravation of coastal erosion and salt penetration. According to the Asia Development Bank (2012), “Given a 1-meter sea-level rise, Viet Nam would be the most affected developing country in terms of population (10.8%), GDP (10 percentage point reduction), and wetlands inundated (28%)”.

As aforementioned, Viet Nam is critically prone to sudden-onset disasters, namely typhoons and tropical storms. Studies assert that the number of typhoons hitting Viet Nam has been progressively increasing: 117 occurred between 1901 and 1930, 134 between 1931 and 1960, 171 between 1961 and 1990 (Huy Tien, 2005). In in the 1991-2000 decade alone, South East Asia was hit by 131 typhoons (NCAP, Climate Change and Climate Variability), which seems to confirm the general increase of violent natural disasters in the region. According to the 2008 Community-Based Disaster Risk Management Report, Viet Nam has experienced “an upsurge and intensity of these natural disasters”. The Southern Region Hydro-Meteorological Center in Ho Chi Minh City endorses this, affirming, “Typhoons impacting Viet Nam are increasing in frequency, magnitude, intensity as well as unpredictability in terms of the track that the typhoons follow” (Dun, 2009).

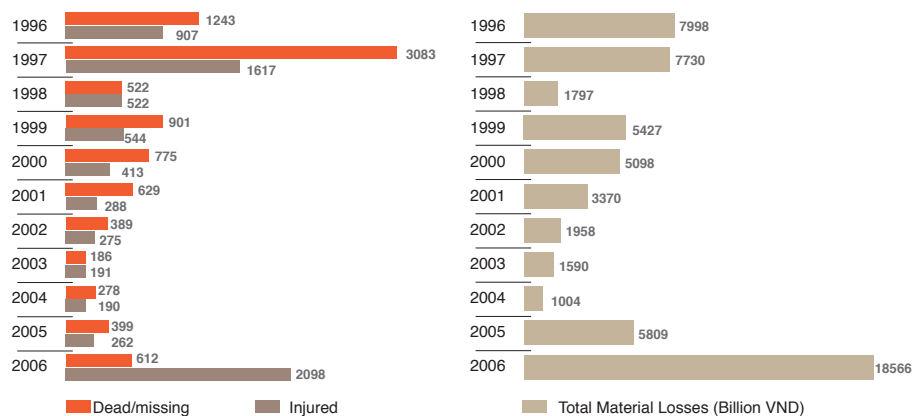
Figure 1. Main causes of coastal erosion in Viet Nam.



Source: Author, 2014.

Damages to properties and lands, as well as disaster-related deaths have been progressively increasing. This evidence focuses on the rising vulnerability of local communities rather than the actual number of catastrophes, which does not prove per se the adaptation and mitigation capacity of the region. This finding has been confirmed by a study of the UNDP highlighting that in Quang Binh, over the past fourteen years, natural disasters had an increased impact on the lives of locals, housing and agriculture (UNDP, 2012).

Figure 2. Damages caused by natural disasters in Viet Nam 1996-2006.



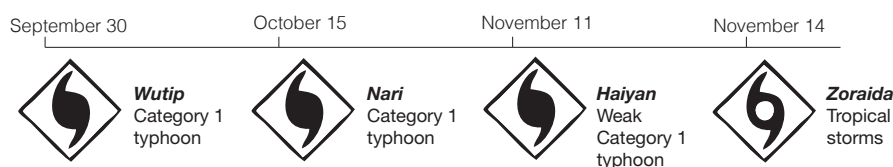
Source: Author, 2014. Data from Community Based Disaster Risk Management (CBDRM), Joint Advocacy Networking Initiative in Vietnam (JANI).

2009 and 2010 presented disastrous records in the history of Viet Nam. In 2009, the passage of typhoon Ketsana killed 179 people and injured 1,140 (IFRC, 2010), destroyed 20,000 houses and partially damaged 475,000 houses (Australian Red Cross Website), with devastating repercussions on rice production. In the same year, typhoon Mirinae killed 7 people and inflicted an economic damage of \$21 million (Di Gregorio, 2013). In 2010, the Central Region was victim of what locals described as “the worst disaster in the history of this province in the last 60 years” (Disaster Management Working Group, 2010), when severe floods affected half of the population in Quang Binh and killed 45 people.

In conclusion, the Central Region is highly vulnerable to both climate change and violent natural calamities. While the effects of slow-onset disasters, such as coastal erosion and salinization, can be more easily estimated and have proven to be worsening in a temporal perspective, it is harder to find a recognizable and progressive pattern for sudden-onset disasters and to draw conclusions about their future trends. Nonetheless, an increased frequency of natural disasters has been recognized and their impact seems to be increasingly dramatic as years go by.

2. ONE TYPHOON AFTER ANOTHER: A DISASTROUS FALL FOR THE CENTRAL REGION

Figure 3. Timeline of natural disasters in the fall of 2013



In accordance with the National Center for Hydro-Meteorological Forecasting, 2013 has marked a new record for Viet Nam in terms of number of natural disasters. Le Thanh Hai, the Deputy Director of the Center, alleged, “The maximum number of storms and tropical depressions recorded in a single year in Vietnam stood at 16 in 1964. This year’s 13 storms and 6 tropical depressions striking Vietnam have ensured a new record” (Asian Pacific Defence Forum, 2013).

On September 30, Typhoon Wutip (also referred to as the 10th storm) struck the Central coastal provinces between Thanh Hoa and Thua Thien-Hue as a Category 1 typhoon resulting in 11 deaths, 5 missing and 214 injured due to landfall, strong winds, torrential rains and consequent uncontrolled floods. Additionally, 212,196 houses were damaged or unroofed (IFRC, 2013a). Damages to crop production have also been extensive: 18,000 ha of rice, corn and cassava have been flooded (Thanh Nien News, 2013a); and land fertility was affected by salt intrusion (UN Viet Nam, 2013b). 29,007 households/106,352 people were preventively evacuated to temporary shelters in higher lands on September 29 and 30 (UN Viet Nam, 2013). By October 4 most of the evacuated persons had already returned to their homes and the evacuation centers hosted those families whose houses had been completely destroyed by the typhoon (UN Viet Nam, 2013b).

The passage of Typhoon Nari

Because of the heavy rains, water levels of rivers increased until October 4 and two lake dams broke (UN Viet Nam, 2013c). The Director of the National Center for Hydro-Meteorological Forecasting, Bui Minh Tang, claimed that Typhoon Wutip was “the strongest storm in the last six years” (Thanh Nien News, 2013a).

On October 15, while the Central Region still was in the middle of the recovery phase, a second typhoon hit the region from Nghe An to Quang Nai provinces. Nari, the 11th storm, brought strong winds (with a peak of 194 km/h) and torrential rains provoking severe and extensive flooding from 1.5 to 2 meters in some districts of the Quang Binh and Ha Tinh provinces. The flood retreated from the hit region by October 25 (UN Viet Nam, 2013f) leaving behind vast damages.

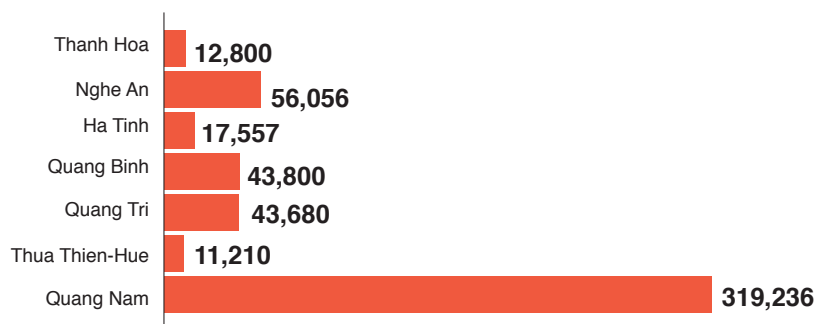
Figure 4. Quang Binh Red Cross chapter staff bringing relief goods to families in Tuyen Hoa, Quang Binh province, in the aftermath of Typhoon Nari.



Source: International Federation of Red Cross and Red Crescent Societies (IFRC), 2013c.

Typhoon Nari caused the death of 27 people and an extensive damage to 13,061 houses (IFRC, 2013a), whereas due to the following flooding 96,760 houses were submerged (UN Viet Nam, 2013e). In Quang Tri, many houses repaired in the aftermath of Wutip were severely damaged when Nari struck (Viet Nam News, 2013b). Nari induced the preventive evacuation of 123,686 locals to minimize the loss of lives (UN Viet Nam, 2013d). Due to the flooding, another 8,580 people were evacuated on October 16 (Ibid). People were relocated to safer ground in different provinces, including Quang Nam and Danang city (Bihn Minh and Tait, 2013). The total economic loss caused by these two typhoons reached VND 1.5 trillion (USD 734 million) (IFRC, 2013b), affecting the lives of up to 504,339 residents in the nine provinces (IFRC, 2013c).

On November 7 and 9, when super typhoon Haiyan was approaching the Vietnamese coasts after heavily hitting the Philippines, Prime Minister Nguyen Tan Dung circulated two telegraphs, through which the Government disposed that central and local authorities needed to implement “the highest state of preparedness” (UN Viet Nam, 2013g) in order to mitigate and contain as much as possible the effect of the coming storm. As stated by Valentina Origoni, who works as UN Policy and Coordination Analyst at Office of the UN Resident Coordinator in Viet Nam, families had been repeatedly hit by natural disasters (UN Viet Nam, 2013), which had repercussions on their actual preparedness and resilience in the event of a new typhoon.

Figure 5. Number of people affected by Wutip and Nari.

Source: Central Committee for Flood and Storm Control (CCFSC) in International Federation of Red Cross Red Crescent Societies (IFRC) Situation Report, 2013c.

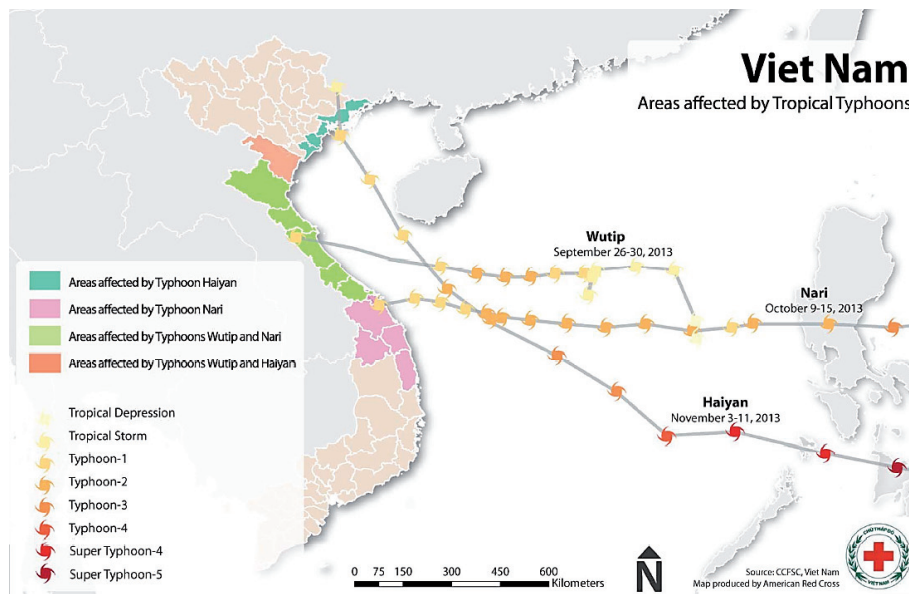
Vietnam's National Centre for Hydro-Meteorological Forecasting closely monitored the path of Haiyan and predicted that it would have reached the Central Region on November 10 as a Category 2 typhoon. The Government and NGOs jointly organized an immediate plan of evacuation in the central and southern provinces for 600,000 people (IFRC, 2013b), who then returned home as, on November 10, the typhoon moved northward (UN Viet Nam, 2013h). This change in the typhoon pathway required a second urgent round of evacuation of 200,000 locals in the northern region. Haiyan eventually turned into a Weak Category 1 typhoon and hit the Hai Phong and Quang Ninh provinces on November 11 bringing strong winds and torrential rains.

The impact of the typhoon was not as devastating as expected. A few of the 14 reported deaths (UN Viet Nam, 2013h) actually preceded the passage of the typhoon and occurred during the preparation phase (IFRC, 2013b). The National Committee for Search and Rescue confirmed this, stating that the victims were trying to reinforce their houses or cutting trees amid powerful winds (Asian Pacific Defence Forum, 2013). 89 people were injured and 75 houses collapsed. While the human loss was limited, the impact on agriculture was extensive, since 49,096 ha of cash crops were affected by the typhoon (UN Viet Nam, 2013h).

To coronate the already devastating typhoon season, the storm Zoraida reached the Vietnamese coastal region on November 14 with 41 victims due to what has been defined a "historic" flooding (Vietnam Net, 2013). "According to the Central Steering Committee for Storm and Flood Control more than 80,000 people have been rendered homeless" (Asian Pacific Defence Forum, 2013). Mr. Nguyen Thiet, 84, who lives in Tu Nghia district (Quang Ngai) declared, "I've never witnessed any violent floods like this" (Vietnam Net, 2013).

As clearly demonstrated by the passage of the 2013 typhoons, the Vietnamese Central Committee for Flood and Storm Control (CCFSC) and the Vietnamese Hydro-meteorological Service watchfully monitor the path of the storms and are able to forecast the areas of impact with adequate notice, which allows the prompt evacuation of residents in the targeted areas. In the case of typhoon Wutip the UN Disaster Risk Management Team had been monitoring the storm since September 27 (UN Viet Nam, 2013a). Likewise, typhoon Nari was monitored since its passage in the Philippines on October 12. Nonetheless, as the case of Haiyan confirmed, the typhoons can rapidly change direction and do not necessarily follow a specific pattern. Indeed, the Viet Nam Initial Communication reported in a preliminary assessment to the UNFCC that it has been estimated that typhoon tracks "have been moving southwards" (NCAP, Climate Change and Climate Variability). This is in contradiction with the pathway of typhoon Haiyan, which, on the contrary, moved northward. Also, it

Figure 6. Areas affected by the Tropical Typhoons in the Fall of 2013



Source: International Federation of Red Cross and Red Crescent Societies (IFRC), 2013c.

is hard to preventively forecast the intensity of the typhoon when hitting the region, since it can rapidly turn into a tropical depression.

3. THE IMPACT ON PEOPLE: EVACUATIONS AND RELIEF PROGRAMS

The previous section emphasized the importance of an effective early warning system capable of activating prompt responses in the event of natural disasters. Indeed, in 2009, when typhoon Mirinae struck, locals ascribed to the lack of warning and of official information on flooding in the media as the major responsibility for personal tragedies (Di Gregorio, 2013).

As a result of the increasing governmental commitment in recent years, the typhoons of fall 2013 demonstrated the effectiveness of prompt emergency programs and of the early warning system, which mainly consisted of evacuation plans towards temporary centers in higher lands or underground bunkers, and house reinforcement. Viet Nam has managed to develop a very systemic evacuation mechanism in conjunction with the Red Cross and the military. In preparation for Haiyan, the Government mobilized around 460,000 standing forces between soldiers and local army to ensure the evacuation before and during the emergency. As asserted by a senior official of the army “more than 170,000 soldiers assisted in the mass evacuations several hours ahead of the expected time of landfall and were well prepared to expect the worst-case scenario” (Asian Pacific Defence Forum, 2013).

883,000 people were relocated from 11 central provinces to safe zones (BBC, 2013). People relocated to internal higher grounds mostly accounted for residents of low-lying coastal areas (New Straits Time, 2013). However, a significant evacuation concerned Con Co Island, a small island 27 km from the coast of Quang Tri province. According to the Tuoi Tre newspaper, “All 250 people on the island including residents and soldiers were evacuated to underground shelters where there is enough food for several days” (News.com.au, 2013).

It is interesting to highlight that the process of evacuations was coercive. In fact, authorities informed people refusing to leave their homes that they would have been forced to (Al Jazeera, 2013). This means that in the villages, where evacuations were arranged, displacement was massive and authorities ensured that nobody was left behind, regardless of the locals' will to stay and protect their livelihoods.

The Red Cross assisted the evacuation of 100,000 people mainly focusing on the elderly and orphans (UN Viet Nam, 2013g). Indeed, during evacuation procedures, specific attention was dedicated to vulnerable categories. As the Women's Union representative of Hung Trach, in the Quang Binh province, asserted, "we organized boats to evacuate women and children first and the disaster group works with individual households on disaster preparedness" (Save the Children Viet Nam Blog, 2014).

In the case of typhoon Wutip, the military and the police engaged in the construction of temporary shelters in higher lands, along with 700 volunteers of the Red Cross (UN Viet Nam, 2013b). The main house reinforcement strategy consisted of sand bags, which were also used for protection in underground bunkers with a capacity of 40 to 50 people. In preparation for Haiyan, Tuoi Tre News reported (2013b), "At least 50 underground sandbag bunkers have been built in Duy Xuyen district, Quang Nam province. Food, rice, instant noodle bags, fresh water, and blankets have been stored in the bunkers. The elderly and children have been given first priority to take shelter in them".

It is interesting to note that evacuees are usually evacuated extremely rapidly, as the case of Haiyan showed, when 200,000 were evacuated in less than one day. Media reported that locals complained about late warnings from the Government, which affected the effectiveness and promptness of preparedness measures (BBC, 2013). Furthermore, the massive evacuation plans resulted in an overload of some shelters that could not contain evacuees (New Straits Time, 2013); relocated people were also expected to bring food and necessities for three days (Al Jazeera, 2013), which was difficult to attain, given the late notice.

People resided in the shelters for the time strictly necessary and returned home a few days after the passage of the typhoon, following a model of "flash" displacement. As reported by Olivia Dun (2009), "During the immediate disaster period many people are evacuated temporarily to higher ground and safer structures, however, this is often only for a short period of 1-2 days until the disaster passes".

Reconstruction of the damaged houses is seen as the main priority for recovery to the extent that poor residents sacrifice their basic human needs and "invested their money on roofing materials" rather than on food (UN Viet Nam, 2013c). After the passage of Wutip, reconstruction started immediately, allowing the rapid return of the relocated families to their homes. Indeed, by October 9, 70-80% of the houses was repaired (Ibid). The remaining percentage was expected to finish the reparation work in the following couple of weeks. However, the techniques used to fix the damages responded to immediate needs rather than long-term resilience, as residents did not have the money to buy more resistant materials (Ibid). As a consequence, given that in coming years the same population may be easily affected by new storms, vulnerability is likely to increase, as every natural disaster will weaken already precarious protection measures. Nevertheless, due to the increasing demand of reconstruction materials, prices doubled and poor people without access to them, turned to more insecure methods (UN Viet Nam, 2013c).

Different non-governmental organizations have been committed to relief programs supporting the most vulnerable categories. In the case of typhoon Wutip a central need was to provide poor people, whose houses had collapsed (around 15-20% of the hit population), with construction materials they could not purchase otherwise (Un Viet Nam, 2013c). These vulnerable residents were forced to prolong their stay in the shelters (UN Viet Nam, 2013b) and postpone their return. The passage of typhoon Nari did not improve the situation. Indeed, on October 23 some families were "still living under tarpaulins on the rubbles of their damaged homes, or [...] with

relatives or neighbors, which are by no means a long-term solution” (IFCR, 2013a). To help those affected, the Red Cross planned a cash grant program of VND 1 million per family (UN Viet Nam, 2013c) after Wutip and made available VND 6.6 million after Haiyan (IFCR, 2013b). The Government provided the families of the victims with grants of VND 3,000,000, while the Red Cross distributed 200 household kits and the Ministry of Health sent medicines to the provincial Health Departments (UN Viet Nam, 2013b). World Vision was instead concerned with the provision of food, water and non-food items to alleviate the constraining conditions of the affected population (UN Viet Nam, 2013c), as well as Save the Children offering education materials, shelters and cash grants (Save the Children Viet Nam). The provision of school materials has been deemed an important recovery strategy, as poor parents cannot afford new books and school items in the aftermath of a natural disaster (Save the Children Viet Nam, 2014).

It is interesting to underscore that locals perceive reparation and reconstruction as a duty and that the Government did not issue any appeal for international help in the aftermath of the typhoons, which seems to illustrate a general sense of autonomy and independence of the Vietnamese people in dealing with the traumatic effects of natural disasters. Most particularly, natural disasters outline a clear gender division of labor with men dealing with disaster management and rapid response activities, and women carrying out domestic tasks and taking care of children and the elderly (Oxfam, 2009). The exclusion of women from the disaster risk reduction activities affects the success of prevention programs, as an important part of the population is unaware of the precautionary behaviors to adopt to minimize the effects of natural disasters.

4. THE LONG-TERM EFFECTS OF TYPHOONS: A POSSIBLE NEXUS WITH MIGRATION PATTERNS

While the previous section discussed evacuations as a preventive ‘forced displacement’, this section aims at offering an overview of the possible connection between typhoons and migration. It is expected that the 2013 typhoons and future natural disasters will have an important effect on migration patterns.

Economic factors, such as income/wage differentials between the area of origin and the destination (Nguyen-Hoang and John McPeak, 2010) and the desire to improve one’s socio-economic status, are traditionally considered as key drivers for migration. Poverty and social exclusion being main reasons for moving, it is important to understand whether natural disasters play an incisive role in the impoverishment of people living in the Central Region.

By looking at poverty rates in Quang Binh, it is possible to recognize a positive decrease up until 2005. However, in 2006 the poverty rate suddenly surged from 9.72% to 25.36%, when the region was hit by natural disasters severely affecting agriculture (GAR, March 2011). This Figure demonstrates the hypothesized nexus between the occurrence of natural disasters and poverty increase. In her research study concerning the Mekong Delta, Olivia Dun draws the same conclusion by asserting that “repeated flooding can be identified as a major contribution to the situation of poverty” (Olivia Dun, 2011). By pushing this further, one can identify a linkage between natural disasters, poverty and migration: *“Floods and droughts are becoming more likely, which will affect agriculture, water supplies and hydro-electricity generation, as well as trade and industrial production in urban areas. Floods and droughts especially affect the poorest women and men who have the least resilience to deal with climatic stresses. These stresses are felt in particular in rural areas, and provide additional incentives to migrate”* (UN Viet Nam, 2009).

The 2009 Viet Nam Population and Housing Census showed that internal migration has been progressively increasing in the last 10 following both a rural-to-urban

and a rural-to-rural pattern (UNFPA, *Young people*, 2011). The Census revealed that from 1994 to 1999 a majority of migrants came from the North Central and the Central Coastal regions and the Mekong Delta region and that migration flows from these areas increased in the following few years (UNFPA, *Factsheet*).

As the graph above shows, destination areas for migrants were the Southeast region, the Red River Delta and the Central Highlands. Most especially, more than 570,000 people moved from the Central Coast to the Southeast (Ministry of Planning and Investment, 2011), with Ho Chi Minh City receiving 136,700 in-migrants alone (2009 Viet Nam Population and Houses Census). Da Nang in the Central Region, as a dynamic industrial park, also attracted 100,600 in-migrants (2009 Viet Nam Population and Houses Census).

Youth are the most common migrant, ranging from age 15 to 29 (Ministry of Planning and Investment, 2011). The main reasons for migration are work opportunities and high education. In 2009, more than half of migrants were female, leading to what has been defined as a ‘feminization’ of migration (UNFPA, *Profile*, 2011). The migration flow also has an important impact on sending areas and can produce ‘skip-generation families’, whereby the elderly take care of their grandchildren while young parents migrate to dynamic economic areas (UNFPA, *Young People*, 2011). This phenomenon is becoming increasingly common and can also have important implications on childcare¹.

As a result of the disastrous fall of 2013, many students in Ho Chi Minh who originally came from the Central Region did not go back home for holidays, as their families could not afford the travel. “80 percent of students who came to look for holiday-period jobs are from the Central Region, especially those whose families were affected by the disasters”, the Deputy Director of the Ho Chi Minh City Student Assistance Center said (Thanh Nien News, 2013b). According to a study conducted by Oxfam in the Quang Tri province, children do not return home after graduation, which will inevitably impact the household profile in the area of origin; although remittances will play an important role in the improvement of resilience, the province is likely to suffer for the lack of young residents (Oxfam, 2009).

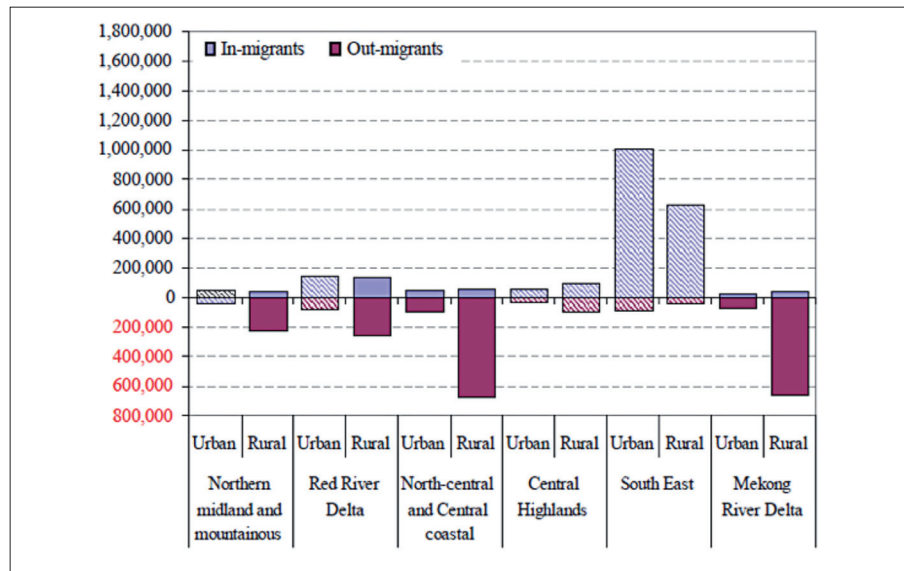
The overview presented by the 2009 Census only offers a limited aspect of internal migration. Indeed, to be considered as such, migrants are defined “as people whose place of residence 5 years prior to the time of the census is different from their current place of residence” (Ministry of Planning and Investment, 2011), which means that the Census does not take into account seasonal and temporary migration and, hence, underestimates the people’s mobility within the country. Likewise, the Census overlooks the reasons for migration, which would require further investigations.

A very common coping strategy for households affected by natural disasters is seasonal migration (Oxfam, 2009), as it allows income diversification and increases locals’ adaptation capacity without implying a drastic change in the household structure. Among the benefits temporary migration brought to her family, a 33 year-old woman mentioned two interesting aspects concerning the improvement of resilience and solidarity networks: “We also had the roof repaired *and* [...] contributed a little money for a charity fund for flood victims in the central part of Vietnam” (Resurreccion and Van Khanh, 2007).

Temporary out-migration mainly concerns young men, who benefit from easier mobility, better non-farming work opportunities near home and access to financial credit (Oxfam, 2009). Indeed, female migrants are more likely to encounter “stigma, guilt and criticism” for leaving their families behind (Resurreccion and Van Khanh,

1 Interview with Amida Cumming, IOM, April 29, 2014.

Figure 7. Inter-provincial in-migrant and out-migrant populations over the five years preceding 2009, by urban/rural place of residence/region.



Source: United Nations Population Fund (UNFPA), Factsheet, 2010.

2007) and often earn less than men (UN Viet Nam, 2009). Male temporary migration produces a shift in social structures: women are charged with further responsibilities (UN Viet Nam, 2009) and take the lead over traditional male activities during out-migration periods, shaping the phenomenon of the ‘feminization of agriculture’. In the Quang Tri province, men temporarily migrate especially after floods towards the Southern Region; most of them return home for cropping and reconstruction efforts after the passage of natural disasters (Oxfam, 2009).

The emotional impact of this forced displacement, both temporary and permanent, has been documented by different sources. Due to the challenging environment and the increase of urban poverty and vulnerability, many migrants are now turning to suburban or rural areas, where there are emerging industrial parks – areas of the city designed for industrial use - and they can be closer to their families: “I moved back because of my family. I want to be closer to home. I used to work in HCMC as a seasonal mechanical worker” (Action Aid and Oxfam, 2012), a man coming from Hai Phong explained. The same feeling was shared in the Quang Tri province, where migrants expressed their desire to stay home near their families (Oxfam, 2009).

This tendency could also explain why rural-to-rural migration has increased and has gained importance over the past 10 years. Lesser living costs in smaller cities are also likely to reduce pressure on migrants regarding remittances and will allow them to conduct a more stable life-style in destination areas. Being closer to home will benefit the psycho-social well-being of migrants, allowing for greater social capital in the receiving locations.

In conclusion, the exacerbation of poverty, also as a result of natural disasters, pushes locals to migrate according to the aforementioned patterns. In the aftermath of the tragic events of fall 2013, it is therefore likely that locals will use migration as an important coping strategy. Aside from short evacuations, repeated typhoons may induce longer-term displacement patterns. Nonetheless, given the methodological constraints previously discussed, it is hard to obtain estimates on short-term migrations

and to assess their evolution in the aftermath of natural disasters. Long-term migratory movements are more visible, in cases where the affected population has failed in rehabilitating their livelihood and, still suffering from the effects of environmental disasters, decide to migrate for “various social and economic reasons” (Dun, 2009).

4. NATIONAL STRATEGY PLANS AND LONG-TERM STRATEGIES

It has been assessed that the Comprehensive Poverty Reduction and Strategy (2001–2010) has “emphasized that natural disasters set back developmental gains and put people at the risk of falling back into the poverty trap” (World Vision, 2011). Therefore, most of the programs undertaken by the Government and international organizations emphasize sustainable resilience and community-based disaster risk management. Viet Nam has approved the UN Framework Convention on Climate Change and long-term policies have become part of the National Strategy on Natural Disaster Prevention, Response and Mitigation to 2020 and of the National Strategy for Climate Change of 2011. In light of this commitment, the Ministry of Natural Resources and the Environment issued a report stating that “from 2010 to now (2014), the Ministry *has* built and mobilized nearly USD 1 billion from international aid and preferential loan to implement programs and projects in response to climate change” (MONRE Website, *italics added*).

According to the National Strategy for Climate Change, by 2020 it is expected that the hydro-meteorological observation network will be perfectly functioning and will achieve a three-day storm predictability so as to improve preparedness (National Strategy for Climate Change, 2011). The Center Committee for Flood and Storm Control (CCFSC) initiates actions from local authorities warning them about the on-coming storms, issuing emergency telegraphs to instruct local authorities about the increase of preparedness measures and evacuation dispositions, and sending delegations to the concerned provinces (UN Viet Nam, 2013d). In preparation for Haiyan, the Prime Minister openly stated his concern and called for the higher level of preparedness procedures. After Nari, the provincial Committee for Flood and Storm Control (CFSCs) were very active: in Da Nang a Recovery Board was created to handle food security and shelter (UN Viet Nam, 2013d).

The UN Resident Coordinator Pratibha Mehta declared: “We are impressed by the extraordinary preparedness measures taken by the Government when confronted with this storm. Strong leadership, right from the highest level, played a key role in minimizing the impact and number of lives lost” (UN Viet Nam, 2013). Susan Mackay, the chief of communications for the United Nations in Vietnam, added, “The government has an extraordinary level of response. They invest both in preparedness and response, and the highest state of alert was called by the prime minister [...] The preparations have been underway for days now. They activated both civil and military capacities. This is a country that is very resilient and extremely well prepared” (Abc.net.au, 2013).

The National Strategy on Natural Disaster Prevention, Response and Mitigation to 2020 was adopted in 2007 with the purpose of minimizing “the damages and the losses to humans and properties, the damage of natural resources and cultural heritages, and the degradation of environment” (Action Plan for the Implementation of the National Strategy, 2008). The Strategy involves several ministries, among which include the Ministry of Agriculture and Rural Development (MARD) and the Ministry of Natural Resources and the Environment (MONRE). In line with a holistic approach, the national planning offers a wide and cross-setting range of policies, from non-structural measures, such as the formulation of common laws on natural disaster prevention, to structural measures, such as dyke constructions and sustainable forest management.

Particular attention is dedicated to multi-level coordination and communication between Central authorities and local institutions in terms of developing an early warning system and capacity building. In the event of natural hazards, Provincial Flood and Storm Control Committees take action in developing evacuation plans and the prepositioning of supplies and equipment (Ngoan et al., 2013). In light of the massive evacuations that took place in the Fall of 2013, it is therefore possible to affirm that Provincial Committees, with the support of the Central government, are able to promptly implement preventive measures; for example, the People's Committee of Da Nang city successfully and preventively evacuated 20,000 households in preparation for Haiyan (Tuoi Tre News, 2013a).

The National Strategy also covers a plan for the relocation of 135,537 households living in the most vulnerable areas. By 2015 the Government plans to resettle 3,891 households exposed to floods and erosion in the North Central Region and 15,391 households in the Coastal Southern Central under the lead of the Department of Cooperatives and Rural Development (Action Plan, 2008). The majority of the people (93,685 households) included in the resettlement program reside in the Mekong Delta (Action Plan, 2008), which shows that, while relocation is deemed a pillar of environmental adaptation in the Southern Viet Nam², in other regions the Government prefers adopting different measures. In fact, it has been impossible to find updates with regard to this program in the Central Region and to evaluate its eventual efficacy in the event of 2013 typhoons.

While the Government is mostly concerned with structural measures, such as flood management, international actors play a fundamental role in non-structural programs. Among the structural measures it is worth mentioning the strengthening, repair and constant monitoring of the 720 km sea-dykes and river mouth-dyke in the Central Region to preserve and increase the protection of the most vulnerable areas (Action Plan, 2008). With respect to non-structural measures, local Committees for Flood and Storm Control and other local People's Committees take the lead of most of the projects. In close cooperation with such local authorities, a network of 17 international and national NGOs have been able to implement Community-based Disaster Risk Management (CBDRM)³ activities in 23 provinces since 2000 (CBDRM, 2008).

Following this track, in 2011 World Vision launched a three-year program aiming at containing the negative impacts of natural disasters by undertaking transversal plans of action covering awareness training, community-based risk reduction activities and improvement of local rapid response teams (World Vision, 2011). World Vision organized a three-day training on first aid and rescue addressed to the members of the rapid response teams and to nurses. Truong Thi Tinh, a nurse who attended the training, claimed that it "was very useful and practical for us. It not only provided us with knowledge but also gave us skills to save people during floods and storm in our community" (World Vision, 2012).

According to Oxfam, substantial improvements have already been achieved: "Grains have been moved to higher and dryer places to avoid water submergence. The peasants have also begun to reinforce their houses by tying them to the ground to avoid collapse once disasters happen. [...] Another important change was to protect their living environment by changing their awareness as well as everyday behaviors" (Oxfam Viet Nam, 2014). Oxfam also offers a precious example of adaptation programs in conjunction with socio-economic development, as farmers

2. Interview with Jane Chun, UNDR, February 19, 2014.

3. "Community-based disaster risk management is a process in which at-risk communities are actively engaged in the identification, analysis, treatment, monitoring and evaluation of disaster risks in order to reduce their vulnerabilities and enhance their capacities" (Joint Advocacy Networking Initiative in Viet Nam, p. 14).

are given financial support and training for the most beneficial livelihood model. According to a beneficiary living in Quang Nam, Mrs. Ni, “the models have changed the way *my* family responds to disasters” (Oxfam Viet Nam, 2014, *italics added*) and allowed them to be proactive instead of passive witnesses and victims of natural disasters.

In Thua Thien Hue, the Center for Sustainable Rural Development organizes training for the improvement of the early warning system and disaster preparedness. In light of their increasing role during emergencies, the program is addressed to women and already had positive results. Ms. Pham Thi Cuc, a beneficiary of the project, stated that, thanks to these activities, she now knows how to behave in the event of natural disasters and that her family stockpiles wood, food, water and other items in dryer places to face floods (UN Women, 2012).

These programs have the ability to increase resilience and empower locals when they are facing natural hazards. Even though it is difficult to assess their impact during the 2013 typhoons, it is possible to affirm that, according to project participants, they will definitely be better-equipped to reduce disaster risks and causalities. As proven by the experience of the Viet Nam Red Cross in the aftermath of typhoon Wutip, the community-based disaster risk management has indeed “contributed substantially to these communities’ awareness and preparedness to lessen the impact of disaster events, many communities still require support to enhance their knowledge and awareness” (IFCR, 2013c).

Finally, in 2011 the Women’s Union (WU) of Da Nang Viet Nam, in conjunction with the Institute for Social and Environmental Transition, launched a microcredit and technical assistance program to develop storm resistant shelters in vulnerable districts. The program efficacy was tested with the passage of typhoon Nari: “244 of the 245 beneficiary households had completed construction thanks to the Project, and all 244 households were safe from Typhoon Nari’s force” (International Partnership for Implementation, Education and Research on Society, Natural resources and the Environment, 2014), while surrounding households were heavily affected. This positive experience highlights the importance of investing in preventive measures aimed at increasing locals’ preparedness and resilience, which have a paramount role in the event of violent natural hazards.

5. CONCLUSION

Viet Nam is adversely affected by climate change and natural disasters. The Central Coastal Region is particularly vulnerable. It suffers from sudden-onset disasters, such as typhoons and monsoons, which exacerbate the effects of slow-onset disasters, namely sea-level rise, salinity intrusion and coastal erosion. Although it is difficult to forecast future trends, by looking at last years, it is possible to assume that the socio-economic costs of typhoons have been increasing due to their frequency and violence, provoking serious consequences on local residents.

The proximity of natural disasters affects recovery capacity and disaster preparedness in highly vulnerable areas. The Fall of 2013 offers a valid example of the devastating repercussions of repeated natural disasters in the coastal region, causing the prompt evacuations of up to 883,000 people to safer lands or underground bunkers in preparation for Haiyan. The early warning and rapid response systems have proven to be effective and highly coordinated between the Central and provincial governments, involving both civilians and the military.

Evacuations were promptly arranged and coercive. People were relocated a few hours before the passage of the typhoons and stayed in temporary shelters for the time strictly necessary (around one to three days). Even though people were expected to bring their own food to shelters, relief programs offered food and water to the

displaced. As a result of governmental support programs, fast recovery capacity and reconstruction efforts, locals managed to rapidly return home. Nonetheless, due to the increasing prices of construction materials in the aftermath of natural hazards, poor residents turned to unsafe construction material, which in coming years is likely to affect their resilience capacity. Moreover, the proximity of 2013 typhoons provoked a longer duration of relocation for some locals who could not properly repair their houses in time.

Despite sudden-onset disasters usually provoking short-term evacuations, households in rural areas have adopted migration strategies in order to improve their economic status, which is highly compromised by the occurrence of violent calamities. Available data on migration underestimate the actual mobility of people, but show a general increase of all types of internal migration, in particular, from the Central Region to the urban centers in the Southern Region, for work or study. It is expected that the events of Fall 2013 will further boost migration, as a result of the economic loss the typhoons caused. Due to methodological constraints, it is however difficult to understand such behavioral changes, as socio-economic consequences extend over time and are not immediately perceivable.

An interesting finding also shows that some young people who go to universities in urban centers could not go back home for Christmas holidays because of the economic consequences the typhoons had on their families' incomes. The impoverishment of rural households pushes youth to remain in more dynamic urban centers, which, in the long run, may provoke an aging of the population in the area of origin.

The Government has adopted a holistic perspective with regard to climate change and the national system is progressively improving. With reference to Fall of 2013, Viet Nam has proven to have an efficient preparedness and early warning system with high-level coordination. Nonetheless, the Government will continue to strengthen mitigation and adaptation strategies according to the set of priorities outlined in the National Strategy on Natural Disaster Prevention, Response and Mitigation to 2020 and of the National Strategy for Climate Change of 2011, accounting for structural and non-structural measures.

Thus far, the collaboration with national and international NGOs has been productive and encouraged a participatory approach to resilience. As a result of these programs, locals are more aware and empowered rather than highly vulnerable; and have turned into proactive actors in emergency situations. Nonetheless, as the events of 2013 demonstrated, the effects on local populations are still serious and there is an urgent need for the national strategies to be fully implemented at the local level. ♦

BIBLIOGRAPHY**REPORTS:**

- Action Aid and Oxfam. November 2012, Participatory Monitoring of Urban Poverty in Vietnam. Five-year Synthesis Report (2008-2012).
- Asian Development Bank. 2012. Addressing Climate Change and Migration in Asia and the Pacific. Final Report. Philippines.
- Disaster Management Working Group. 2010. Report of Joint Assessment. Quang Binh Province, Vietnam.
- ESCAP/WMO. 2013. Typhoon Committee 8th IWS/2nd TRCG Forum. Member Report, Macao, China.
- IFRC. November 26, 2013c. Vietnam: Typhoon Wutip. Revised Emergency Appeal.
- IFRC. November 12, 2013b. Vietnam: Typhoon Haiyan. Information Bulletin.
- IFRC. October 23, 2013a. Vietnam: Typhoon Wutip. Emergency Appeal Operation Update.
- IFRC. 2010. Responses to Typhoons Ketsana and Mirinae.
- Joint Advocacy Networking Initiative in Vietnam (JANI). Framework on Community-based Disaster Risk Management in Vietnam.
- Ministry of Planning and Investment. 2011. Vietnam Population and Housing census 2009. Migration and Urbanization in Vietnam: Patterns, Trends and Differentials.
- Partnership for Disaster Reduction - South East Asia. April 2008. Community-based Disaster Risk Management.
- UN. Press Release, November 12, 2013. Typhoon Haiyan: UN Praises Vietnam for High State of Preparedness
- UNDP. 2012. A preliminary analysis of disaster and poverty data in Quang Binh province, Vietnam.
- UNDP. 2011. A preliminary analysis of flood and storm disaster data in Vietnam Global Assessment Report on Disaster Risk Reduction.
- UNFPA. 2011. Profile of Key Sex-Disaggregated Indicators from

- the 2009 Vietnam Population and Housing Census.
- UNFPA. 2011. Young People in Vietnam: Selected Indicators from the 2009 Vietnam Population and Housing Census.
- UNFPA. Factsheet, 2010. Internal Migration in Vietnam: Evidence from the 2009 Census.
- UN Vietnam. November 20, 2013i. Vietnam: Flooding in Central Provinces. Situation Report No.1.
- UN Vietnam. November 13, 2013h. Vietnam: Typhoon Haiyan. Situation Report No. 2.
- UN Vietnam. November 11, 2013g. Vietnam: Typhoon Haiyan. Situation Report No. 1.
- UN Vietnam. October 25, 2013f. Vietnam: Typhoon NARI and update on Typhoon WUTIP. Situation Report No. 3.
- UN Vietnam. October 21, 2013e. Vietnam: Typhoon NARI and update on Typhoon WUTIP. Situation Report No. 2.
- UN Vietnam. October 17, 2013d. Vietnam: Typhoon NARI and update on Typhoon WUTIP. Situation Report No. 1.
- UN Vietnam. October 9, 2013c. Vietnam: Typhoon WUTIP. Situation Report No. 3.
- UN Vietnam. October 4, 2013b. Vietnam: Typhoon WUTIP. Situation Report No. 2.
- UN Vietnam. October 1, 2013a. Vietnam: Typhoon WUTIP. Situation Report No.1.
- UN Women, 2012, Recognize the Strength of Women and Girls in Reducing Disaster Risks. Stories from Vietnam.

ARTICLES:

- Adger, W. Neil. 1999. Social Vulnerability to Climate Change and Extremes in Coastal Vietnam, *World Development*, Vol. 27, No. 2, pp. 249-269.
- Brickey Bloomer, David. March 2014. The Forgotten Emergency: In Vietnam, Child Protection Systems Strengthening and Disaster Preparedness Offers Lessons for Other Countries in Child-Informed and Prioritized Planning. Save the Children.
- De Brauw, Alan. 2010. Seasonal Migration and Agricultural Production in Vietnam. *Journal of Development Studies*, Vol. 46, No. 1: 114-139.
- Di Gregorio, Michael. 2013. "Learning from typhoon Mirinae: Urbanization and Climate Change in Quy Nhon, Vietnam.
- Dun, Olivia. 2011. Migration and Displacement Triggered by Floods in the Mekong Delta. *International Migration*, Vol. 49 (S1): 200-223.
- Dun, Olivia. 2009. *Viet Nam Case Study Report: Linkages between flooding, migration and resettlement*. EACH-FOR.
- Ngoan, Le Duc, Hoa Sen, Le Thi, Than Huong, Hguyen Thi, Christoplos, Ian, Lindergaard, Lily Sandoum. 2013. *Climate Change and Rural Institutions in Central Viet Nam*. DIIS Working Paper.
- Nguyen-Hoang, Phuong and McPeak, John. 2010. Leaving or Staying: Inter-Provincial Migration in Vietnam. *Asian and Pacific Migration Journal*, Vol. 19, No.4: 473-500.
- Oxfam. December 2009. Responding to Climate Change in Vietnam: Opportunities for improving gender equality. A policy discussion paper.
- Pilarczyk, Krystian W. & Nuoi, Nguyen Si. 2005. *Experience and Practices on Flood Control in Vietnam*, Water International, 30:1: 114-122.
- Prasetya, Gelar. 2007. Thematic paper: The role of coastal forests and trees in protecting against coastal erosion, FAO.
- Resurreccion, Bernadette and Van Khanh, Ha Thi. 2007. Able to Come and Go: Reproducing Gender in Female Rural-Urban. Migration in the Red River Delta, *Population, Space and Place*, Vol. 13: 211-224.
- Sternin, Sam. 2003. *Mid-Term Review of Viet Nam UNICEF Emergency Programmes 2001-2003*. UNICEF, Hanoi.

- Tien, Huy & Ngo Ngoc Cat. 2005, Status of Coastal Erosion Of Vietnam and Proposed Measures for Protection. FAO.
 - The Netherlands Climate Assistance Program (NCPA). Climate change and climate variability in Vietnam and Thua Thien Hue province.
 - Press Articles:
 - Abc.net.au. November 12, 2013. "Weakened Typhoon Haiyan sweeps over Vietnam and into China".
 - Al Jazeera. November 11, 2013. "Vietnam escapes worst of Typhoon Haiyan".
 - BBC. November 11, 2013. "Severe Tropical Storm Haiyan makes landfall in Vietnam".
 - Binh Minh, Ho and Tait, Paul. October 15, 2013. "Typhoon Nari hits Vietnam, 122,000 people evacuated". In *Reuters News*.
 - International partnership for implementation, education and research on society, natural resources and the environment. January 27, 2014. "The Economics of Storm Resistant Shelters".
 - News.com.au. November 11, 2013. "Vietnam heads to shelter as Typhoon Haiyan makes landfall".
 - New Straits Time. November 9, 2013. "Super Typhoon Haiyan: Mass evacuation as Haiyan closes on Vietnam".
 - Oxfam Vietnam. January 9, 2014. "Climate change project changes behaviors of residents in deltas".
 - ReliefWeb. November 9, 2013. "Vietnam: Mass evacuation as super typhoon closes on Vietnam".
 - ReliefWeb. October 26, 2013. "Vietnam: Sharing experiences to respond to climate change".
 - Save the Children. November 9, 2013. "Vietnam Prepares for Typhoon Haiyan; Aid agency battles for access to Tacloban City in Philippines".
 - Thanh Nien News. December 08, 2013b. "Students from storm-hit central Vietnam won't go home for New Year".
 - Thanh Nien News. October 03, 2013a. "Typhoon leaves trail of destruction in central Vietnam".
 - Tuoi Tre News. November 10, 2013b. "Containers, sandbag bunkers used as protection from storm".
 - Tuoi Tre News. November 8, 2013a. "Da Nang to evacuate 20,000 families ahead of super typhoon Haiyan".
 - UNDP. October 16, 2013. "Multi-dimensional approach key to sustain poverty reduction".
 - UNDP. October 11, 2013. "National talk links disaster risk reduction and climate change adaptation efforts".
 - UN Vietnam. November 14, 2013. "Emergency Specialist reports: Vietnam sees three typhoons in five weeks".
 - UN Vietnam. November 12, 2013. "Typhoon Haiyan: UN Praises Vietnam for High State of Preparedness".
 - UN Vietnam. December 2009. "Vietnam and Climate Change: A Discussion Paper on Policies for Sustainable Development".
 - Vietmaz. October 3, 2013. "Typhoon leaves trail of destruction in central Vietnam".
 - Vietnam Administration of Seas and Islands. News Detail. October 28, 2013.
 - Vietnam Net. November 18, 2013. "In pictures: Historic flooding destroys central Vietnam".
 - Vietnam News. October 28, 2013c, "VN seeks a greener path in face of floods".
 - Vietnam News. October 16, 2013b. "Fresh storm strikes Central region".
 - Vietnam News. September 30, 2013a. "Tropical storm forecast to hit central region".
 - Wadhwaney, Rohit. October 25, 2013. "Typhoon Haiyan: Vietnam calls for international cooperation to tackle natural calamities". In *Asian Pacific Defence Forum*.
 - Documents:
 - Government of Vietnam. November 2008. Action Plan for the Implementation of the National Strategy.
 - Government of Vietnam. December 5, 2011. National Strategy for Climate Change.
 - Government of Vietnam. 2009 Viet Nam Population and Houses Census.
 - Websites:
 - Australian Red Cross Website, <http://www.redcross.org.au/typhoon-ketsana-2009.aspx> (consulted on March 12, 2014).
 - Central Committee for Flood and Storm Control, <http://www.ccfsc.gov.vn/KW367A21/Home-page.aspx> (consulted on March 14, 2014).
 - Ministry of Natural Resources and Environment, <http://www.monre.gov.vn/v35/default.aspx?tabid=414> (consulted on February 2, 2014).
 - Save the Children Website, <http://www.savethechildren.net/> (consulted on March 14, 2014).
 - World Vision Website, <http://www.wvi.org/vietnam> (consulted on March 12, 2014).
- INTERVIEWS:**
- Interview with Amida Cumming, IOM, April 29, 2014.
 - Interview with Jane Chun, UNDP, February 19, 2014.
 - Others:
 - Climate Can Tho University. 2012. Change Adaptation and Migration in the Mekong Delta, Workshop Report, 4th-5th June 2012.

HAN YANG

Assessing the evolvments and impacts of environmental migration in Inner Mongolia

Blue, blue appear the skies; Vast, vast the grassland lies.
Winds blow, grass bows and we see the cattle roam.
Folk Song of Bei Dynasty (534-589 AD)

In the eyes of Chinese people, Inner Mongolia is an ecologically unique province that is knitted with double images. The shining side of Inner Mongolia attributes to its picturesque and endless grasslands. Yet, the dark facet of Inner Mongolia is notorious for being the source of dust storm sweeping over northern part of China. Due to climate change and excessive anthropogenic activities, environmental problems prevail in Inner Mongolia, including grassland degradation, sprawling deserts, water scarcity and soil erosion. In addition to environmental deterioration, poverty is prevalent for people living in environmentally undesirable areas. Worsening environment and aggravating poverty not only dismantle the tranquil lives of the indigenous people, but also require large-scale governmental interventions. Viewed as effective adaptation and mitigation measures to lift poverty and restore ecosystems, government-led resettlements have evolved from initially small-scale pilot projects to normatively mega-size strategic policies in Inner Mongolia.

This paper will first summarize environmental migration and associated policies that occurred before 2013. The following section will focus on the latest Environmental Migration and Poverty Eradication Planning enacted in April of 2013 by the Inner Mongolia provincial government. The new migration strategy will be reviewed and compared with previous measures. The next section will examine the economic, socio-cultural and environmental impacts induced by environmental migration through a combination of questionnaire surveys and a literature review. The paper will be concluded with a summary of the factors contributing to migration patterns and policies.

Information with is respects to subjective feelings and personal opinions on environmental migration are mainly collected from primary source, i.e. questionnaire-based surveys. The paper is complemented by secondary data searched from journals, newspapers and the Internet will be used to conduct qualitative and quantitative analysis. Incomplete and are inconsistent statistics, together with well as a lack of official and recognized data is a major challenge identified in this paper.

1. THE CONTEXT OF INNER MONGOLIA

1.1. Introduction on Inner Mongolia

Inner Mongolia is the third largest province in China, accounting for 12 percent of China's total land area. Stretching from the northwest to the northeast of China, the geographic location of Inner Mongolia is of significant importance because of its proximity to Beijing and borders with Mongolia and Russia. Inner Mongolia is one of

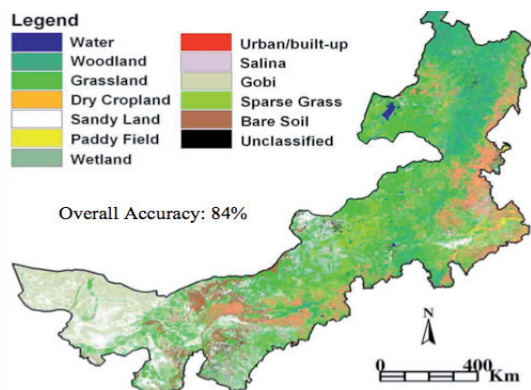
the five autonomous regions of China due to large concentrations of ethnic populations, particularly the Mongols. While Inner Mongolia is home to 68.72% of the total Mongols in China, the Mongols only make up 17% of total population within Inner Mongolia. There are other ethnic groups residing in Inner Mongolia, for example Manchu and Evenki. Along with Mandarin, Mongolian is used as the second official language.

Inner Mongolia is known for its picturesque scenery, indigenous culture and peaceful lifestyle. In addition to vast coverage of grasslands, there is large variety of land types in Inner Mongolia. According to 2013 Inner Mongolia Chronicles, Inner Mongolia consists of 59.86% grassland, 16.4% forest, 7.32% cultivated land and 13.85% barren lands; consisting of sands, Gobi desert and gravels). The map of land cover map is shown in Figure 1. The abundance of grassland fosters the long-lasting tradition of herding and nomadic lifestyle of the Mongols and other ethnicities inhabiting in Inner Mongolia. Some Mongols and the Evenkis living in mountain areas also depend on forestry and hunting for subsistence. The huge reserves of coal, natural gas and rare earth proliferates the surge of extractive industry in Inner Mongolia, which exerts immense economic, social and environmental effects. Due to the vastness and diversities of the territory, weather conditions are varying dramatically from the forested and mountainous region of the east to the sand covered and desert area of the west. Due to low precipitation, the majority of Inner Mongolia is under semi-arid or arid climates except for small semi-humid areas in the far Northeastern region (Figure 2).

1.2. Environmental problems in Inner Mongolia

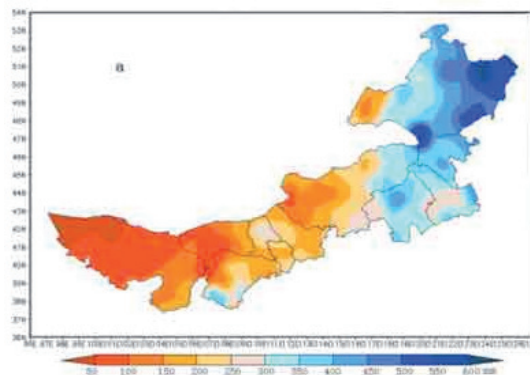
Inner Mongolia’s susceptibility to environmental disruptions partially stems from its inherent climatic and geographic constraints of being dry, arid and landlocked. As presented in Figure 3, the majority of Inner Mongolia lies in No.1 and NO. 2 Ecologically Fragile Zones, meaning the ecosystem is not resistant to external disturbances and sensitive to population pressure and therefore has low capacity to support human settlement (Tan 2008). Aside from natural conditions, to large extent the speed and scale of environmental deterioration in Inner Mongolia is due to excessive human activities that exceed the carrying capacities of ecosystem. In recent decades Inner Mongolia face a wide range of environmental problems, among which desertification, rangeland degradation, soil erosion, drought and water scarcity are extremely detrimental.

Figure 1. Land Cover Map of Inner Mongolia



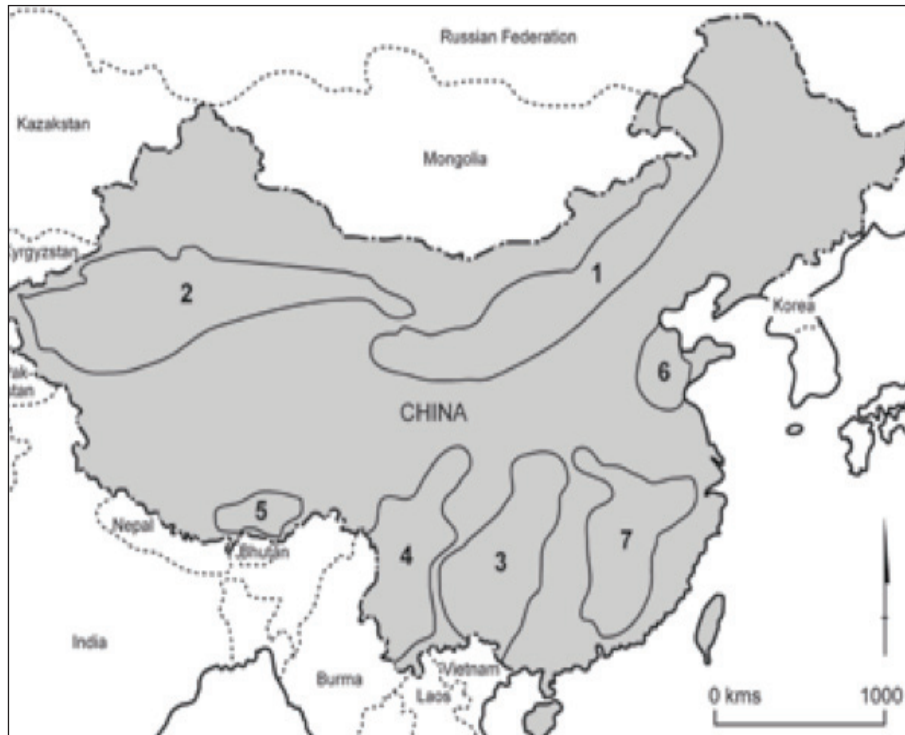
Source: Bagan & Yamagata 2009

Figure 2. Level of Precipitation in Inner Mongolia



Source: Meteorological Bureau of Inner Mongolia 2014

Figure 3. Distribution of Ecologically Fragile Zones in China



1. : Semi-arid and semi-humid areas in northern China. 2: Semi-arid areas in northwestern China)
Source: Tan & Fei 2007

Inner Mongolia has been plagued by prolonged drought and water depletion in recent decades. Since the 1980s, the number of dry days per year has significantly increased. The 21st century has witnessed a rapid surge of dry weather spells in Inner Mongolia. 2005 has been recorded as the driest year in the past 50 years (Wang & Wu 2013). Population growth and economic development has resulted in soaring water consumption and overexploitation of water resources. Those problems lead to many consequences including dropped river runoffs, shrank lakes and declined underground water levels. The interplay of the ecosystem and water-related issues in return give rise to a series of other environmental problems, including soil erosion and land degradation.

Both the size and gravity of desertification of Inner Mongolia are the highest among all Chinese provinces. Since the 1990s, desertification has incrementally progressed throughout in Inner Mongolia. On average, desertification expands at the speed of 2,460 km²/year (Liu & Zhao 2009). Up to the end of 2009, 52.2% of Inner Mongolia's territory has been considered as desertification, amounting to 6,177,700 km² Forestry Bureau of Inner Mongolia 2011. Desertification and soil erosion have resulted in frequent dust storms, hazarding local economy, daily livelihoods and public health. Based on historical records, there was, on average, one big dust storm (10.8m/s ≤wind speed ≤ 24.4m/s, 200m ≤visibility≤ 500m) every three decades in the 2000-year time frame prior to 1949. Between 1950 and 1990, the frequency of large dust storms increased to once biennially. In the 1990s, Inner Mongolia and other cities experienced dust storms on yearly basis (Yi & Zhang 2011). Furthermore, extreme dust storms have extended to the entire northern China affecting up to 12 cities and provinces. Dust storms blew away loose sands and fine soil particles from

Inner Mongolia, and 45.2% of those sands and soils were transported to Beijing and Tianjin, two of the most important and vibrant cities in China (Wang & Wu 2013). Dust storms produced from Inner Mongolia even transcended national territory reaching Japan and the Korean Peninsula. Yellow and dusty sky in Beijing was broadcasted worldwide, which partially triggered large-scale movements to curb dust storms and restore ecosystems in Inner Mongolia. Among various measures, relocating populations living in impoverished, fragile and harsh environments are widely used and highlighted by central, provincial and local governments. Environmental relocation and resettlement in China refers to moving populations inhabiting in ecologically fragile regions into areas with preferable environmental conditions (Wang 2013).

2. HISTORY OF ENVIRONMENTAL MIGRATION IN INNER MONGOLIA

2.1. Evolvement of environmental migration in Inner Mongolia

Historically, population movements between Inner Mongolia and the rest parts of China feature in inflows of Han Chinese from mainland cities to Inner Mongolia. As early as the Mongol-established Yuan Dynasty (1271-1368), thousands of Han people have been relocated to Inner Mongolia to take up farming according to History of Yuan. Immigration to Inner Mongolia increased again after the birth of new China for purposes of reclaiming the lands and building a new Inner Mongolia. At the onset of 2000, the Chinese Central Government's West Development strategy marked a new wave of immigration of Han people into Inner Mongolia (NDRC, 2000).

In contrast, the mobility of Inner Mongolia natives to other cities and provinces is less dynamic due to their unique lifestyle and reliance on pastures. However, the equilibrium has dramatically changed following the implementation of regional environmental migration projects.

The start of environmental migration in Inner Mongolia was mainly driven by rampant dust storms. At the turning point of the new millennium, Beijing and its adjacent regions were periodically attacked by dust storms blown from Inner Mongolia. Dust storms went beyond domestic concerns, and were put in the international spotlight because of 2008 Beijing Olympics Game. In 1998, the China State Council approved a "National Environmental Development and Plan" that required provinces located in the source zones of dust storms to strengthen environmental protections (The State Council 1998). The plan urgently requested limiting agricultural and grazing activities for the sake of restoring grasslands, forests and vegetation. In this context, Inner Mongolia government conceived and conceptualized the idea of environmental migration at the end of the 1990s. This prototype of future large-scale migration was initiated as small-scale pilot project. In 1998, Inner Mongolia embarked its first ecological emigration project with the intents to mitigate anthropogenic stress of the ecological systems in Yin Mountain. This 100-million yuan (16 million USD) project aimed at resettling 15, 000 people in three years (Chu & Meng 2006).

In May of 2001, the Inner Mongolia Provincial Government enacted 'Opinions On Implementing Environmental Migration and Poverty Alleviation Migration Projects', which initiated massive environmental migration in Inner Mongolia (IMDR, 2001). Aligned with National 10th Five-Year Plan, this regulation included a 6-year migration plan to relocate and resettle 650, 000 people of environmentally fragile areas and who were afflicted by desertification, grassland degradation and soil and water erosions. It also required governments of all municipalities (leagues) and counties (banners) to draw up concrete and specific regional migration schemes. Inner Mongolia further reinforced its ecological reinstatement and migration efforts in 2002 in response to the Beijing-Tianjin Sand Source Control Project, in which Inner Mongolia was a

major targeted region. In 2003, the “Grain for Green” resettlement swept across all of the Inner Mongolia administrative districts and prefectures affecting all 12 municipalities (leagues), 65 counties (banners), 101 towns and 2,412 villages. By the end of 2003, environmental settlers in Inner Mongolia had reached up to 290, 000 (Chu & Meng 2005).

In 2006, Inner Mongolia disclosed its Provincial 11th Five-Year Plan on Ecological Protection and Development (2006-2010). Significant attention and priority are given to rehabilitate ecosystems by re-vegetation, reforestation and re-plantation of farmlands and rangelands. Accordingly, the Provincial Five-Year plan spurred intensified environmental migration within Inner Mongolia. Between 2006 and 2010, Inner Mongolia has resettled in total 304, 000 environmentally displaced people.

In 2011, the Provincial 12th Five-Year on Ecological Protection Development Plan was launched to achieve ecological reinstatement by increasing forest and grassland coverage and alleviating grassland degradation. Strengthening environmental migration in pastures and forest areas are still defined as essential and effective measures in the Five-Year plan.

In 2013, the Inner Mongolia Provincial government rearticulated environmental resettlement policies by the enforcement of the ‘Environmental Migration and Poverty Eradication Plans for Ecologically Fragile Zones’. This ambitious 5-year plan set the goals of moving 366, 842 people of 115, 724 households, out of environmentally vulnerable areas. Apart from adaptation to environmental degradation, Inner Mongolia’s environment-induced resettlement has been integrated with poverty reduction measures since its naissance. The government’s decision of incorporating poverty alleviation into migration schemes is based on the coincidence that the majority of the under-poverty-line population inhabits in environmentally undesirable and vulnerable areas. It is worthy to note that a significant portion of the affected populations are ethnic minorities, namely the Mongols who are distinguishably different with Han Chinese in term of lifestyle, culture, religion and language.

2.2. Official discourse of 2013 Environmental Migration Plan

Governance in China is, by and large, still characterized by top-down, command and control approaches, which indicates polices and plans are usually drawn at top levels. National policies are the most important signals for lower-level governments to follow up with detailed and correspondent action plans. Despite of the fact that Inner Mongolia has accumulated more than decade’s environmental resettlement experience at provincial level, there are only two provincial official documents specific to environmental migration. Usually environmental migration is encompassed and merged in other national and provincial polices such as Beijing-Tianjing Sand Control and the Provincial Five-year Plan.

In addition to the 2001 version “Opinions on Implementing Environmental Migration and Poverty Alleviation Migration Projects”, the latest provincial document is “Environmental Migration and Poverty Eradication Plans for Ecologically Fragile Zones” (hereafter referred to as the 2013 Plan) that took into effect in April of 2013 (IMDR, 2013). The 2013 Plan is the core guidance within the policy framework of environmental migration in Inner Mongolia. In order to understand further on the rationales behind Provincial Government’s policy-making, the following subsections will review and summarize core components of 2013 Plan.

The necessity of environmental migration

The 2013 plan summarizes the achievements of previous migration projects and recognizes the contribution of environmental migration in terms of livelihood improvement and food security. It also reminds governments of all levels within to have “sober and clear understanding” that Inner Mongolia is still a less developed province represented by low-level, unbalanced and uneven socio-economic development

(IMDR, 2013). 1.97 million people in Inner Mongolia live under the poverty line, but measures such as bolstering industries, labor force transferring and social relief are only able to alleviate the situations for a limited numbers of the population. Those conventional poverty reduction measures are unable to benefit people dwelling in deserts, mountains and desertification zones. In this regard, the provincial government believes that environmental resettlement surpasses other conventional measures because it is able to embrace ecological rehabilitation, livelihood improvement and poverty reduction into one policy set.

Feasibility of environmental migration

The Inner Mongolia Provincial Government asserts that Inner Mongolia enjoys many opportunities and advantages, which have paved the foundations for carrying out environmental migration. Firstly, the Provincial Government has demonstrated strong political will and financial support to prioritize environmental and poverty-reduction related migrations. Secondly, local people reveal desires of relocation for the sake of better lives and higher incomes. Additionally, Inner Mongolia has accumulated rich migration experiences since 1980s concerning methodologies, resettlement design, project management and fundraising. The existing policies and solutions are highly helpful for future migration work. Besides, Inner Mongolia teems with vast land and rich natural resources that enable to resettle migrants within the territory of Inner Mongolia. Last but not least, Inner Mongolia's progresses on GDP growth, fiscal capacities, public service and industrialization enhance the feasibility of large-scale migration projects.

Fundamental principles

The 2013 Plan requires governments under provincial levels to outline sub-regional schemes and implementations in strict accordance with six fundamental principles, which are clearly stipulated in the Plan:

- i. Integrated and step-by-step implementation built on scientific research and close examination of local conditions.
- ii. Government-led, participatory and voluntary approach. Preconditioning on voluntary basis, government takes lead in designing, coordinating and organizing migration. Relevant agencies, social groups, private sectors and other civil society organizations are encouraged to collaborate to support and participate in migration and poverty reduction.
- iii. Be flexible, adaptable and innovative. Resettlement arrangements should be set according to local conditions and backgrounds of affected groups.
- iv. Oriented towards income boosting and resilience promotion.
- v. Be integrated, practical and efficient. Resources of various types must be mobilized and integrated to solve most pressing issues.
- vi. Environmental protection and sustainable development should be pivotal components. Released lands in origin areas must be reclaimed for the purposes of ecosystem restoration and suppressing environmental deterioration.

Major objectives

The 2013 Plan spells out the objectives of new-round environmental migration projects in Inner Mongolia in the aspects of scale of migration, timeframe and social-economic goals. Between 2013 and 2017, the migration project aims to relocate 115, 724 households and 366, 842 individuals living in environmentally fragile agro-pastoral zones. This migration plan will be applied to all 12 municipals and leagues. Environmental migrants should be resettled into new destinations (towns and villages) that belong to the same administrative divisions with the areas of origin.

All migration projects will finish at the end of 2017, with the goal of improving lives of environmental migrants. Specialized farming and livestock raising will be

the fundamental economic activities for sustaining subsistence and eradicating poverty. Supplementary but important sources of income will be transferring the existing labor force (mainly farmers and herders) to waged and contract workers. Ultimately, the goal set for the end of 2020 is launching into a moderately well-off society (or *Xiaokang Society*, referring to Chinese national economic policies to build up a society where people are moderately well-off and middle class), where migrants' incomes and public service will reach or above provincial average.

Criteria for the identification of areas of origin and of destination

Table 1. Criteria of Areas of Origins and Destinations

	Areas of Origin	Areas of Destinations
Economic Factors	-Places with higher density of under-poverty-line households -Places with poor transportation and scatter population that engender high costs for infrastructure and public service development	-Places with developed industries and promising job opportunities. -Industrial and manufactory bases and zones
Environmental Factor	-Places unable to feed local population due to imbalanced ecosystem, repeated droughts, water shortage and meager resources -Areas with frequent geological and natural disasters	-Places with adequate lands and water resources that are convenient for large-scale and centralized development.
Social Factor		-Easy access to work, school, medical care and water supply. -Places are flexible and capable to be annexed and expanded.

Financial schemes

The Inner Mongolia Provincial Government only allocates and provides subsidies for migrants house construction (15, 000 yuan /per person). Governments below provincial levels are responsible for fundraising for other new constructions and investments.

Settlement schemes

Migrants will be further detailed to two sub-groups, i.e. eco-migrants and labor-oriented migrants. The eco-migrants will be entitled with farmlands, while the labor-oriented migrants will lose their lands, relying mainly on waged and contracted work. There are two types of resettlement schemes: collective relocation and scatter relocation. Collective relocation refers to the resettlement of the entire village or community to the same destination without breaking down the former social constitutes. Scatter settlement will disperse migrants of the same origin to separated places. Groups with special needs, for instance single seniors and disabled persons will be assigned to public nursing and care homes upon permission or if needed.

3. ASSESSMENTS ON THE 2013 ENVIRONMENTAL MIGRATION PLAN

3.1. Progresses and Innovation in the 2013 Plan

Starting from the end of 20th Century, environmental migration has been favored by the Inner Mongolia Provincial Governments as a strategy to terminate environmental degradation and improve living standards. Although the virtual components

remain intact, Provincial Governments have upgraded and updated a number of details in its latest 2013 Plan. In comparison with 2001 version, 2013 Plan evolves to be more explicit, specific and inclusive.

Diversified Financing Mechanisms

Among various interventions to tackle environmental deterioration, environmental migration is one of the most expensive solutions that require tremendous capital investments. According to government, 2013 environmental migration will require an 18.98 billion yuan (3.96 billion USD) to construct new houses, develop irrigation and water systems, upscale public service and infrastructures, and the like. The 2013 Plan diversifies and expands sources of finance in many ways. First and foremost, Inner Mongolia Provincial Governments will apply for special grants from the National Development and Reform Commission and Ministry of Finance. Additionally, Provincial Governments will raise money from various sectoral funds or funds of special purposes, for example the Rural Drinking Water Safety Fund, Grain for Green Fund, Farmer Training Fund, Fund of Ethnicity Development, and so on. At the provincial and prefectural levels, complementary and diversified financing methods such as donations and private sponsor are highly recommended.

Encouragement of Wide Public Participation

One of the major progresses in 2013 Plan is calling for wide-ranged contributions and engagements from public sector, private sector and civil society organizations. Prominently, the role of the private sector is reiterated in the 2013 Plan. Business and enterprises are encouraged to be involved in research and provide recommendations in regards to poverty reduction. Along with governmental agencies and social groups, private actors, particularly state-owned companies and renowned local industries can partner with migrant villages to offer necessary assistance. Governments are required to strengthen cooperation and communication with private sector to ensure employments of migrants. Inner Mongolia also finds creative ways to incentivize engagements of private sectors. For example individual sponsors who donate 0.5 million yuan or above, and enterprise sponsors donate 1 million yuan or above will be endowed with naming rights, which means that the new villages or buildings can be named after individual contributors or enterprise.

Measures To Empower Migrants and Increase Self-Resilience

Highlighting the role of empowerment is an innovative addition to the 2013 Plan. This new environmental migration principle aims to enhance the resilience and development capacities of migrants. Governments will activate resources to reinforce the provision of practical trainings on farming, livestock breeding and other vocation skills to affected migrants. Vocational schools are also encouraged to admit more migrants.

Creation Of Special Inspection and Supervision Team

The implementation of environmental migration relies on cooperation and compliance of governments below provincial level, who may deviate from the roadmaps designed by the Provincial Governments. The new version of 2013 Plan has realized the importance of regular and continuous assessment on the performance of lower governments. Therefore the Provincial Government creates an inspection and supervision team represented by the Provincial Party Commission, Provincial Bureau of Agriculture and Animal Husbandry, Provincial Reform and Development Commission and Provincial Office of Poverty Alleviation. This team will regularly inspect the process of migration and poverty reduction, assess and validate all related work at the end of each year. Based on the results of the annual assessment, tasks and budget allocation for the following year may be subject to adjustment.

Stricter Management and Supervision on Funds

Environmental migration involves 18.98 billions yuan budget, which is an enormous number and also directly affects the lives and well-beings of migrants. The Inner Mongolia government tightens its control on fund management to prevent misappropriation, delay, suspension and other unwarranted uses. The budgets allocated for environmental migration will be managed and audited in special accounts to guarantee that all of the funds are used for their intended purposes.

3.2. Impact Assessments of Environmental Migration

The complexity and magnitude of environmental migration, in conjunction with the unique social contexts of Inner Mongolia affect the society, economy, environment and indigenous people in many different aspects. In order to collect recent first-hand opinions from migrants, affected groups and other residents in Inner Mongolia, questionnaires were designed and distributed to collect qualitative information from the ground (Figure 4). In total, nine responses were collected from Inner Mongolia. Among those 9 responses, two respondents are migrants who experienced resettlement by themselves. The others are Inner Mongolia residents or environmental engineers who are aware of the problems and benefits involved in environmental migration. Considering the huge scale of previous and ongoing environmental migration, the survey samples collected are inadequate to depict a complete picture on the overall impacts. In order to overcome this limitation, I selected 2 case study sites based on two migrants' current residencies in Darhan Muminghan and Urad Zhongqi, as well as the third case study in Wansheng village because of the availability of background information. The locations of the three case study sites are shown in Figure 5.

The assessments were conducted by examining pre- and post-changes occurred in economic, social and environmental pillars. The information provided by Darhan Muminghan and Urad Zhongqi was used for economic impact assessments. Socio-cultural impact was carried out for Wansheng village. Environmental assessments were applied to the entire Inner Mongolian region, complemented with limited volume of information gathered from questionnaires. The structure of impact assessment is in Figure 6.

Figure 4. Samples of Collected Questionnaires

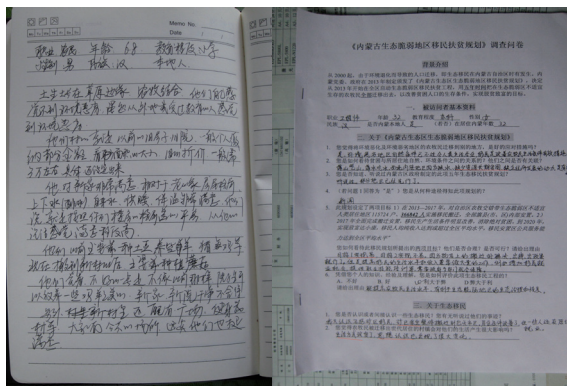
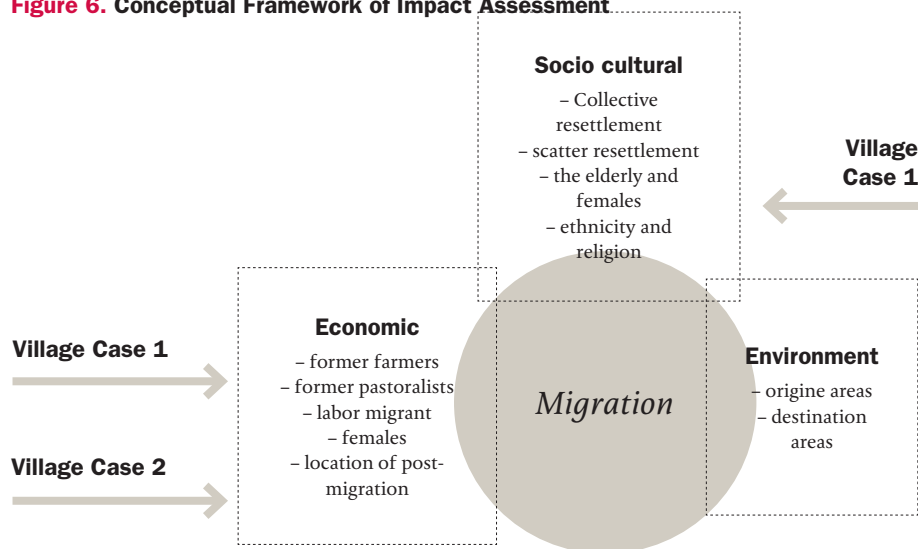


Figure 5. Location of the Three Cast Study Sites



Figure 6. Conceptual Framework of Impact Assessment



Source: Author, 2014.

3.1 Economic Impacts

Binding environmental rehabilitation with poverty reduction, environmental migration in Inner Mongolia takes place along with labor force transferring and structural adjustments that will bring about fundamental economic changes. Before migration, traditional farming and nomadic herding constitute major economic activities and income sources for both herders and rural residents. Following the enactment of Grain for Green Project and environmental migration projects, the extent and scale of farming and grazing are strictly tightened. Limited by decreasing farmlands, cash crops and high-yield agricultural productions are favored by local governments to achieve income-boosting goals. Former herders assigned little or no farmlands after migration are incentivized to breed caged livestock or transform to farmers and workers. Due to the scarcity and low-quality of farmlands, considerable amounts of former farmers and former herders are converted to labor workers relying on employments in adjacent cities or industrial zones. Changes in production practice have resulted in diverse impacts influenced by wide range of factors, including profession (farmer or herder) before migration, ethnicities, genders and ages. In view of dissimilarities, it is unwise to generalize migration-induced economic impacts. Case-by-case and village-by-village study is more appropriate to analyze economic changes at lower levels focusing on affected individuals.

Dasheng village in Urad Zhongqi is a migrant settlement where residents have been relocated from the periphery of degraded grasslands and drying farmlands. Before migration, they were wither farmers or nomadic herders. After migrating to Dasheng village, villagers mainly depend on sunflowers and corn growing. Sunflowers are cash-generating crops for trading in markets, and corns are used to produce food. The average household income is 30,000 yuan per year for migrants, which is 3 times higher than their 10,000 yuan average annual income before migration. Similar changes are taking place in Darhan Muminggan migrant village where each household is provided with, on average, 1.3 hectares of farmlands. Prior to migration, the average annual household income produced from farming is below 10,000 yuan as opposed to a post-migration's 25,000 yuan annual income made from crop growing. But this positive change only occurs for migrants who are used to be farmers before migration.

It is crucial to clarify that income variation is different between former farmers and former herders who are currently living in the same places in Darhan Muminggan. After migration, it is impossible for former pastoralists to continue their herding life. Instead, they are allotted with farmlands and encouraged to raise caged animals. Migrant families, who lived on herding prior to migration, experience the drops of average annual income, from 40,000 yuan to 10,000 yuan after migration. Lacking in skills and experience in raising caged cattle or farming are considered as major reason of former herders' post-migration economic retrogress according to answers from questionnaires.

In addition to cash crop-based farming and husbandry, employments produced from factories and big farms are officially identified as important means to generate additional incomes. However, the reality is that migrant villages in Darhan Muminggan are not very close to big factories, consequently only a small amount of male migrants manage to find jobs in factories. Most migrants live on sheep raising or occasionally employed by big farms to grow potatoes or shear sheep. In migrant village of Darhan Muminggan, income from employment only accounts for 7,000 yuan household/year. In comparison, employment revenue contributes greater to annual income in Urad Zhongqi that equals to 15,000 to 20,000 yuan household/year. The gap of the salary-based income in two case studies arises from proximity to factories and big farms. Migrant villages in Urad Zhongqi have easy access to big industrial parks, and thus half of migrants, irrespective of gender, are eligible to be hired as workers to expand their incomes. Summary of income changes is listed in Table 2 Comparison of Incomes Before and After Migration (Author 2014).

Table 2. Comparison of Incomes Before and After Migration

Cast Study Sites	Pre-migration	Post-migration			Income Change	
	Economic activity	Income	Farming	Livestock Raising		Employment
Urad zhongqi	Farming	10000	30000		15000-20000	Increase
	Pastor herding	-	-	-	-	-
Darhan Mिंगgan	Farming	<10000	25000		7000	Increase
	Pastor herding	40000		10000		Decrease

Income : yuan,

It is worthy to point out that there are gender and ethnicity disparities with respects to employment opportunities. In Darhan Muminggan, only a minority of males succeeds in finding jobs in adjacent industries due to limited vacancies. Instead, both female and males can easily find employment opportunities in nearby factories and farms for Urad Zhongqi migrant village residents. Additionally, former ethnic pastoralists face more difficulties to be hired as contracted worker due to language barrier. Most of former nomadic pastoralists speak only Mongolia dialects and have poor command of mandarin.

Unequal income changes and surging living expenses are common difficulties for all migrants. As described in the questionnaires that those migrants are used to lead a simple but self-sufficient life. Overwhelming majority of them are originally from rural villages and grasslands. Farming, herding and other agricultural productions were inexpensive in the past because there is no need to buy commercial inputs or livelihood materials. After migration, the costs of fertilizers, seeds, irrigation, foddors and other inputs for farming and husbandry are significantly higher. Former nomadic herders, after migration, have to spend extra money to build animal shelters for caged livestock breeding. In migrants' former residential villages, they never

pay for water bills because they dig water from wells or use village-owned free water facilities. However, centralized water supply system in new migrant villages adds up water and electricity expenses.

3.2. Socio-cultural Impacts

Socio-cultural impacts in terms of social networks, community culture and rituals are analyzed by using case study site of Wansheng village. The assessments aim for examining changes with respects to social networks, community culture, rituals and sense of self-identity.

Wansheng migrant village is a new settlement specially built for migrants from two Daqing Shan mountainous villages: Wan Jiagou and Zhang Fangtang, with a small number of villagers relocated from other villages. Majority of those migrants are Han Chinese who have predominately resided in the mountain for generations, but are forced to leave their homelands due to the reforestation and conservation of Daqing Shan Mountain. When living in mountainous areas, they relied on subsistence family farming. Migration scheme in Wanjiagou is collective relocation that all households are moved to the same host village, while Zhang Fangtang resettlement is in a scatter scheme where villagers are relocated to different destinations., Similar with former herders of Darhan Minggan migration village, migrants in Wansheng settlement complain about declining income in the wake of migration.

Pre-migration, former villagers from Wang Jiagou lived in a very traditional and Chinese manner. The village played the role of a big family where people were closely tied together through well-developed social networks. Each villager and household contributed valuable social capital for other members in provision of emotional bonding, moral support, financial and labor assistance etc. Those intimate connections partially resulted from its isolated location in mountain, but more importantly community spirit and mutual-help are the essences of culture and tradition for rural Han Chinese. Following collective resettlement to Wansheng village, most villagers think their previous social networks continue in new village. Specifically, many villagers feel closer bonds with others as a result of declined income and lifestyle changes. With rigid disposal of income and financial capitals, some villagers attach higher reliance and expectation for financial and physical help from other villagers. In the transition from traditional farming to livestock raising, more frequently villagers resort to neighbors and other villagers for help in terms of knowledge and new skills exchange. For majority of migrants from Wang Jiagou, inter-community relationship are well maintained and even strengthened. Equally important, inter-personal networks and kinships outside migrant village are also enhanced. Because the new village is close to major roads and railways, and thus it is more convenient and less dangerous for migrants to visit relatives and friends living in other places, and vice versa.

The fact that Wansheng village is a mixed settlement housing migrants from various origins proposes both challenges and opportunities concerning social networks. 1 respondent described in the questionnaire that he and his community are not well acquainted with neighbors moved form different origins. They have no chance to improve relationships with other residents due to limited leisure time and public events. The fragmentation of the origins of the migrants and lacking in communication in Wansheng village causes unpleasant feelings and unfriendly atmosphere for some villagers. Interestingly, a interviewee reported different opinions regarding to social network changes. He wrote in the questionnaire that some migrants try to expand their networks by interacting with new neighbors, hoping to learn different life experience and skills.

Elderly villagers face bigger difficulties of adapting to the new life and environment. Lacking in familiarity and attachment with new village can lead to feelings of insecurity. In comparison with their former homes in mountains, the new village is not only bigger in size but also more interactive with the outside world. Therefore,

some old villagers are skeptical of strangers, visitors and vendors showing up in the village, whom they regard as robbers. Occasionally, the rapid change of lifestyle, living conditions and social networks provoke the feelings of loss of self-identity and self-value especially for the elderly.

Migration also exerts changes to community culture and rituals. In the past, villagers in their hometowns had the custom of celebrating important festivals such as Chinese New Year together by treating each other food and gifts. Wansheng migrant village consists of different groups of people that can dismantle the migrants' traditions of collective celebration. As one respondent wrote in the questionnaire that "Chinese New Year has become less and less interesting and important in new resettlement". (Questionnaire filled by anonymous migrant villager on 24 March 2014 in Hohhot).

Chinese people have the culture of respecting and visiting deceased relatives at graveyards in important holidays. But the new migrant village is far from their old mountainous hometown where the graveyards locate. The long distances to former residencies have radically transformed the ritual of graveyard visiting, with many villagers giving up going back to their former lands to clean graves and pay tributes to the deceased. The cultural change is more radical for ethnic Mongols and herders, who are well-known as "brave race in the horseback". Migration to settlements in semi-urban setting marks the end of the tradition of living nomadic life and herding freely in grasslands. One respondent emotionally commented in the questionnaire "In real sense, those horse riders chasing after big flocks of sheep are no longer the nomadic Mongolia herders. They just showcase their dying life and tradition for tourists." (Questionnaire filled by a migrant villager on 22 March 2014 in Urad Zhongqi)

3.3. Environmental Impacts

Minimizing anthropogenic activities; grazing, farming and extracting natural resources in ecologically fragile zones are major components of environmental migration and ecological rehabilitation. After moving populations out of ecologically fragile zones, grasslands, farmlands and forests that have previously reached carrying capacities are mitigated and restored by replanting, re-nourishing or rehabilitating naturally.

Since the implementation of environmental migration and the Beijing-Tianjin Sand Source Control Project in 2000 in Inner Mongolia, grasslands with salinity, desertification and degradation problems (San Hua) have declined from 1200 km² to 733 km². Forest and grass covered lands in Inner Mongolia have expanded by 101 km². The quantity and quality of grasslands in sand-controlled areas have increased greatly since 2000, with canopy density reaching 0.4 and grass coverage raised from 33% to 65% in Inner Mongolia (Li 2013). In general, the scale and speed of land deterioration in ecologically fragile zones is under control and greatly mitigated. In this aspect, environmental migration and demographic re-distribution exert positive environmental impacts for areas of origins.

A reported 'sounder ecosystem' by official figures partially corresponds to some migrants' narration. Some residents in Wansheng migrant villages described what happened to their old villages. They stated that the mountainous areas they used to live look healthier and livelier than before, and vegetation (grasses, bushes and woods) is denser. In the past, sands and deserts expanded due to deforestation and excessive farming. Today, the encroachments of sands slow down attributing to increased vegetation coverage and reduced human activities.

However, environmental restoration by restricting human activities in pastures, farmlands, forests and mountains is not consistently and fairly enforced. Human rights organizations disclosed the existence of land grabs and mining extractions in grasslands and farmlands, where former residents were relocated out and grazing and destructive activities were banned (SMHRIC 2014).

Abundance in and accessibility to water and land resources are important criteria in selecting destinations of migration, according to the 2013 Plan. This criteria is important in the sense that ecosystems of destination should be suitable to support the influx of migrants without being damaged. However, big-sized resettlement is possible to ameliorate or aggravate local environments. The most immediate impacts on destination areas are mounting yields of solid wastes and wastewater from households, farming and livestock breeding. The situation is worsened due to absence of solid wastes and wastewater treatment in most rural areas and small towns of China. Although new resettlements are well equipped with electricity, gas, insulation and drainage pipes, lacking in on-site capacity to handle wastes and wastewater can pollute or degrade the eco-system of host places. For instance, increasing numbers of caged cattle in migrant villages produce considerable amounts of feces that in return contaminate the water and lands (Figure 7). Most migrant villages are ill-equipped or incapable to handle waste problems responsibly, they just maintain the practice of dumping wastes in ditches, landfill sites or barren areas nearby the villages.

Figure 7. Milk Cow Breeding Shelters in Migrants Village



Source: Sohu News 2008

Water resource is a long-term constraint in Inner Mongolia. It is more harmful for migrant settlements because rising population in host places lead to ascending water consumption for daily life, husbandry irrigation. Climbing water demands pose challenges for host governments to re-plan and and upgrade water resource management systems.

4. CONCLUSION

The complexity of environmental migration in Inner Mongolia is well represented by the contradictions and fragmentations of impacts happening at both macro and micro levels. In this context, the effectiveness and impacts of environmental migration in Inner Mongolia should be examined and evaluated on general levels and specific cases. Generally speaking, progress has been made with respect to curbed land degradation, recovered vegetation and income growth. However, the impacts of migration on a particular village or a specific group are too varied to reach assured conclusions. Some migrants are better off after migration, for example former farmers who move to Darhan Minggan experience increased incomes due to cash crop cultivation. In contrast, some migrants living in the same village with the better-off people are exposed to bitter life due to income drop. For instance, former herders who face difficulties to take care of caged cattle or take up farming. Restored ecosystems as a result of environmental migration are stained by speculations or land grabs in ecologically fragile zones that should be left untouched by industrial development. Environmental migration unites people of different backgrounds to share

the same land in migrant villages, but meanwhile indigenous traditions and ethnic cultures are endangered due to separated and shattered communities.

The above dilemmas and contradictions involved in environmental migration are valuable references for the government at various levels and other stakeholders to reflect, adjust and reform the established strategies, policies and governance on environmental migration. There is hope that while the 2013 Plan is still in its initial stage of implementation, the Chinese Central Government and various regional authorities within Inner Mongolia have a chance to reflect on those lessons and readjust policies to better support and manage environmental migration. ♦

BIBLIOGRAPHY

- Bagan, Hasi. and Yamagata, Yoshiki. 2009. Land cover mapping and change detection in Mongolian plateau using remote sensing data. *International Symposium on The Impact of Climate Change on Region Specific Systems*. Sapporo, Japan.
- Chu, Chunxia. and Meng, Huijun. 2005. Problems and reflections on Inner Mongolia environmental migration. *North Economics* 6.
- Chu, Chunxia. and Meng, Huijun. 2006. Ecological migration and sustainable economic development in Inner Mongolia. *Research of Agricultural Modernization* 27. 2.
- Forestry Bureau of Inner Mongolia. 2011. Bulletin on desertification and sand information in Inner Mongolia.
- Inner Mongolia Chronicles, 2013. www.nmqq.gov.cn/quqing/ShowArticle.asp?ArticleID=8752 (Consulted on 15 April 2014)
- Inner Mongolia Development and Reform Commission (IMDRC). 2001. Opinions on implementing environmental migration and poverty alleviation migration projects
- Meteorological Bureau of Inner Mongolia, www.imwb.gov.cn/ (Consulted on 16 April 2014)
- Tan, Yan. and Fei, Guo. 2007. Environmental concerns and population displacement in west China. *8th APMRN Conference*.
- Wang, Hong. and Wu, Bin. 2013. Analysis on environmental problems of Inner Mongolia. *Journal of Chifeng University (Natural Science Edition)* 29.10.
- Li, Yuanyuan. 2013. Research on the urbanization on environmental migrants in Inner Mongolia. *Inner Mongolia Statistics* 3.
- Liu, Zhi. and Zhao, Xiaoying. 2009. Prevention and control of desertification, soil and land erosion in Inner Mongolia. *Inner Mongolia Prataculture* 21.2.
- National Development and Reform Commission (NDRC), 2000. Reports on tentative ideas on the implementation of West Development strategy. www.gov.cn/gongbao/content/2000/content_60611.htm (Consulted on 10 April 2014)
- Souther Mongolia Human Rights Information Center (SMHRIC). 2014. Fresh wave of herders' protests erupts following Chinese Premier's visit to Southern Mongolia.
- Sohu News. 2008. "Environmental refugee and environmental migration". In *Sohu News*. Beijing.
- The State Council, 1998. National Environmental Development and Plan www.chinalawedu.com/falvfagui/fg22598/11270.shtml (Consulted on 10 April 2014)
- Wang, Yan. 2014. Disinformation, displacement and destruction. In *News China*. New York. www.newschinamag.com/magazine/disinformation-displacement-destruction (Consulted on 18 April 2014)
- Yi, Baozhong. and Zhan, Liwei. 2011. Environmental impacts of immigrants from Qing dynasty in Inner Mongolia. *Collected Papers of History Studies* 5.

ELHAM TORABIAN

Exploring social vulnerability and environmental migration in Urmia Lake of Iran: Comparative insights from the Aral Sea

Environmental migration has attracted more attention over the recent years. This increasing interest emanates from the global crisis caused by 'climate change and other human-induced environmental changes' (Sachs, 2014) and their impacts on the wellbeing of populations. As unfortunate as it may be, environmental disasters have been occurring with higher frequency and magnitude in recent years, e.g., Solomon Islands tsunami in 2013; Mozambique flooding in 2013; and the drastic depletion of the Aral Sea in 2010 (see World Disasters Report 2010, OCHA). According to OCHA-IDMC (2009)- (United Nations Office for the Coordination of Humanitarian Affairs (OCHA) and the International Displacement Monitoring Centre (IDMC)- more than 20 million people have already been displaced within and outside national borders of countries struck by environmental disasters; and an estimated 25 million to 1 billion people could be displaced within the next 40 years (International Organization for Migration, IOM, 2009).

Environmental migration cannot only be induced by sudden onset disasters but is also caused by slow onset of environmental changes. In fact, the number of people displaced due to gradual changes in environment may actually be higher than those displaced due to sudden disasters. As explained in EM-DAT report (2009)- (see International Emergencies Disaster Database: <http://www.emdat.be/index.html>)_ 1.6 billion people were displaced due to droughts compared to 718 million displaced as a result of sudden on-set of disasters from 1979 to 2008. The underlying reason for such escalated migration patterns is that gradual environmental change creates an increasingly difficult socio-economic context in which people either volunteer or are forced to migrate. That is, as populations' livelihood and their economic and social wellbeing are gradually undermined by changes in their immediate environment, those who can afford may choose to migrate either temporarily or permanently.

Whether and when families decide to migrate is directly correlated with the stages of the actual environmental change. At the early stages of environmental change families may choose to voluntarily leave in search of more suitable places. As the environmental change gradually develops so does its impact on the social wellbeing of populations who would eventually be forced to leave to more suitable places further away. The final episode of the environmental change, however, may have a negative correlation with families' migration pattern as those who have been left behind may be entrapped and be unable to leave.

Although there is much debate over drivers of migration and whether it has a voluntary or a forced nature, it is evident that environmental change can be counted

among pull or push factors for migration, as they have since ancient times. Some of the instances of gradual environmental change that may lead to migration include: desertification, rising sea levels, soil erosion, degradation of natural resources, and lack of access to safe drinking or irrigation water- many of which are human-induced. This paper is an attempt to examine social impacts and patterns of environmental migration caused by the gradual depletion of a certain natural resource: Lake Urmia in Iran. To this end, this article questions i) the social vulnerabilities that may arise from the depletion of Urmia Lake: This will allow an exploration of the types and intensity of socio-economic impacts in the lake's region, drawing specifically on social vulnerabilities that have already occurred in the case of the Aral Sea; and ii) if and how the gradual disappearance of the Urmia Lake may lead to environmental migration. This will allow understanding the possibility, patterns, and kinds of migration evoked at different stages of the Lake's depletion.

This paper is divided into three main parts. In the first section, an analysis of the current situation, causes and challenges of the degradation of Urmia Lake will be outlined by drawing on relevant literature. This section will also include an analysis of the Aral Sea depletion and its social impacts. In the second section, social impacts of Urmia Lake depletion will be examined considering the basin countries' contextual and socio-economic specifications. The geographical coverage of this analysis will be limited to an immediate basin impact region (IBIR) of 100 Kilometers circle around Urmia Lake and a further basin impact region (FBIR) within a 500 Kilometers distance from the Lake including: Armenia, Azerbaijan, Iran, Iraq, Syria, and Turkey (See Map 1 below). This section will end by replying to the first research question and will highlight Urmia basin countries' social vulnerabilities. Some of the data used to answer the first question are: Environmental Vulnerability Index (EVI), Human development Index (HDI), urban population density and annual growth rate as well as data on health and global governance Index. Before presenting final remarks and conclusion, the third section of the paper will explore the possibility of environmental migration as well as its patterns and consequences for Iran and the region.

Map 1. Immediate basin impact region (IBIR) and further basin impact region (FBIR)



Originally created by Torabian, Elham(2014): The inner red circle is a region within 100 km range from the center of the Lake Urmia; the Outer red circle has a 500 km radius and includes all 6 countries of the Urmia Basin: Armenia, Azerbaijan, Iran, Iraq, Syria, and Turkey.

1. EXPLORING LAKE URMIA AND ITS DESICCATION

To understand the social impacts of the receding Urmia Lake in Iran, it is worthwhile to scrutinize previous similar cases. In fact, as the 'complex nexus' of migration and social vulnerability in past cases unfolds it may serve as a model to understand the new case at hand. Indeed, the aim of such analysis will not be to generalize the trends and challenges of the past experience to those of the current case; such delineation will simply serve as a frame of reference to which contextual factors of the new case will be added in order to arrive at a context-specific understanding of migration and environmental change. Although there is a long list of depleting lakes and seas around the world, I have chosen to take after many studies that have compared Urmia Lake with the Aral Sea (Garousi et al. 2013; Charandabi, 2013; Pengra, 2012; Hassanzadeh, 2011; Micklin, 2007). The case of the Aral Sea will serve as a model for projecting the social vulnerabilities and migration patterns caused by the desiccation of the Urmia Lake.

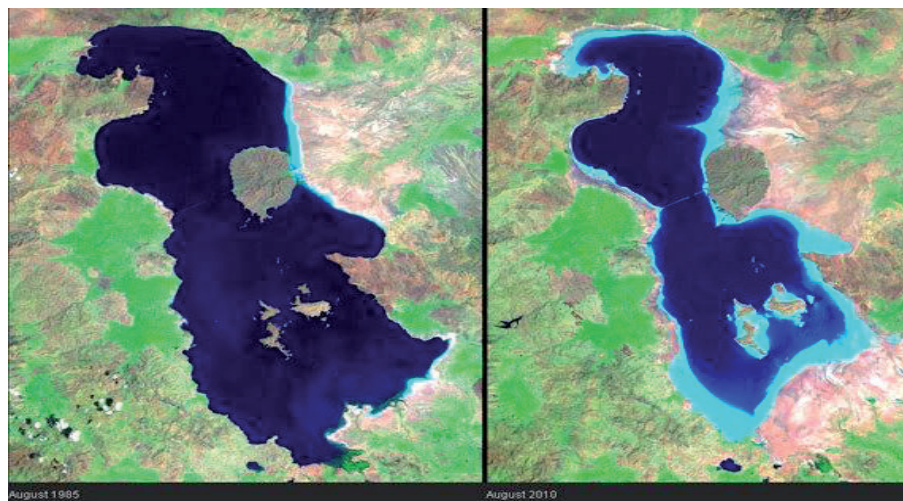
1.1. Introducing Lake Urmia: An analysis of its importance and current situation

Lake Urmia is an endorheic (closed or terminal basin with no outflow) and hypersaline (A landlocked body of water with significant concentration of salts more than 35 g/l) basin situated in the northwest Iran extending as long as 140 kilometres from north to south and as wide as 85 kilometres from east to west. Registered as a UNESCO (United Nations Educational, Scientific, Cultural Organization) biosphere reserve and an internationally significant wetland in the 1971 Ramsar Convention (Nazaridoust, 2011) the lake is the third largest hypersaline basin in the world and the first largest in the Middle East; accommodating more than 210 species of birds, reptiles, amphibians and mammals, a unique salt-water shrimp species called *Artemia urmiana* and a significant variety of salt tolerant plants (UNEP report, 2012). The basin's surrounding villages and cities are home to 6.4 million people and an estimated 76 million people live within a radius of 500 kilometers (Food and Agriculture Organization of the United Nations, FAO 2010).

The surface area and water level of the lake have decreased significantly during the last four decades, with its depletion rate rapidly accelerating in recent years. According to Hassanzadeh et al. (2011) the estimated water level of the lake has decreased 7 meters from its highest level of 1,278 in 1995. Although the decline in water level does not seem impressive at first glance, it has had a significant impact on the surface area of the lake due to its original shallowness. That is, in 1995 the surface area of the lake was estimated at almost 6,100 KM² remaining stable from 1969, which has now declined to almost one third, 2,366 KM² in 2011.

The decline in water and surface levels has in turn had two immediate impacts. One is the unprecedented salinity increase in the water, i.e., 300 g/L- more than 8 times salt in any typical saline basin, which has proved fatal for the lake's brine shrimp and has consequently led to a disruption in the lake's food cycle. In addition, the dried surfaces of the lakebed has turned into a wide salty desert of more than 400 square kilometers that not only threatens agriculture and natural vegetation growth around the lake but is also predicted to endanger cities and villages within close approximation to the lake due to high probability of future salt and sand storms (Hassanzadeh et al., 2011). Several environmental studies have predicted similar fatalities associated with the lake's biodiversity and population caused by the drying of the Aral lake drying (Micklin, 2007 and Pengra, 2012). The below satellite picture is adapted from the UNEP report 2012 showing the decrease of water surface and level from 1995 to 2011.

Map 2. Adapted from ‘The drying of Iran’s Lake Urmia and its environmental consequences’



Source: UNEP 2012 Report

1.2. Trend and Causes of Urmia Lake’s depletion

Several direct and indirect human-induced factors are recognized as causes of the lake’s rapid drying in the last three decades.

Among the indirect causes, climate change impacts such as drought and low precipitation levels are considered as the two major contributing factors to the lake’s desiccation. The annual rainfall over the Lake has decreased by 40 per cent from its average 235 mm from 1967 to 2006 (Hassanzadeh et al., 2011), leading also to a decline in the level of groundwater in the area (Zarghami, 2011). The impacts of such indirect environmental factors on Urmia Lake have been quite significant. For instance, a comparison of the surface level of the Sevan Lake in Armenia and the Van Lake in Turkey, both of which are located less than 200 km away from Urmia Lake and reveals that despite similarities in their geographical situations, none of the two lakes have declined as has Urmia Lake (UNEP, 2012). The report highlights the fact that being the shallowest among the three, Urmia Lake has been more vulnerable to climate change issues such as low precipitation rates. The 4 degrees rise of temperature in the lake’s region also bears a negative impact on the Lake’s sustainability.

However, direct human-induced impacts have played a greater role in the rapid desiccation of the Lake. Based on a systematic literature review of 25 academic articles conducted by Garousi et al. (2012) common causes of the Lake’s decline are recognized to be: a) construction of dams; b) poor water management policies; and c) construction of a primitive-type causeway (An elevated road/railway over a wetland) dividing the lake into two north and south lakes with almost no connectivity. In addition, a rapid increase in population size and aggressive use of the lake’s water and nearby underground water reserves for irrigation purposes and diversion of in-flow rivers have worsened the situation (Golabian, 2010).

Construction of dams is one of the most contested policies of the central government in Iran with undeniable environmental impacts on the lake. Urmia is a terminal lake, therefore in addition to evaporation the only other explanation for the lake’s decreasing water level is a drastic reduction in incoming water. According to Mohebbi et al. (2007) almost 25% of the decline of Urmia Lake is in fact due to dam construction compared to 10% impact of low precipitation. In the last three

decades, a number of 48 dams have been constructed over the 13 rivers that flow into the Lake - mainly for irrigation purposes but also for electricity, household water and economic development of the region and its increasing population (ibid.). The amount of water kept behind the dams accounts for up to 13% of the Lake's health capacity; this combined with low rates of rainfall can partially explain the current situation of the Lake (Alipour, 2006). In addition, availability of irrigation water accumulated behind the dams has led to a change in farmers' cultivation attitudes from subsistence to intensive agriculture (Ilhan et al., 2012).

Furthermore, the increase in water consumption for irrigation and the rise in population have not only resulted in the rapid decrease of Lake's surface water but also an aggressive use of underground waters. Local farmers interviewed in Ilhan et al.'s (2012) study have explained that only a decade ago they could reach underground water digging wells of 30 to 40 meters while currently they have difficulty accessing water even with 70 meters deep wells. Thus, construction of dams and diversion of water could be considered as the two important causes of reduced inflow into the lake leading to drastic decline of its surface and water level.

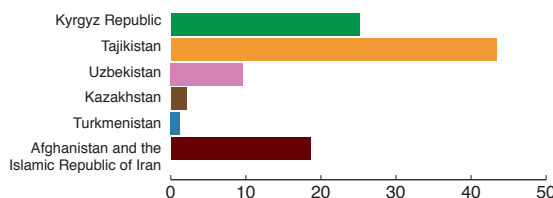
In addition, other unsustainable management practices threaten the future of the Lake. Intensive and industrial agriculture in the lake's region and rapid urbanization have resulted in a high discharge of agro-chemical and residential sewage into the lake and thus are causing water contamination. Dividing the Lake into two dissimilar bodies of south and north bodies of water-, the causeway constructed across the Lake has 'disturbed salinity levels, density and distribution of brine shrimp and the equal distribution of inflow waters' (Mohebbi et al., 2007) thereby a further drying out of the lake. Some of the other direct human impacts on the lake include: increased sediment inflow through agricultural development and conversion or damage to natural pasturelands; increased fish-culturing activities that are not compatible with the lake's water quality; and explosions from mine excavation.

1.3. Exploring similarities with the Aral Sea

The Aral Sea used to be the fourth largest landlocked saline and enderheic lake with an area of 68,000 square kilometers situated in the semi-arid and desert areas between Kazakhstan in the north and Uzbekistan in the south. This entails a similar situation to that of Urmia Lake where the main contributing factors of depletion of the water resource are limited to evaporation and diversion of rivers.

In addition to Kazakhstan and Uzbekistan, the basin area of Aral Sea is shared among five more countries including Kyrgyzstan, Tajikistan and Turkmenistan, Afghanistan and Iran. The basin encompasses a total area of 1,549,000 km². Seven countries share the inflow water of the Aral Sea Basin, as shown in the pie chart below:

Figure 1. Diagnostic report on water resources in Central Asia



Based on SPECA project 2002: 73.

Similar to Urmia Lake, climate change and decreasing annual precipitation rates have borne negative impact on the Aral Sea. However, the depletion of the Sea is more a result of human interventions to divert rivers. According to UNEP (2005),

annual precipitation levels range between 2000-1500 mm in eastern parts of the Sea and 200-80 mm in its western parts. The two main rivers that fed into the Sea; Amu Darya and Syr Darya were diverted during 1950s as part of 'Stalin's expansive irrigation plans' (Grigoryev, 1952). The goal was to cultivate the 'white gold' or cotton as a result of which Uzbekistan remains the world's largest cotton provider today (USDA-Foreign Service, 2008). Child labor in Uzbekistan in these very same cotton fields has been a human rights concern in recent years- See Human Rights Watch report in: <http://www.hrw.org/news/2013/01/25/uzbekistan-forced-labor-widespread-cotton-harvest>. Due to an increase in population size surrounding the Aral Sea region (14.1 million in 1960 to 47 million in 2008), the irrigation area has also increased to 8.5 million hectares which has meant a drastic reduction of water volume in the Aral Sea from 1,093 km² in 1960 to 0.27 km² in 1984 (Aralgenefund, 2012; Viktor, 2011).

These human-induced changes have significantly affected the Aral Sea. In 1987, the Sea was divided into two parts: the Large or Southern Aral Sea and the (Northern) Small Aral Sea; by 2009 the Southern Sea disappeared and the North Sea had a maximum depth of 42 meters. The drying of the Aral Sea has caused more extreme air temperatures, i.e., hotter summers and colder winters (Aralgenefund, 2012). Following the separation of the lake from 1986 to 2000 the precipitation of the Small Aral Sea has reached almost zero (CAWATER, 2012). However, a 2014 NASA report indicates that changes in the rainfall patterns have been misleading since 'lake-effect precipitation downwind of the Aral Sea has decreased, but precipitation over the sea itself has increased' (see <http://www.jpl.nasa.gov/news/news.php?release=2014-050>). The amount of the dry seabed has risen from 4.5 million hectares in 1960 to 8.7 million hectares in 2010 (Viktor, 2011).

In addition, the sea used to support a major fishery and functioned as a key regional transportation route. The extensive deltas of the two major inflowing rivers sustained diverse flora and fauna. They also supported irrigated agriculture, animal farming, hunting and trapping, fishing. It also allowed harvesting of reeds which served as fodder for livestock as well as building materials. Decrease of the Aral Sea water level has meant a major loss of fish resources (20 fish species in 1960, reduced from 11 fish species in 1970 to just 1 species in 1990) and local climate change impacts such as flooding in winter, initiation of salt and sand storms, desertification and loss of flora and fauna (Micklin, 2014; Dukhovny & Shuetter, 2011; Alikhanov, 2011; Micklin, 2007; Forkutsa, 2006). Of course, the Aral Sea will not desiccate completely but both the Small and Large Sea may survive only to become too hypersaline to yield any economic or ecological value except for production of Artemia brine shrimp eggs; although the future survival of the Large Sea is both debatable and problematic (Mickline, 2014).

As it can be observed, both basins of the Aral Sea and Urmia Lake share similar desiccation causes and trends, particularly when it comes to the human-induced changes. Such resemblances has persuaded many environmentalists to believe that Lake Urmia and its surrounding population will soon be exposed to similar challenges that Aral Sea basin population have previously experienced (Boms and Arya 2012, Pengra 2012, Micklin 2007).

In the following section I will highlight the social impacts caused by desiccation of Lake Urmia. First, the Aral Sea impacts on the social wellbeing of surrounding populations will be examined. In order to differentiate the Urmia Lake and Aral Sea impacts I will then draw on the Environmental Vulnerability Index (EVI) of countries in the two basins. This will facilitate a comparison of vulnerability in the two basin areas and the intensity of the social impacts in countries of Urmia basin. The average EVI and other socio-economic and development indicators such as HDI, poverty rates, population growth rate, urbanization, unemployment and health issues will be used to better demonstrate the social vulnerability of Urmia Basin desiccation which will eventually lead to the entrapment, voluntary or forced migration of the basin's population.

Table 1. Comparative data on Urmia Lake and the Aral Sea

	Urmia Lake	The Aral Sea
Geographical position	Iran, Middle-East, Landlocked	Uzbekistan – Kazakhstan, Central Asia, Landlocked
Coordinates	370.42 N, 450.19 E	450 N, 600 E
Surface Area (km2)	3,500 (2013)	Small Aral: 3300 (in 2008); Large Aral: 27,750 (used total 68,000 in total)
Average depth (m)	16	10 (10%: 42) 2008
Water Volume (km3)	-74 %	Small Aral: 22km3/Large Aral: 70 km3
Lake level (m)	1273 m above sea level	Small Aral: 40.8 drop; Large Aral:40.1
Type of lake	Enderheic	Enderheic
Primary inflows	13 Aji Chay, Alamlou River, Barandouz River, Gadar River, Ghaie River, Leylan River, Mahabad River, Nazlou River, Rozeh River, Shahar River, Simineh River, Zarrineh River, Zola River	2 Syr Darya (North) Groundwater only (South) (previously Amu Darya)
Basin countries	(6) Armenia, Azerbaijan, Iraq, Iran, Syria, Turkey	(7) Afghanistan, Iran, Kazakhstan, Kirghizstan, Tajikistan, Turkmenistan, Uzbekistan
Causes and depletion	Climate change Dam construction Increased sediment flow Low precipitation Unsustainable water management of irrigation river diversion Lack of political and legal frameworks Population increase	Climate change Irrigation Increased sediment flow Low precipitation Unsustainable water management River diversion Decreased ice resources Lack of political and legal consensus Population increase
Salinity (g/l)	300g/l , Hypersaline	270 g/l , Hypersaline

Created by Torabian, Elham (2014)

2. PROJECTING THE SOCIAL IMPACTS OF URMIA LAKE DEPLETION BASED ON THE ARAL SEA EXPERIENCE

2.1. Health, water and food security

The social impacts caused by the Aral Sea desiccation are multiple. The primary issue has been health. According to Micklin (2014) the population around the Sea suffers from several acute health problems caused by depletion or contamination of the Sea. There had been incidences of water borne massive outbreaks such as typhoid fever, hepatitis A and diarrheal diseases (MSF (2001) Aral Sea Program, Medecins Sans Frontieres. <http://www.msf.org/aralsea>). Some of the direct health issues include Tuberculosis and respiratory diseases (Small et al., 2001). Furthermore, digestive afflictions and cancers, malnutrition and anaemia have increased drastically (Ferriman, 2000; Ataniyazova, 2001). These health issues are generally as a result of the Aral basin's population exposure to a) toxins and minerals in salt and dust storm, b) as they have used the contaminated water of the Sea; c) the discharged water from agricultural fields with high level of pesticides. Furthermore, the decline in water levels has

caused poor health for the household's whose main food used to be fish or other agricultural/animal products. The already vulnerable populations with low access to health services, proper nutrition, hygiene and safe water have been struck more severely with health diseases and outbreaks.

In addition, the salt and sand storms have had a further negative impact on the food security of the Aral region by damaging animal and plant lives. Similarly, equal access to safe water and water for irrigation, as well as power generation has declined due to population growth, upstream countries' higher use of water than agreed and inefficient water management and lack of legal frameworks to regulate water management especially among the basin countries. For instance, in 2000, when overall water supply dramatically decreased, it is reported that the water abundance (the ratio of total water withdrawal to the total required amount of water) was 90% in the upstream region of Tajikistan but only 40% and 45% in the downstream regions – of Dashauz in Turkmenistan and Karakalpakstan in Uzbekistan, respectively (Dukhovny and Schutter 2011:277). Consequently, water shortage has also turned into a major social and health crisis (Whish-Wilson, 2002).

Unfortunately, similar social impacts have already started in the Urmia Lake immediate basin region. With more than half of the Lake already desiccated, the salt from the lake beds have been disposed and locals have reportedly witnessed salt storms that will potentially cause health and agricultural concerns (Garousi et al., 2013). The impact of Urmia Lake salt storms are significant. "It has been estimated that 6 to 8 cities will be totally destroyed, covered by layers and layers of salt. That's 4- 14 million people that have to be displaced to avoid the storm of salt within that region" (The World Radio News Magazine, Sept. 11, 2011 quoted in Garousi et al (2013). Without immediate and sustainable solutions, aggressive sand and salt storms will undermine the health and social wellbeing of the population living in immediate proximity to the Lake. Unfortunately, it is predicted that the Lake will dry out in 2035 with an ecological level unsuitable for economic or ecological benefits. 'If discharge of all rivers to the lake equals to zero (as happened in summer 2010), the precipitation on the lake will not be enough and the lake will be dried thoroughly in 6–9 years. Therefore, similar to Aral, health concerns and food security and access to safe water could affect the Urmia Lake population within 6-20 years from now' (Abbaspour et al., 2012:266). Extreme harsh symptoms as such have been observed in the already depleted Hamoon Lake area in Southeast of Iran; in fact, a diagonal line could be drawn from Hamoon Lake to Urmia Lake to designate a 'security hot zone' in the Middle East within the next decade or so.

To better understand the significance of Urmia Lake desiccation, further complementary data is required. Unfortunately, there are no aggregated statistics on diseases, water access, malnutrition and child stunting for the main cities affected by Urmia desiccation Table 2 below is an attempt to summarize relevant data on Urmia basin countries based on World Health Organization Report 2013.

However, the 2013 WHO statistics may prove helpful here. As shown in Table 3 below all six countries of Urmia basin suffer from a high prevalence of tuberculosis-Turkey has the most cases reported (15,054) and Armenia has the least- with only 1,261 cases reported. Between 5 to 20% of the population in the basin countries remains without access to safe water, except for the cases of Armenia and Turkey where less than 2% of the population remain without access to safe water. The percentage of population without access to improved sanitation remains high and between 9-18% in all Urmia basin countries; except in the case of Iran which ranks the lowest (2%). Child stunting in rural areas of all basin countries is higher than urban areas and could be reinforced with further depletion of Urmia.

Table 2. Urmia Basin countries' population growth and health situation

	% of population without access to improved drinking water resources	% of population without access to improved sanitation	Most prevalent diseases	Child stunting in rural and urban areas respectively	% Annual growth rate of population	% of population living in urban areas
Armenia	2	10	TB	22-17	0.1	64
Azerbaijan	20	18	TB	30-20	1.3	54
Iran	5	2	TB, Cholera, Malaria	-	1.2	69
Iraq	15	16	TB, Pertussis, Mumps	31-25	2.9	66
Syria	10	-	TB	29-28	2.3	56
Turkey	2	9	TB, Mumps, Rubella	-	1.3	72

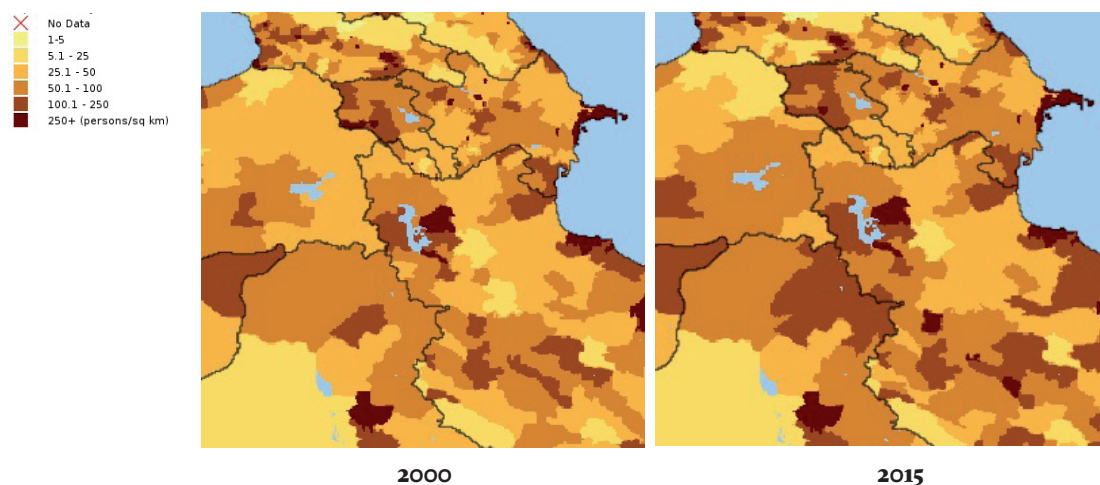
Based on WHO Report 2013

Table 3. Summary of disease cases reported in Urmia basin countries in 2013 (WHO)

	TB	Mumps	Malaria	Pertussis	Others	Measles
Armenia	1261	15	-	-	-	-
Azerbaijan	6527	101	-	-	-	-
Iran	10,980	-	3,239	650	Diphtheria 132	73
Iraq	8837	1,944	-	2,019	Total Tetanus 39	15
Syria	3395	95	-	90	-	13
Turkey	15,054	1,609	128	-	Total tetanus 24/ Rubella 1734	111
Total region	46,054	3,764	3,367	2,759	1,929	212

Note: As observed, TB has the highest frequency and occurrence in all Urmia Lake countries.

Putting together current lack of safe water for drinking, sanitation and irrigation, and the increasing probability of sand and salt storms, it is only logical to conclude that further degradation of Urmia Lake could result in a TB epidemic starting from urban areas that accommodate higher population densities (as shown in map 3 below adapted from SEDAC 2011) as well as and increased child stunting and malnutrition in rural areas. At this stage of Urmia Lake depletion, the inhaled toxins and minerals from salt storms are already believed to have led to throat and lung cancer, infant mortality, decreasing life expectancy and increasing child defects in Iran and the adjacent regions (Zarrineh & Azari, 2013).

Map 3. Population density change in basin countries (2000-2015)

Adapted from Socio-Economic Data and Applications Center (SEDAC, 2011)

3. UNEMPLOYMENT

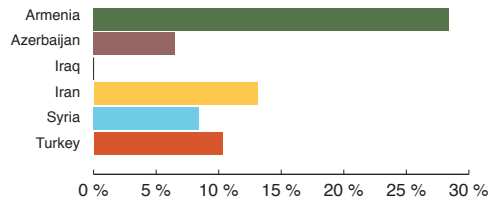
Environmental degradation decreases economic development and productivity. This is specifically true in developing countries where more than half of the population directly rely on –in part or whole- the environment through agriculture, animal farming, hunting, fishing, forestry and foraging (Todaro & Smith, 2012). The impacts of environmental degradation could become significantly severe with population growth and their increased pressure on natural resources especially in rural places (Maureen et al., 1994). Loss of environmental capital then could translate into a vicious circle of unemployment, poverty, a decrease in food security and eventually lead to local/regional conflicts.

The Aral Sea desiccation has indeed increased unemployment. According to a FAO (2007) report, the fishing industry, shipping and all related activities as well as paper industry have drastically decreased. Likewise, jobs in the agriculture section and animal farming have also decreased (See Oblast, 2002 at: <http://nailaokda.8m.com/aral.html>). The total unemployed population amounts to 19.5-17.2% and is growing particularly in small towns, settlements and rural areas especially among the youth (See Myagkov, 2006 at: http://www.sidym2006.com/imagenes/pdf/presentaciones/9_s2.pdf). Women are affected by unemployment issues, in specific, as their gendered roles increases their exposure to social vulnerabilities (Cutter et al. 2009). The desiccation of Aral Sea has indeed deprived the basin population from their functioning, capabilities and as such has caused violation of basic human rights.

Unfortunately, similar impacts on the economic wellbeing of the population living close to Urmia Lake can be observed. According to Zarrineh & Azari (2013) fishing industry and shipping has drastically decreased. Mud bathing which used to attract health tourists has declined due to severe environmental conditions and droughts. As Jafarli (2013) explains 34% of factories related to agricultural industry have closed down leading to the displacement of three million people (For further information refer to: http://en.apa.az/xeber_drying_of_lake_urmia_leads_to_unemplyme_196025.html).

Further depletion of the Lake will also inevitably increase the existing high unemployment rates already prevalent in its basin countries, see Figure 2 and Table 4 below.

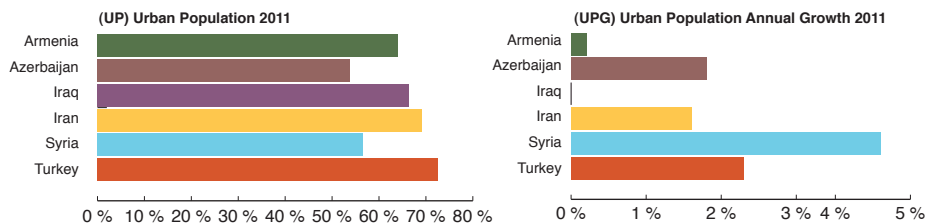
Figure 2. Unemployment rate and percentage in basin countries



Source: Human Development Index Report, UNDP 2013.

Considering the high unemployment rates and the urban population density and growth, shown in Figure 3 below, it is again only logical to deduct that desiccation of the Lake would only worsen the situation if no immediate response mechanism is foreseen. Subsequently, further unemployment in Urmia basin countries will bear significant impacts on the security and sustainable development of the region.

Figure 3. Urban population & growth in basin countries

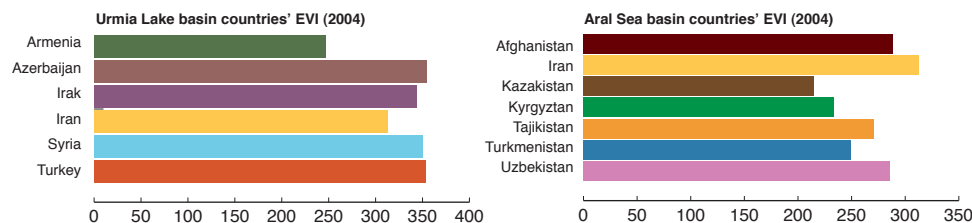


Source: The World Bank 2011.

3.1. Further reflections on Urmia desiccation social impacts:

At a glance, the social impacts of Urmia Lake depletion resemble those of the Aral Sea desiccation. However, a case-specific analysis of the social vulnerabilities in Urmia basin countries calls for further scrutiny of relevant data and statistics.

Figure 4. Environmental Vulnerability Index:

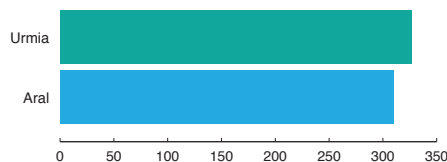


Urmia Lake basin countries' EVI (2004) Aral Sea basin countries' EVI, (2004).

One such significant data is the Environmental Vulnerability Index. In the event of a total depletion of Urmia Lake, the basin countries with higher environmental vulnerability will be more severely affected, facing challenges in health, water and food security, economic and social issues. In the EVI estimates for each country, three aspects of environmental, economic and social vulnerabilities are incorporated (for further information see: <http://www.sopac.org/index.php/>

environmental-vulnerability-index. As observed in Figure 4, Azerbaijan, Turkey and Syria are more vulnerable compared to Iran and Armenia. However, the average EVI of Urmia Lake basin countries is significantly higher than the average EVI of Aral Sea basin countries (Figure 5). This entails that Urmia basin countries are more vulnerable to environmental degradations which may translate into higher economic and social vulnerabilities.

Figure 5. A comparison of Aral Sea and Urmia Lake Average EVI



Average EVI of Urmia Lake and Aral Sea basin countries

Of course, the significance of the Lake's desiccation impact depends on each of the basin countries' population density and other factors such as their human development Index and poverty rates. According to UNDP 2013 report, the HDI of Iran is the lowest among the basin countries (76) and the highest is that of Iraq (131) followed by Syria (116)- note that these data may have drastically changed due to the recent unrest in the two countries. Nonetheless, basin countries with lower HDI like Iran and Azerbaijan (82) and Armenia (87) will be affected more severely than others with higher HDI like Turkey (90). Similarly, higher poverty rates would translate into more significant impacts on the wellbeing of populations living in Urmia basin, higher security and health risks, as well as further violation of human rights. Based on the UNDP 2014 human development report (Human Development Report 2014, Sustaining human progress: reducing vulnerabilities and building resilience), 35.8% of the Armenian population live under the national poverty line, while in Azerbaijan 6% and in Iraq 22.9% live under poverty. Therefore Armenian poor population- and the poorest of the poor- may be affected more significantly compared to those living in Azerbaijan. Iran may be among the most affected countries as it has a higher share of immediate and further basin lands and as it has the highest rate of poverty -more than 50% among the basin countries. (FIDH, 2013; Iran: Rising poverty and declining labor rights (FIDH,2013: http://www.fidh.org/IMG/pdf/iran_report_en.pdf). Furthermore, the rapid increase of the population in the region will only magnify the impacts of Urmia depletion. According to SEDAC (2010) future population estimates in 2015, Urmia IBIR population will be 6.4 million and FBIR population will be more than 76 million, (see: SEDAC (2010), Gridded Population of the World: Future Estimates. Socioeconomic Data and Applications Center (SEDAC); collaboration with CIESIN, UN-FAO, CIAT: <http://sedac.ciesin.columbia.edu/gpw>.)

To respond to the first research question on social vulnerabilities caused by Urmia depletion therefore, it is evident that these are: decreased access to safe water and food, increased probability of health outbreaks, epidemics, malnutrition, and further child stunting. These negative impacts can be amplified among poor households- especially poorest of the poor – who strive to survive the environmental impacts of the Lake's degradation. In a similar vein, increasing unemployment rates, loss of live stock and farm land will intensify poverty traps leading to further decline in the household's wellbeing and the violation of their basic human rights. Considering the high EVI and the diversity of ethnic and religious minorities in the basin countries, the households living in an immediate distance from the Lake will experience severe social vulnerabilities (Cutter et al., 2009). However, as shown in Table 5 below, public service corruption perception index 2013 (see <http://www.transparency.org/cpi2013/results>) in Urmia basin countries is slightly lower compared to the Aral Sea

basin countries and this could mean that Urmia Lake countries may be better able to address and mitigate social impacts.

Table 5. Global Corruption Perception Index (2013)

Urmia Lake Basin Countries			The Aral Sea Basin Countries		
Country	Rank	Score	Country	Rank	Score
Armenia	94/177	36	Afghanistan	175/177	8
Azerbaijan	127/177	28	Iran	144/177	25
Iran	144/177	25	Kazakhstan	140/177	26
Iraq	171/177	16	Kyrgyzstan	150/177	24
Syria	168/177	18	Tajikistan	154/177	22
Turkey	53/177	50	Turkmenistan	168/177	17
			Uzbekistan	168/177	17

The above Table is based on the 2013 corruption perception index that included 177 countries and territories ranking them based on how corrupt their public sector is perceived to be. 'A country or territory's score indicates the perceived level of public sector corruption on a scale of 0 - 100, where 0 means that a country is perceived as highly corrupt and 100 means it is perceived as very clean' (2014, transparency international webpage). A country's rank indicates its position relative to the other countries and territories included in the index- (for further information refer to: <http://www.transparency.org/cpi2013/results>). As it is observed, although slightly lower, bad governance and perceived corruption remain high and an issue in Urmia basin countries.

4. EXPLORING THE POSSIBILITY AND TRENDS OF ENVIRONMENTAL MIGRATION

Whether the increasing level of socio-economic vulnerabilities in Urmia basin countries would lead to migration cannot be easily deduced from the above data. Migration patterns are usually complex and take place in rural-urban, urban-rural, urban-urban, and rural-rural patterns (IOM, 2009).

The primary causes for migration are multiple and may include a mix of reasons including wage differences, age, education, distance and costs of displacement, socio-cultural ties, disease, occurrence of environmental changes, prior migration of a family member, etc. (Todaro & Smith, 2012). These are among the push/pull factors that could lead the affected population to either migrate or stay. What is obvious, however, is that there is a positive correlation between environmental change and migration. For instance in the case of the Aral Sea, up to 90% of migration has been outbound from the area since 1989; with almost a quarter of a million of migrants displaced due to the quality of environment (Aman, 1999).

Generally and at the early stages of droughts, desertification, salt and sand storms, households may choose to stay due to different reasons including their age, health state and disability, (emotional) attachment to their lands, or simply due to their financial incapability to relocate or simply due to not having relatives in safer areas who could accommodate them in their early stages of resettlement. In later stages of environmental degradation, some choose to send one family member who can ensure the economic livelihood of the household by sending back remittances.

Further escalation of environmental degradation may eventually force all who can afford to, men and women alike, to migrate (Henry et al., 2004). However, the most vulnerable including women, elderly, sick, orphans, the poorest of the poor and domestic animals may be trapped and exposed to the harshest environmental, health, and socio-economic challenges.

Environmental migration patterns from Urmia basin could be explained in light of the migrant categories proposed by IOM-UNFPA (For further information: 2008: http://publications.iom.int/bookstore/free/IDM_10_EN.pdf). The three categories of migrants include, a) environmentally motivated migrants who 'pre-empt the worst' and leave before the environmental degradation; b) environmentally forced migrants whose attempt is to 'avoid the worst'; and c) environmental refugees who are 'fleeing the worst' and may be displaced temporarily or permanently.

Accordingly, the first group includes economic migrants who have anticipated the worst and have chosen to migrate either temporarily or permanently. As Nodoushan (2012) indicate the Iranian provinces within immediate distance from the Lake are already showing a high level of unemployment and migration (for further information refer to: epc2014.princeton.edu/papers/141050). For instance the two immediately adjacent provinces of East and West Azerbaijan in Iran show a 9.6 and 8.9 percent unemployment and a 4 and 0.9 outward migration pattern, respectively. Of course, environmental degradation of Urmia may not account as the unique cause of unemployment and migration, as Iran- like many other developing countries- suffers from rapid urbanization and urban bias. According to Todaro & Smith (2012: 315) the notion of urban bias entails that 'most governments in developing countries favor the urban sector in their development policies' which will lead to economic gaps between rural and urban spaces, increasing unemployment and migration from rural to urban areas.

The second category of migrants includes those who would leave permanently as their livelihood is reduced and as they try to avoid the worst. Recent drought and unpleasant environmental conditions in Urmia region has led to a substantial decrease in the number of tourists who used to benefit from the national park and medicinal mud bathing in the Lake (Zarrineh & Azari Najaf Abad, 2014). This tangible decrease in the economic services of the Lake has resulted in migration. Many of the households who directly relied on the Lake for their income, for instance fishers, tourist shops and boat rentals have already left their old business and have either shifted to agriculture or farming - in case they owned lands in the surrounding region - or have moved to adjacent cities and other professions. In addition, although the basin is an important agricultural region, farmers are increasingly finding it difficult to find water in wells with 70 meters depth (Ilhan et al. 2012) and are thus inevitably among this second category of environmentally forced migrants. Likewise, households whose health and basic sanitation needs are undermined due to lack of access to water and inhalation of toxics, specifically in rural areas, may migrate to urban areas in bigger numbers.

These environmentally motivated or forced migrants will have negative encroaching impacts on urban infrastructures. As it was observed above, urban areas of Urmia basin countries are already enduring a high population density. Arrival of environmental migrants could lead to expansion or creation of city slums putting further pressure on the urban infrastructure which are not necessarily capable of accommodating the needs and requirements of these migrants. Already suffering from economic and psychological impacts of Urmia degradation, migrants may then be forced to live the vicious circle of poverty, causing further damage to the environment; experiencing higher rates of unemployment, lack of access to safe water, food, health and education (Todaro & Smith, 2012). Urban population and density in the Urmia Lake basin countries is already increasing rapidly which denotes fewer socio-economic opportunities for environmental migrants, and an increase in their social vulnerabilities.

The last category of Urmia Lake migrants are environmental refugees who will flee for their lives rather than their livelihood. These migrants may escape the harshest environmental conditions leaving their residences either temporarily or permanently and will migrate either internally or outside national borders. Although their migration pattern cannot be conclusively determined, evidence from previous gradually degrading resources show that a large share of migration will be initially internal (IOM-UNFPA, 2008). Such internal migration patterns could be repeated in the case of Urmia Lake due to the fact that the two main ethnic minorities of the Lake area, i.e., Turks and Kurds may choose to migrate to nearest safe areas where they have linguistic, cultural and family ties (pull factors). In the second phase of their migration, similar pull factors could encourage the refugees to cross the Iranian borders to join families and friends in neighboring countries. For instance, Armenians living in Urmia area may choose to move to Armenia, Turks may migrate to Azerbaijan and Turkey and Kurds may travel to the Kurdish areas in Iraq or Turkey. However, simple linguistic and cultural affiliations cannot afford to explain migration patterns. Based on Crane's et al. report (2008), Turk minorities in Iran have a tendency to separate themselves from Turks in Turkey and Azerbaijan and prefer to remain Iranian Turks which makes it difficult to project their migration patterns.

The second question raised in this study meant to explore environmental migration trends caused by Urmia desiccation. As discussed environmental migration has already started in the lake's immediate area and it could increase as the Lake's degradation intensifies. Households may choose their destinations based on a myriad of "push" and "pull" factors including socio-economic, cultural and political factors. Migrating to farther distances (out of the 500 radius of the Lake) is also possible as people flee the worst. A map of international migration trends of the Kurds shows that they have previously migrated to neighboring countries in the region and to Europe due to different socio-economic and political reasons (for further information refer to: <http://comeniusonexile.blogspot.fr/2010/06/blog-post.html> (2010)). This pattern could intensify as Urmia Lake gradually dries out. The regions affected by Urmia environmental migrants may be as distant as East and West Europe and Russia. Understanding the pattern of internal and external migration of environmental refugees requires further research and preparation of rehabilitation plans otherwise refugees will be the victims of conflicts, racial and ethnic discrimination and different forms of violations of human rights consequently undermining the security of the whole FBIR region.

5. CONCLUSION

The increasing depletion of the Urmia Lake would lead to increased social vulnerability in both its IBIR and FBIR areas. Main concerns include lack of access to safe water and food, health and education which are obvious violation of human rights (Universal Declaration of Human rights, articles 25 & 26). Additionally the desiccation of Urmia is feared to lead to a drastic rise in poverty and unemployment rates; loss of human, social and cultural capital leading to conflicts and insecurity. Social vulnerabilities of households in Urmia basin countries would of course be mediated by several factors including their level of income, education, health, age and other socio-economic factors. For a majority of households, 'temporary or permanent internal or cross-border migration may be viewed as an effective means of compensating for declining earning capacity, food and water security due to environmental change' (IOM-UNFPA, 2008:46).

Considering the above, the situation calls for an immediate and concerted effort of all countries of the basin as well as the international community. As it was

discussed, Urmia basin countries have high environmental vulnerability, medium/high rate of unemployment, high urban population density, and are prone to health outbreaks. A sustainable management scheme and an adaptive environmental governance of the Lake may reduce or mitigate environmental impacts and social vulnerabilities caused by Lake's desiccation. To this end, Urmia basin countries may choose to plan and implement some/ all of the following strategies:

- Establishing bi/Multilateral cooperation task force committees to stabilize the degrading environment and rehabilitate the Lake's surrounding region;
- Adopting inter-state and regional agreements to address legal responsibilities, cost & benefit sharing (economic services), maintenance, rehabilitation, and water governance and planning;
- Drafting joint rehabilitation and resettlement plans in order to mitigate the impacts of environmental migration, health epidemics and security;
- Building/increasing legal and institutional capacities at national and regional level to increase efficiency and effectiveness of multilateral basin management;
- Developing local legal frameworks to prohibit use of underground water within immediate radius of the Lake;
- Adopting a joint system of monitoring and annual progress reporting in order to increase transparency and accountability among basin countries;
- Establishing environmental agreements to protect the Lake's environment;
- Adopting mechanisms for cooperation with relevant international organizations and taking advantage of foreign aids and expertise.
- Building capacity and training of the local communities on environmental governance and emergency evacuation plans;

As it was discussed in this article, Urmia desiccation has negative impacts on populations living within 500 KM² of the actual geographical location of the Lake, if not farther. Thus, the fact that Urmia Lake is located within the national borders of Iran does not mean that Iran is the only country concerned. This could mean that the Iranian government can play the primary role in addressing the situation by taking the initiative to inform the basin countries on the gravity of the situation and by engineering mutual co-operations and legal agreements. It is evident that at this stage of the Lake's depletion, it is within geo-political and socio-economic interest of all basin countries to address environmental degradation of Urmia, and immediately too. These efforts may eventually reduce the intensity of current and future environmental and social impacts of Lake's desiccation. One remaining concern, however, is compensating for the 'soft' violation of human rights in the surrounding areas of the Lake as during the past three decades many households have lived through the gradual impacts of Urmia depletion. ♦

BIBLIOGRAPHY

- Abbaspour, M.; Javid, A.H.; Mirbagheri, S.A.; Ahmedi, F.; Moghimi, P. 2012. Investigation of Lake drying attributed to climate change. In *International Journal of Environment, Science and Technology*. 2012 (9): 257-266. [online]. <http://link.springer.com/article/10.1007%2Fs13762-012-0031-0#page>. [last accessed: 31 August 2014].
- Alipour, S. 2006. Hydro-geochemistry of seasonal variation of Urmia Salt Lake. *Saline Systems*, 2(9).
- Ataniyazova OA, Baumann RA, Liem UA, et al. 2001. Levels of certain metals, organochlorine pesticides and dioxins in cord blood, maternal blood, human milk and some commonly used nutrients in the surroundings of the Aral Sea (Karakalpakstan, Republic of Uzbekistan) *Acta Paediatrica* 90:801-808.
- Crane, K.; Lal, R., Martini, J.2008. *Iran's political, demographic, and economic vulnerabilities*. US: US Air Force (RAND).
- Cutter, S.L.; Emrich, C.T.; Webb, J.J.; Morath, D. (2009). *Social vulnerability to climate variability hazards: A review of literature*. Final report to OXFAM America. [online]. http://adapt.oxfamamerica.org/resources/Literature_Review.pdf. [Last accessed: 31 August 2014].
- Cutter, S.L.; Boruff, B.J. Shirley, W.L. 2003. Social vulnerability to environmental hazards. In *Social Science quarterly*. 84 (2): 242-260. [online]. <http://www.colorado.edu/hazards/resources/socy4037/Cutter%20%20Social%20vulnerability%20to%20environmental%20hazards.pdf>. [Last accessed: 31 August 2014].
- Eimanifar, A., & Mohebbi, F. 2007. Urmia Lake (Northwest Iran): a brief review. *Saline Systems*,3(5).
- Evans, J.P. 2012. *Environmental governance*. London: Routledge
- Ferriman A. 2000. Charity calls for help for people of Aral Sea area. In *British Medical Journal* 320:734.
- Djafarow, T. 2011. "Water transfer of Araz River to Lake Urmia is discussed between Iran and Azerbaijan" Trend News Agency 26 December 2011. [Online]. <http://en.trend.az/azerbaijan/society/1973742.html>. [Last Accessed 31 August 2014].
- Grigoryev, A.A., 1952: Soviet plans for irrigation and power: A geographical assessment. In: *The Geographical Journal*, Vol. 118, No. 2, pp. 168-179.
- Garousi, V.; Najafi, A.; Samadi, A.; Rasouli, K.; Khanaliloo, B. 2013. *Environmental crisis in Lake Urmia, Iran: A systematic review of causes, negative consequences and possible solutions*. [online]. http://people.ucalgary.ca/~vgarousi/downloads/papers/conf/2013_IPWE/IPWE%202013_Lake%20Urmia_SLR.pdf. [Last accessed: 31 August 2014].
- Golabian, H. 2010. A rescue plan for saving and rehabilitation of Lake Urmia. *Magazine of the Iranian Society of Consulting Engineers*.
- Hassanzadeh, E., Zarghami, M., & Hassanzadeh, Y. 2011. Determining the Main Factors in Declining the Urmia Lake level by using system Dynamics Modelling. *Water Resource Management*, 26(1), 129-145
- Henry, S. 2004. The impact of rainfall on the first out-migration: A multi-level event-history analysis in Burkina Faso", *Population and Environment*, 25(5):423-60.
- Ilhan, A and Ayboga, E. 2012. *Iran's dam policy and the case of the Lake Urmia*. [online]. <http://ekopotamya.net/index.php/2012/07/irans-dam-policy-and-the-case-of-the-lake-urmia>. [last accessed 31 August 2014]
- Ismukhanov, K. & Petr, T. & Pulatkhan, D & Umarov, P.D. 2007. *Irrigation systems and their fisheries in the Aral Sea basin, central Asia*. FAO Corporate Document Repository. [online]. <http://www.fao.org/docrep/007/ad526e/ad526e0i.htm>
- Khosravifard, S. 2010. 'Campaigners Fear Lake Urmia Drying Up'. Payvand Iran News. April 30, 2010. [Online]. <http://www.payvand.com/news/10/apr/1297.html>. [last accessed 31 August 2014]
- Maureen, L. & Griffiths, C. (1994). The interaction of population growth and environmental quality. In *American Economic Review*. 84 (1994): 250-254.
- Micklin, P. 2007. The Aral Sea Disaster. In *Annual Review of Earth and Planetary Sciences*, 35, 47-72.
- Nazaridoust, A. 2011. *Lake Urmia basin management*. Paper presented at the Ramsar Pre-COP22, Asia Regional Meeting, 14-18 Nov 2011
- Pengra, B. 2012. The Drying of Iran's Lake Urmia and its Environmental Consequences. *UNEP Global Environmental Alert Service (GEAS) Bulletin*. [Online]. http://na.unep.net/geas/getUNEPPageWithArticleIDScript.php?article_id=79. [Last accessed: 31 August 2014].
- Small I, Van der Meer J and Upshur REG. 2001. Acting on an environmental health disaster: the case of the Aral Sea. *Environmental Health Perspectives* 109:547-549.
- UNEP.2012. *Global Environmental Alert Service Bulletin Focuses on Lake Urmia, Iran (GEAS)*. [online]. <http://climate.iisds.org/news/unep-global-environmental-alert-service-bulletin-focuses-on-lake-urmia-iran>. [Last accessed 31 August 2014].
- UNHCR. 1999. *Population migration in Uzbekistan (1989-1998)*. Second Edition, Tashkent
- Whish-Wilson, P. 2002. The Aral Sea environmental health crisis. In *Journal of rural and remote environmental health*. 1 (2): 29-34. [online]. <http://www.jcu.edu.au/jrtph/vol/v01whish.pdf>. [Last accessed: 31 August 2014].
- Young, R. O. 2012. *On governmental governance: sustainability, efficiency, and equity*. London: Paradigm Publishers
- Zarghami, M. 2011. Effective watershed management; Case study of Urmia Lake, Iran. In *Lake and reservoir Management*, 27(1).
- Zarrineh, N & Azari Najaf-Abad, M. (2014). Integrated water resources management in Iran: Environmental, socio-economic and political review of drought in Lake Urmia. In *International Journal of Water Resources and Environmental Engineering*. 6(1): 40-48. [online]. http://www.academicjournals.org/article/article1387887557_Zarrineh%20and%20Abad.pdf. [Last accessed: 31 August 2014].

Africa

REIDUN GJERSTAD

Angola's Migration of Thirst: The 2013 Drought

At the end of 2012 and the beginning of 2013 the worst drought¹ in 30 years hit large parts of Angola after years of low rainfall (ACAPS, 2013). The drought had devastating impacts on the population, causing food insecurity, and leaving many people malnourished and without a sustainable livestock (European Commission, 2013). The drought began in 2011 as rainfall dropped below average and gradually moved towards the south of the country, especially affecting the provinces Cunene and Namibe (UNICEF, 2013). From 2011-2012, rainfall was estimated to be 60% below the normal and this decreasing trend continued in 2013 where parts of the country received almost no rainfall at all leaving these provinces in a state of a comprehensive drought (European Commission, 2013). Overall, this disaster attracted little attention from the media although it has resulted in complex migration patterns within Angola and to its neighboring countries, especially Namibia (ACAPS, 2013; BBC, 2013; Tran, 2013).

Environmental disasters are not uncommon in Angola. Due to its geographical location, the country is vulnerable to cyclic natural disasters, especially drought and floods, which weakens the possibilities for sustainable livelihoods (IOM, 2013). It fosters diseases, causes injuries and deaths (NRC, 2008) and the destruction of economic assets lead to food insecurity which is triggering internal migration² (IOM, 2013) or forced migration³ across borders, as people cannot carry out a sustainable lifestyle in the areas affected by the crisis. The International Organization for Migration (IOM) estimates that in 2011 alone, there were 227,000 Internally Displaced Persons⁴ (IDPs) in Angola due to extreme natural events, thus making it the first-ranking African country in terms of displacement of its population produced by natural disasters, and the twelfth country globally (IOM, 2013).

1. A prolonged period of abnormally low rainfall, leading to a shortage of water (Oxford dictionary, 2012).

2. Internal Migration refers to "a movement of people from one area of a country to another for the purpose or with the effect of establishing a new residence. This migration may be temporary or permanent. Internal migrants move but remain within their country of origin (e.g. rural to urban migration) (IOM, 2004).

3. Forced migration is "a general term used to describe a migratory movement in which an element of coercion exists, including threats to life and livelihood, whether arising from natural or man-made causes (e.g. movements of refugees and internally displaced persons as well as people displaced by natural or environmental disasters, chemical or nuclear disasters, famine, or development)" (IOM, 2004).

4. Internally displaced persons (IDPs) are "persons or groups of persons who have been forced IDPs or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized State border" (IOM, 2004).

When looking at the State's rapid economic growth, being one of Africans fastest growing economies with large petrol and mineral reserves, the country could have the resources necessary to promote and ensure a sustainable migration framework dealing with the people displaced by environmental hazards, and enforce the environmental policies in place. However, Angola is a post-conflict state that is still fragile and prone to conflict, with poor infrastructure and high levels of poverty affecting the majority of the population (BBC, 2013; Tran, 2013). According to the latest UNDP Human Development Index, Angola is ranked as the 148th out of 187 countries, placing it within the low human development category (OCHA, 2014). Migration within Angola is therefore often linked not solely to environmental causes, but also to other social, political and economic factors, sometimes a combination of all these features (IDMC, 2013) making it difficult to map the migration patterns within the country and sufficiently address the issue.

This paper aims to investigate the 2013 drought that hit Angola and its impact on the population in terms of migration. Firstly, it addresses how the drought and the following floods have affected the local political, economic and social circumstances. Secondly, it analyzes the current policy responses that have been implemented in order to deal with the cause of environmental migration. Thirdly, recommendations to the existing policy challenges will be suggested as to how the country can improve its framework in regards to environmental policies and migration in terms of stricter environmental policies, inter-sectorial cooperation on environmental issues and improved resettlement⁵ solutions to ensure the safety of vulnerable groups⁶.

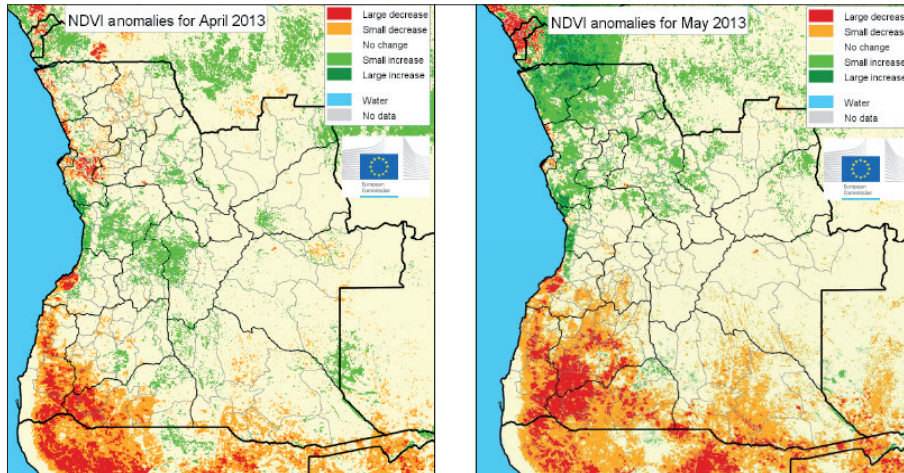
1. ANGOLA AND THE 2013 DROUGHT POLITICAL, ECONOMIC AND SOCIAL IMPACTS

Since 2000, Southern Africa has been affected by approximately 50 emergencies that required international assistance (UNOCHA, 2013), many of which have been linked to the difficult climate of the area. Southern Africa is indeed very prone to environmental crises, especially drought and floods, as numerous of Africa's driest countries are located here, including Angola (IFAD, 2011). The governments in question have often been criticized for doing relatively little in order to prevent these oncoming disasters and the devastating results of natural hazards. According to Enrique Paz, The United Nations Children's Fund (UNICEF) head of child survival and development in Angola, as quoted by the Guardian, the drought that hit Namibia and Angola was a result of three years of poor rainfall (Tran, 2013). It was therefore evident in the years before the extreme drought that a crisis was emerging, causing many people to leave their homes in search for food, water and nourishment for their cattle as well as treatment for malnutrition and other diseases (ASAP, 2013). These slow onset disasters can be tackled by preventative measures before they lead to such severe environmental destruction as witnessed in Angola in 2013. Thus, preventative measures implemented on an early stage are crucial considering that such events will only become more regular in the future as environmental disasters are occurring more frequently than ever before (IOM, 2013).

5. Resettlement is "the relocation and integration of people (refugees, internally displaced persons, etc.) into another geo- graphical area and environment, usually in a third country. The durable settlement of refugees in a country other than the country of refuge. This term generally covers that part of the process which starts with the selection of the refugees for resettlement and which ends with the placement of refugees in a community in the resettlement country" (IOM, 2004).

6. Vulnerable groups are categorized as "any group or sector of society that is at higher risk of being subjected to discriminatory practices, violence, natural or environmental disasters, or economic hardship, than other groups within the State; any group or sector of society (such as women, children or the elderly) that is at higher risk in periods of conflict and crisis (IOM, 2004).

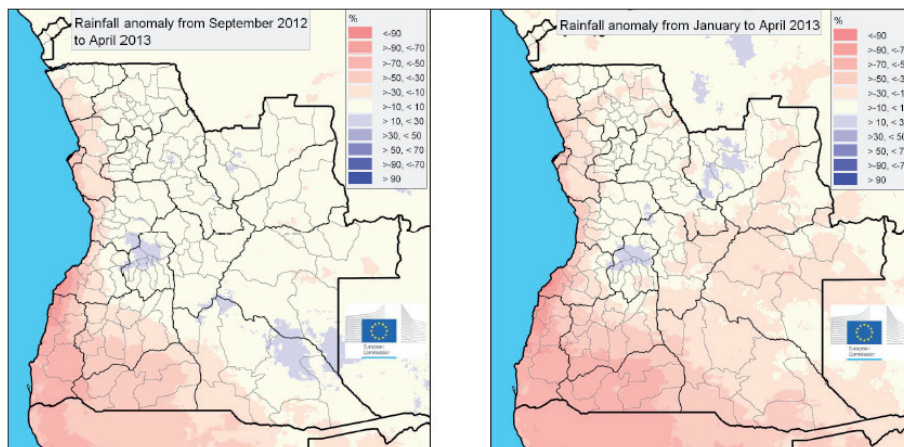
Figure 1. Absolute Normalized Difference Vegetation Index (NDVI) Anomalies for April and May 2013



Source: European Commission (2013)

These Figure ures illustrate the onset of the drought and its development in 2013 based on the Absolute Normalized Difference Vegetation Index (NDVI) which shows the anomaly for the main crop season. There is a drastic increase from April to May 2013 [The European Commission 2013; Tropical Applications of Meteorology using SATellite data and ground-based observations (TAMSAT, 2013)].
Rainfall Anomaly from September 2012 to April and from January to April 2013

Figure 2



Source: European Commission (2013)

The Figure ures above illustrate (left) estimated rainfall from September 2012 to April 2013 and (right) the second half of the rainy season from January 2013 to April 2013. Based on this data obtained from the European Commission (2013) and TAMSAT (2013) the main reason for the total seasonal deficit is due to negative rainfall anomalies in the second half of the rainy season.

As Angola is amongst the most unequal societies in the world, according to Southern African Open Societies (OSISA) 2011 report, environmental crises can be extremely disastrous. Currently, approximately 40% of the population is living below the poverty line and the child mortality rate is extremely high - close to 1 out of 5 children are estimated to die before the age of 5. Thus, the majority of the population is ill equipped to deal with environmental disasters, and migration becomes for many a difficult and dangerous process (OSISA, 2011). Unsurprisingly, the drought has had its effects politically, economically and socially within the country, especially on the southern regions that were hit the hardest (see Figures 1 and 2).

1.1. Political Impacts

In a post conflict country like Angola, natural hazards such as droughts can be dangerous as they can have unpredictable effects on the political climate. Droughts can increase poverty as it robs the population of their livelihood, and thus results in political instability fuelling problems between the population and the government. In Angola, the government carries strict not to say "authoritarian" politics (Human Rights Watch, 2013; Tran, 2013) that at times can negatively affect human rights. It has been heavily criticized for its slow response to the environmental crisis in comparison to its neighbor Namibia, a country that was hit hard by the disaster (Tran, 2013; UN Radio, 2013) and the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) still categorized the situation as severe (June 2014) as large parts of the population still suffer from food insecurity.

The different approaches adopted by Namibia and Angola in reaction to the drought and flood management left many puzzled as both countries suffered immensely. Nevertheless, despite the two different policies regarding the crisis, the situation fuelled little political unrest in the Angola. This is rather surprising since the international humanitarian aid distributing was vastly unfair for the Angolan population in the affected areas, in comparison with the Namibian (UNICEF, 2013), a factor that can easily contribute to political unrest and upheaval. There are two main factors that might have contributed to this overall lack of political reaction to the drought, which will be discussed in the section below.

By 2013 the drought situation was severe in both Namibia and Angola. Approximately 780,000 people one third of the country's population- were food insecure in Namibia in the first months of 2013 (UNOCHA, 2013). On May, 17th the Namibian government declared a state of emergency, pledging for \$20 million in relief aid in order to assist the worst affected population as the country was unable to meet their peoples basic needs (Think African Press, 2014). United Nations Organizations such as the United Nations Children's Fund (UNICEF) and United Nations High Commission for Refugees (UNHCR) became heavily involved in the crisis raising 7.4 million dollars in order to treat the 109,000 children under five at risk of malnutrition (UNICEF 2013; UNHCR, 2013; UN Radio, 2013). The Namibian Red Cross Societies and other humanitarian agencies also aided the government in handling the crisis as people were finding it increasingly difficult to survive (UNOCHA, 2013).

In Angola the drought hit the country's southern part with equally devastating impacts. Food insecurity affected approximately 1.8 million people in five provinces (UNOCHA, 2013). In June 2013, Caritas estimated that 250, 000 people in the Namibe province were in urgent need of support as close to 70 per cent of the annual crops had failed (UNOCHA, 2013). UNICEF (2013) requested for \$14.3 million for the worst-affected provinces of Cunene, Namibe and Kuando Kubango as well as in the southern parts of Benguela and Huila (UNICEF, 2013; UNOCHA, 2013).

Nevertheless, the government remained quiet about the devastating effects of the drought, not appealing to the international community for help, a policy that differed severely from that of Namibia. The call for relief aid in Namibia might have dampened any political unrest resulting from the drought given the government

active participation in crisis management. In Angola however, only a special inter-ministerial commission was created to handle the disaster by distributing emergency food aid and creating new boreholes⁷ (Tran, 2013), aid that according to relief organizations was insufficient and which led many people to leave their home, thus becoming IDPs within Angola itself, or crossing national borders into neighboring Namibia where relief aid was more frequently distributed (UNICEF, 2013; UN Radio, 2013).

Regardless of this lack of response to the crisis, there was little political pressure on the Angolan government, both from international and internal actors, allowing the crisis to continue in silence. This might be related to the country's poverty statistics which reveals that large parts of the country live in severe poverty (The World Bank, 2012). According to IFAD's 2014 report on poverty in Angola "It is estimated that 68 per cent of the population is living below the poverty line and 15 per cent of households are living in extreme poverty. Poverty is more widespread in rural areas where 94 per cent of households are categorized as poor" (IFAD, 2014; 3). Thus, this fraction of the population is inadequately equipped to challenge the political authorities in order to claim their basic human rights. However, the question remains, why did Namibia who carried similar poverty statistics to Angola (The World Bank, 2014) chose such a different strategy in order to deal with the consequences of the drought. The Namibian population living in the areas affected by the population is also ill equipped to challenge the government and foster political change. However, the country's government chose to make it an internationally acknowledged crisis, while Angolans were suffering in silence.

The answer may thus lie in the different financial interests threatened by the crisis. As Angola is a booming economy, the country do not want to have a negative 'external' image and thus might have chosen to silence the crisis to protect its international image. Moreover, many foreign companies and countries that have their own agenda in Angola, especially related to the oil sector (Tran, 2013; OSISA, 2013). As the protection of human rights and financial profit does not always go hand in hand, and with little international attention being given to the disaster, a financial and right based clash might have been avoided by silencing the crisis on an international level. Publicly challenging the government in its poor response to the drought might have resulted in an unwanted backlash hindering profitable resource deals for external actors. It is therefore possible that the silencing of the 2013 drought was a result not only of the governmental policies, but equally constructed by foreign countries and investors with their own agenda in Angola, agendas that differs vastly from that of Namibia.

1.2. Economic impacts

Angola is a country that possesses vast oil wealth and natural minerals; at the same time, it is one of the poorest countries in the world, still recovering from the social, political and economic hardships it faced during the 27-year civil war that ended a little over a decade ago (NRC, 2008). The economy is nevertheless growing as oil exports and foreign loans have aided a rapid reconstruction and improvement of infrastructure, but as most economies worldwide, Angola was affected by the financial crisis, something that can be mirrored in the response to the 2013 drought that hit the country.

At the national level two trends can be observed. Firstly, the financial crisis affected drought prevention, which allowed the onset of this slow disaster as the country had less resources to deal with the oncoming disaster; secondly the

7. A borehole is a "a deep, narrow hole made in the ground, especially to locate water or oil" (*Oxford dictionary*, 2012).

drought itself has influenced and in turn affected the country's economy. Mundial (2013) points out that "from 2009 to mid-2011 GDP growth stagnated due to a decline in global oil prices and a slowdown in domestic oil production. The resulting drop in oil revenues, the primary source of government revenue, impacted the non-oil economy through diminished private consumption, cuts to public spending and the accumulation of substantial arrears to domestic firms" (Mundial, 2013; 6). This drop affected the agricultural and construction sectors profoundly.

The lack of jobs due to cuts in public spending is likely to have left the rural population in a position where it would have to rely on the already overused land for survival, leading to soil over-productivity as well as biodiversity loss. Moreover, as these budget cuts caused a regular downsizing of experts and workers within the environmental sector, a sector that was already poorly funded as this is far from a priority issue within the country that focuses mostly on rapid economic growth based on its oil and mineral industry. This prioritizing is usually done at the expense of both social and economic policies that will benefit the population in the long term such as greater investment in the agriculture sector (Mundial, 2013).

There was a 5.5 % real GDP growth in 2013, which is lower than the 2012 (US Department of State, 2013) the drought itself has arguably influenced the country's economic growth, although other important factors also influenced this financial drop, and it is thus uncertain to what extent the drought has had an impact. Nevertheless, this decline in economic development will make it harder for the country to finance relief aid to the people affected by the drought and the floods, and to those who have to migrate as a result of the disaster.

Yet, the financial crisis alone cannot justify the lack of assistance provided to the population affected by drought. In fact, there was no serious financial problems in the year before the drought hit due to the country's fruitful oil industry, thus more investment could have been put towards drought management to prevent it from taking place. It was clear already in 2009 that the south of the country was in great danger of being affected by drought and floods as it has happened repeatedly before, leaving the most fragile provinces devastated multiple times (Mundial, 2013).

In fact, International Organizations and NGOs have blamed the government for downplaying the crisis as it threatens the country's image as a booming economy (Tran, 2013; UNICEF, 2013) and thus possibly its attraction for foreign investment. The large amount of oil funds could be used to ensure domestic growth and that the people of Angola human rights are protected which is unfortunately not currently the case according to many International Organizations and NGO's in the field (Tran, 2013; UNOCHA, 2013). Much of the country's wealth is disappearing due to corruption, leaving the country with a large gap between a small rich elite and the poor majority (OSISA, 2011).

On an individual level the drought has had devastating economic impacts. Although agriculture only accounts for approximately 8% of Angola's GDP, it is the primary source of employment (European Commission, 2013). Crop production, which is the main source of production in Angola, relies on a sustainable rainy season from September to late April and May. Thus, if rainfall is far below average, crops are at stake, implying potentially fatal consequences, especially for the south. "The south is home to about 95 % of the country's livestock, with about one-third of the country's cattle being found in Cunene Province alone" (European Commission, 2013) - a province that has been severely affected by both drought and floods during the last year. Hence, with the lack of an effective agricultural policies and a government that successfully manages the economic hardships facing people during environmental crises such as droughts and floods, many are left with no means to stay.

1.3. Social and Health Impacts

The population has suffered immensely due to the severe drought, and the disaster has had many social consequences. As quoted by UNICEF (2013), their Regional Director for UNICEF Eastern and Southern Africa Steven Allen stated that “reports from the field already indicate that children are dropping out of school and are being separated from their parents, a clear sign of the stress and vulnerability families face as they try to cope with the drought” (UNICEF, 2013). UNICEF (2013) has published several reports discussing the fact that children are currently digging wells, that unclean water is being used for drinking and cooking purposes, and that child protection in the state is fragile as child migration within and between borders is increasingly being observed.

Food security is also a large problem in the country. According to The Assessment Capacities Project (ACAPS) Global Emergency Overview, 700,000 are at risk of food insecurity in Angola. The same report highlights that people are migrating in search of water, food and pasture for their cattle. Because livestock and crops have perished during the drought and the floods that followed, families are selling many of their assets and skipping meals. School attendance has dropped in the regions affected by the disaster (UNICEF, 2013) as families can no longer afford to support their children’s education. Cunene is the most impacted province when looking at both the economical and the social results of the drought, as rainfall was the lowest on record in March since 1989 (European Commission, 2013). According to the provincial governor Antonio Didalelwa, almost the entire population of the province are at risk of malnutrition as farming is threatened and the cattle do not have access to food and water (Reuters, 2013).

In terms of the social issues that arose due to the drought, the health impacts are the most severe. The first and most evident result of the drought, and the floods that followed, was that of cholera outbreak in the province. In December 2013, Integrated Regional Information Networks (IRIN) reported that 1,000 people were infected and 48 confirmed dead over a two-week period due to a cholera outbreak in the drought affected the area (IRIN, 2013) The cholera pandemic continued to spread within the province as the drought left many without proper living conditions, food insecure and without access to a safe water source (ACAPS, 2013).

Cholera is a highly contagious disease that usually affects people in areas where there is poor sanitation and unsafe drinking water, and the outbreak can therefore be directly linked to the drought. By the end of 2013 acute malnutrition with rates as high as 25 % had become a reality for the people living in drought affected areas, leaving people, especially children, highly vulnerable to waterborne illnesses such as cholera. As quoted in IRIN (2013), Manuel Eduardo who is working as a consultant for UNICEF in Cunene states that “what’s needed is a strong program in terms of people being able to treat water at home, and construction of more boreholes. There are boreholes, but some have dried up and others haven’t been maintained.” (IRIN, 2013). Due to the lack of safe water sources, cholera outbreaks were reported even prior to the rainy season in October 2013. As the raining season hit and floods became more frequent, the few existing clean water sources were quickly contaminated and there was a slow onset response to the cholera crisis, treating the first cases as diarrhea (UNICEF, 2013).

2. ENVIRONMENTAL MIGRATION AND THE CURRENT FRAMEWORK

There is evidence that environmental migration was taking place due to the 2013 drought in Angola and the floods that followed as people did not have the sufficient means to stay, and thus started to migrate as a survival strategy. The analysis below will illustrate how this migration was handled within the current environmental and migration framework in Angola.

There are indications that people were arriving in the governmental camps close to the affected areas in the south of the country (ACAPS, 2013). The government was dealing with the issue by creating displacement camps in the provinces that are hit the hardest (IOM, 2013). In Cunene for instance, the government has established an emergency plan to provide assistance to roughly 640,000 people were affected by the droughts (ACAPS, 2013).

The drought and floods also led to international migration between Namibia and Angola (UNICEF, 2013). According to UNICEF (2013), between June and July 2013 people were crossing the border from Angola to Namibia through the Kunene River in order to receive treatment for cholera, as it was not provided in Angola. There are similar accounts for treatment of malnutrition. Between March and July 2013, the Engela District of the Ohangwena Region faced a 76% increase in hospital admission regarding malnutrition for children under 5 years of age (UNICEF, 2013). We note also that amongst malnourished patients under 5 years of age, 53% of admissions and 11% of in-patient deaths were from Angola. The families of the patients claimed to seek treatment on this side of the border (UNICEF, 2013).

In Angola environmental migration is particularly worrisome due to the environmental devastation left by the civil war, destruction that is still evident within the country. When the country reached its independence in 1975, after a period of almost 15 years of liberation war, the state was yet again damaged by internal conflict from 1975 until 2002, a conflict that took its toll on the already fragile environment of the country. Thus, although the country today shows great economic progress, its war ravaged history has damaged the environment greatly, leaving the population with less means to deal with environmental hazards. The land is indeed often left in unusable condition, polluted with landmines or destroyed due to the war and the massive dislocation of people. Thus, Angola is facing many additional challenges related to development and disaster risk management, adding to the complexity of the situation (IOM, 2013).

There government does recognize the fact that environmental factors pose a threat to the country's future and that they need to aid population that has been displaced due to environmental factors. Displacement camps have been constructed for short-term relief and the government has signaled that they are prepared to invest in long term measures to battle the constant threat of environmental issues by working with UN-backed institutions on matters of risk reduction and disaster management (IOM, 2013). In 2009, the Government of the Republic of Angola enacted a national four-year civil protection strategy. This strategy was the first scheme to deal with natural disasters and centered its main focus towards emergency response capacity (IOM, 2013). According to IRIN (2014) "the government has initiated an emergency program, totaling \$43 million, to provide food and water as well as agricultural inputs to affected families". However, it is still unclear if the funds for the program were released, and how much was invested in the projects dealing with the drought (ibid.).

The IOM (2013) highlighted that the results of the drought management are still limited largely due to a lack of disaster statistics and trained human resources to properly deal with environmental issues. And there is little doubt that handling and controlling droughts, as well as the migration related to droughts, is a challenging task since people rarely move as a mass, but rather as individuals and families after the peak of the drought (Gemenne, 2013). Therefore, precise data is difficult to obtain on the issue.

However, as environmental issues are common in Angola prevention must be done and judging by the 2013 crisis it is evident that not enough has been invested in the risk reduction section leaving the affected areas in an extremely difficulties situation dealing with both drought and the floods. The same accounts for the country's capital, Luanda, where poor infrastructure, informal settlements and local slums are

very vulnerable to flooding as there is a lack of drainage systems and other essential infrastructure that evacuates water appropriately and reduces the spread of water-borne diseases (IOM, 2013). This is an increasing problem because insecurity in rural areas as a result of the many environmental hazards has led to an escalating urbanization. Rapid urban growth is dangerous for commercial agriculture as it reduces the number of people available to work in this sector, leaving the country with very high population density in the cities (World Bank, 2013).

More public spending in the agricultural sector is essential in Angola where over two-thirds of the labor force is employed in agriculture, where less than 30 % of the country's arable land is currently under cultivation and where natural hazard put great pressure on the industry. The agricultural industry was brought to a near standstill during the war, but has great potential today, and is indeed a necessity for the population. This means that the environmental and agricultural policies of the country are crucial to its future and must therefore be prioritized (Walmsley and Tshipala 2007).

If used correctly, this availability of land has great potential as it can improve agricultural outputs in many rural areas. And although the government has, according to Mundial (2013), implemented many successful agricultural policies that have led to overall increase in the country's food production, it is important that the agricultural sector is attended to with more precise measures in order to perceive the resources available and avoid loss of arable land. According to the European Commission (2013), five provinces in Southern Angola that were severely affected by the rainfall deficit starting in late 2012 and continued in 2013, presented a great danger for the agricultural sector and natural vegetation, resources that are very valuable to the country's economy and crucial to the populations livelihood. A lack of a precise disaster risk and reduction policy framework can therefore have overall economic consequences for the country's economy as well as on the country's population.

With oil alone accounting for over 95% of Angola's export revenue, it comes as no surprise that this sector is heavily prioritized within the country. Nevertheless, it is important that strong investment is put towards the development of the non-oil areas to obtain a more stable economy. In order for Angola to properly handle and prevent the occurring environmental migration, it is crucial that the country avoid the so called Dutch Disease.⁸

As long as the oil industry has such a strong influence on the public budget, the environmental problems of the country is likely to be down-prioritized and overturned by more economically beneficial policies for the benefit of the industry, and not for long terms policies that benefit society as a whole, but do not give an immediate economic return.

It thus becomes evident that one of the most important policy questions currently facing Angola is how to convert its oil wealth into sustainable economic, social and environmental development policies that aid the population and promote the agricultural sector, which is where the majority of the population will benefit. The following section will propose recommendations regarding how the country's wealth can also benefit those outside of the oil sector.

8. The Dutch Disease refers to a decline of certain sectors, such as manufacturing and agriculture, while there is an increased in the economic sector related to natural resources, which thus leads to mismanagement (OSISA, 2011).

3. POLICY CHALLENGES

This paper's analysis shows that environmental considerations are not yet a vital part of Angola's socio-economic framework, and there is a lack of policy programs to deal with environmental degradation, including the issue of environmental migration and emergency response. Article 39 of the Constitution states that "Everyone has the right to live in a healthy and non-polluted environment" and that "the State shall adopt the necessary measures to protect the environment and the rational exploitation of natural resources within a sustainable development framework", thus ensuring environmental protection for the population of Angola (Constitution of the republic of Angola, 2010). This is not currently the case as large parts of the population have migrated in order to seek land that allows them to live sustainably although the country has a Ministry of Environment, which is the body responsible for the environmental protection and implementation of environmental laws in Angola, based on the 1998 General Environmental Law (OSISA, 2011).

This framework and Angola's current environmental policies exist but they are fragile, as they do not sufficiently deal with the main environmental issues in an adequate manner. Misuse of land as well as oil spills and other pollution of the waters go unreported. There is currently an overuse of pastures and soil erosion is common, which attribute to population pressure. Deforestation and desertification are major issues leading to a great loss of biodiversity and soil erosion is currently polluting the water sources. Rivers and dams are becoming heavily polluted and as there are a lack of supplied for clean portable water, the population no means to stay and continue a sustainable living (CIA, 2014).

The question remains therefore on the means available and to be implemented to tackle those challenges. Information gathering is a first step. There is a need for a well-functioning information framework regarding the state of the environment within the country will help inform better and updated environmental policies. Once an overview of the migration has been collected a second step would be to prioritize and integrate environmental strategies, and policies dealing with environmental migration, in the economic and social policies of the country. This data collection should be carried out as soon as possible in order to gain a better understanding of the situation and the migration framework that has occurred before, during and after the 2013 crisis. The current institutional capacity for environmental management is still insufficient in training of human resources and in the on-going data gathering to properly handle the environmental hazards, and coordination amongst actors remain difficult, as the issue is not yet a national priority. A education campaign centered towards the population, especially the rural societies, on environmental issues should be integrated as it will promote environmental management of the natural resources that will allow the population to deal with drought in a more sustainable manner. Finally the development of a framework of preventative measures that can hinder the most devastating effects of hot spells and cyclical drought could help damper the most sever affects of the drought (Russo, Roque and Krugmann, 2002; OSISA, 2011).

Thirdly, it is important that national actors as well as international aid organizations have access to the country's vulnerable population and is allowed to aid people in drought-affected areas. A greater presence of both local NGOs and International Organizations, coordinated with the national actors dealing with environmental issues and disaster risk management, could support rural livelihoods and prevent potential environmental migration taking place as people would have greater access to medical care, clean water and food. Because the government has limited means to prevent environmental hazard it does not attend to the population affected by the drought and flood areas on a large scale. This, along with the lack of national and foreign humanitarian aid in the country, means that a sustainable policy has not

yet been achieved (Tran, 2013; UNICEF, 2013). National and local NGO's, and external actors such as International Organizations can thus possibly help to kick-start the process of a better and more sustainable environmental framework that hinders environmental migration as this is a very difficult issue, especially in Angola due to its location and history. Consequently, a greater presence of humanitarian aid could help prevent and manage environmental migration until the national environmental policies and framework is completed and data collected.

It is however important to note that for development of long term projects, the general rule is that local actors, whether local authorities or local associations or other civil society actors, should be the ones that are reinforced, rather than bringing in foreign actors. Thus, it is recommended that the strategies implemented are to rely on foreign expertise to train local actors and reinforce governmental agencies. This could be a mean to make this sector more prioritized in Angola

Fourthly, rural livelihoods should be made resilient against climate changes, something that can be achieved through a variety of measures. Seed conservation banks and reimbursement schemes should be implemented based on the IOM model proposed in their report on Angola in 2013, allowing for the development of new crops (IOM, 2013). It is crucial that water resource management is properly funded and developed allowing the population to carry portable water for their crops and their animals, as well as to hinder the spread of disease.

On a local level, aiding micro-businesses in the areas affected by drought could develop the local economy by selling basic necessities for household activities. This could reduce reliance on wood, which leads to deforestation and thus fosters drought. From a health perspective, community volunteers should be trained to handle sickness and emergencies. An example suggested by IOM (2013) is to develop community-based management of acute malnutrition, something that would aid the population in the affected areas. Many have been observed crossing the border to Namibia in order to get proper medical care for their children (UNICEF, 2013).

All these steps are reachable with political will and economic investment to promote the environment and agricultural policies that will help the most vulnerable population and thus moving away from the completely oil dominated economy. However, a current lack of transparency, economic mismanagement and corruption makes it difficult to achieve a workable environmental policy (Mundial, 2013; IOM, 2013). The main obstacle is thus a focus on the country's natural resources and the wealth it brings for a variety of reasons.

Foreign investment in the country is not always coordinated in accordance with sectors such as the construction and agricultural sector, causing density forestation on land that could be used in a more sustainable matter when looking at the development of a non-oil economy (Mundial, 2013). This occurs in response to the international demand for timber and other resources (ACAPS, 2013). The many economic policies currently in place, aimed at attracting foreign investors, result in significant biodiversity loss, harming the population by destroying their livelihoods as they rely on this land for their cattle and grains. The government must therefore enforce strict environmental regulations on national as well as foreign companies in the country, regardless of their economic interests, in order to prevent the loss of valuable productive land. These policies are not being enforced, although they do exist on paper (OSISA, 2011).

The country's oil production, and the wealth that comes with it, poses a great threat on the environment because of the economic and political power Sonangol, the state-owned oil company, holds in Angola as well as the multinational companies that invest in the country without much concern for the environment. Multinationals that want to do business are obliged by law to associate with Sonangol in the form of a joint venture or agreements about production sharing (OSISA, 2011). They state that "to win contracts, multinationals must pay signature bonuses that

can run into billions of dollars – and are not publicly disclosed (...) evidence points to Angolan public officials' beneficial ownership of, and shareholdings in, Angolan companies that have been awarded oil contracts – in violation of Angolan and international law" (OSISA, 2011;1). The system of checks and balances within the country is thus weak, especially concerning the state owned oil company that is only accountable to the president, allowing the elite and high ranking public officials to gain large profit of the political and legal obligations of multinationals in order for them to contract with Angola's oil company.

All in all, Angola does have the power and economic wealth to prevent some environmental degradation and the migration that follows by enforcing disaster management and prevention policies. However, currently it seems as though there is a lack of political will to deal with the issue due to the petrol industry that is being prioritized since it is benefiting the country's elite and foreign investors. This is down-prioritizing the environmental policies that do not lead to rapid economic growth, but rather a security net for the population creating stabilization and resilience. Overall, there is a lack of a long-term vision to deal with environmental hazard and the migration that follows. Since the oil sector and its auxiliary industries do, in most cases, offer a very high return to in terms of financial and human capital, this sector will continue to dominate the policies in place, leaving little room for the other industries to influence the policy framework. These are currently the main obstacles to sustainably dealing with the aftermath of the 2013 drought, which is currently affecting the country.

4. CONCLUSION

This paper evaluates the impact of and the policies in place to deal with the 2013 drought, which hit Angola due to years of low rainfall. The drought has had devastating impacts on the economic and social situation for the population, leaving many food insecure, malnourished and without a sustainable livestock, thus forced to migrate in order to sustain a living.

Angola has adopted a range of different policies in order to deal with the environmental issues and the migration issues that arose due to drought and other environmental hazards. However, these policies are often inadequate and difficult to analyze due to a lack of data. The environmental migration policies are not sufficiently coordinated with the economic and social policies of the country as most of them concern displacement camps for IDPs and are focused on short-term rather than long-term preventative measures. There is poor inter-sector coordination between the environment sector and others sectors related to oil, industry, mining and agriculture, leading to miscommunication. As the environmental ministry is rather weak and down prioritized, they have to work in an environment that is extremely difficult.

Unless the underlying factors that make the country so prone to drought are addressed, environmental migration in Angola will continue to be an issue. The population is currently ill equipped to handle these environmental hazards and often end up as IDPs in poorly constructed and unsuitable governmental camps. Preventing forced migration can be achieved by building the capacity of national actors involved by distributing micro-loans to develop private businesses and foster employment, involving other actors such as national NGOs, International Organizations and local actors as well as promoting more agricultural policies aiding the rural population in their farming industry, improving disaster management and prevention systems. It is crucial that programs are created that give the population tools to build resilience against drought and the floods that often follow.

However, the government and the multinational companies in Angola do relatively little to enforce the existing laws, which would protect the public and the

environment, since the priorities lies with the economic growth of the country that mostly benefits the elite, over an inclusive and sustainable development of Angola as a whole. Thus, environmental standards are deficient and there is little attention paid to pollution control, which allows multinational organizations to report their own activities, without a real enforcement mechanism by the body in charge. Thus it seems as if the main obstacle in regards to environmental migration in Angola is the country's reliance on oil and the presence of fairly unregulated multinational companies that hold great political and economic power in relation to other industries such as agriculture, which is the industry most crucial to the country's population and vital in hindering environmental migration. ♦

BIBLIOGRAPHY**ARTICLES AND REPORTS:**

- African Development Bank Group .2009. "Environmental sector support project Angola". http://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/Angola_-_Environmental_Sector_Support_Project__ESSP_-_Appraisal_Report.pdf (consulted on 24 April 2014).
- The Assessment Capacities Project .2013. "Global emergency overview". http://andystaging.rwdev.org/sites/reliefweb.int/files/resources/geo_27.pdf (consulted on 06 March, 2014).
- European Commission .2013. "Seasonal monitoring in Angola, ad hoc report." *JRC Scientific and Policy Reports*.
- Emergency Response Fund .2012. "Resident/humanitarian coordinator report 2012 on the use of CERF funds Angola". <https://docs.unocha.org/sites/dms/CERF/Angola%20RC-HC%20Report%202012%20FINAL.pdf> (consulted on 08 March 2014).
- The Central Intelligence Agency .2014. "World fact book, Angola" https://www.cia.gov/library/publications/the-world-factbook/geos/print/country/countrypdf_ao.pdf (consulted on 24 July 2014).
- The Constitution of the Republic of Angola .2010. *Republica de Angola - Assembleia Nacional - Comissão Constitucional* LUANDA, 21 January 2010.
- GEMENNE, F. 2013. "Migration doesn't have to be a failure to adapt: an escape from environmental determinism." In Palutikof J., Boulter S.L., Ash A.J., Stafford Smith M., Parry M., Waschka M. and Guitart D. (Eds.) *Climate Adaptation Futures*. Brisbane: Wiley and Sons. 235-241.
- GEMENNE, F. 2012. "Environmental Migration." In Martiniello M. and Rath J. (Eds) *An Introduction to International Migration Studies. European Perspectives*. Amsterdam: Amsterdam University Press. 237-258.
- Human Rights Watch. 2013. "World Report 2013, Angola." <http://www.hrw.org/world-report/2013/country-chapters/angola> (consulted on 20 august, 2014).
- Human Sciences Research Council. & EEASA. .2002. "Environmental education, ethics and action in southern Africa". *Pretoria, South Africa: Human Sciences Research Council*.
- International Fund for Agricultural Development .2011. "Addressing climate change in East and Southern Africa". <http://www.ifad.org/operations/projects/regions/pf/pub/climate.pdf> (consulted on 20 March 2014).
- International Fund for Agricultural Development .2014. "Investing in rural people in Angola". <http://www.ifad.org/operations/projects/regions/pf/factsheets/angola.pdf> (consulted on 31.08.2014).
- International Organization for Migration .2013. "Glossary for migration". http://publications.iom.int/bookstore/free/IML_1_EN.pdf (consulted on 24 April 2014).
- International Organization for Migration .2013. "Compendium of IOM's activities in disaster risk reduction and resilience", *Part III Africa > Angola*. IOM
- Larsen, C. .2008. *Evaluation report*. "Evaluation of Norwegian refugee council distribution and food security programs - southern Angola 1997-2007". *The Norwegian Refugee Council*
- Martens, E., Roque, P., Russo, V., 2001. "SADC Regional Environmental Education Programme., & Wildlife and Environment Society of SA". In Environmental organisations in the SADC region: A directory of the environmental institutions and organisations in the SADC region. *Howick, South Africa: SADC Regional Environmental Education Centre, Umgeni Valley Project*.
- Mundial. 2013. "Angola economic update. Angola's economic recovery and challenges ahead". *Issue 1, The World Bank*.
- Open Society Initiative in Southern Africa .2011. *Angola's oil Industry operations*. OSISA
- Russo, V., Roque, P., & Krugmann, H. 2002. "Angola". In Human Sciences Research Council. & EEASA. (2002). "Environmental education, ethics and action in southern Africa". *Pretoria, South Africa: Human Sciences Research Council*.
- Tropical Applications of Meteorology using SATellite data and ground-based observations .2014. <http://www.met.reading.ac.uk/tamsat/about/> (consulted 23 July 2014).
- The United Nations Children's Fund .2013. "UNICEF annual report 2013 - Angola". *UNICEF*
- The United Nations Children's Fund .2013. "Namibia - Drought situation report 4". *UNICEF*
- The United Nations Children's Fund .2012. "Towards the Protection and Holistic Development of children in Angola. 2012 Annual Report". *UNICEF*
- The United Nations High Commissioner for Refugees .2011. "Angola - working environment." *UNHCR Global Appeal 2010-11*. <http://www.unhcr.org/4b05112a9.html> (consulted 01 March 2014).
- The United Nations High Commissioner for Refugees .2014. 2014 "UNHCR regional operations profile: Southern Africa". <http://www.unhcr.org/cgi-bin/texis/vtx/page?page=4a03e30d6> (consulted 10 March 2014).
- The United States Department of State .2013. "US relations with Angola". <http://www.state.gov/r/pa/ei/bgn/6619.htm> (consulted on 10 March 2013).
- The World Bank .2014. *Angola*. www.worldbank.org/angola (consulted on 08 March 2014).
- Walmsley, B and Tshipala, K.E. 2007. "Angola" in Handbook on Environmental Assessment Legislation in the SADC Region. *Development Bank of Southern Africa in collaboration with the Southern African Institute for Environmental Assessment. Midrand, (p.29.48)*

PRESS ARTICLES:

- All Africa .2013. *Angola: drought contributes to cholera outbreak in southern Angola*. <http://allafrica.com/stories/201312061464.html> (consulted on 19 March 2014)

- BBC .2013. *Angola country profile*. <http://www.bbc.com/news/world-africa-13036732> (consulted on 16 March 2014).
 - Farrell, D. 2014. *Drought in Namibia. Snapshot of the future?*
 - <http://thinkafricapress.com/namibia/climate-change-aquifer-drought-angola> (consulted on 14 March).
 - Inter Press Service .2013. *Angola - slow on drought response as people die of hunger*. <http://www.ipsnews.net/2013/06/angola-slow-on-drought-response-as-people-die-of-hunger/> (consulted on 19 March 2014).
 - Integrated Regional Information Networks .2014. *Drought respond lags behind needs in southern Angola*. <http://www.irinnews.org/report/98562/drought-response-lags-behind-need-in-southern-angola> (consulted on 06 March 2014).
 - Integrated Regional Information Networks .2013. *Malawi-Angola: Food crises and response* <http://www.irinnews.org/report/97064/malawi-angola-food-crises-and-response> (consulted on 24 April 2014).
 - Open Societies Initiative in Southern Africa .2011. *OSISA in Angola*. <http://www.osisa.org/angola/osisa-angola> (consulted 04 March 2014).
 - Peel, L .2013. *World food day 2013: We must stop Angola and Namibia becoming the next Sahel*. <http://blogs.independent.co.uk/2013/10/16/world-food-day-2013-we-must-stop-angola-and-namibia-becoming-the-next-sahel/> (consulted on 08 March 2013).
 - Redvers, L .2013. *Angola slow on drought response as people die of hunger* <http://www.ipsnews.net/2013/06/angola-slow-on-drought-response-as-people-die-of-hunger/>
 - Reliefweb .2012. *Angola: Drought 2012*. <http://reliefweb.int/disaster/dr-2012-000092-ago> (consulted on 20 March 2014).
- (NO AUTHOR IN THIS ARTICLE)**
- Reuters (2013). *Angola sending aid to 300.000 at risk from drought*. <http://www.reuters.com/article/2013/05/09/angola-drought-idUSL6N0DQ3S920130509> (consulted on 06 March 2014).
 - Think African Press .2014. *Drought in Namibia: Snapshot of the Future?* <http://thinkafricapress.com/namibia/climate-change-aquifer-drought-angola> (consulted on 08 March 2014).
 - Tran, M .2013. *Angola 'in denial' over impact of severe drought*. <http://www.theguardian.com/global-development/2013/oct/22/angola-in-denial-severe-drought> (consulted on 01 March 2013).
 - The United Nations Children's Fund .2013. *Severe drought puts millions at risk in Angola and Namibia*. <http://www.unicef.ie/NewsMedia/Severe-drought-puts-millions-of-lives-at-risk-in-Angola-and-Namibia-72-426.aspx> (consulted on 20 March 2014).
 - The United Nations Office for the Coordination for Humanitarian Affairs, .2014. *Namibia, hundreds of thousands affected by drought*. <http://www.unocha.org/top-stories/all-stories/namibia-hundreds-thousands-affected-drought> (consulted on 13 March 2013).
 - The United Nations Office for the Coordination for Humanitarian Affairs .2014. *Angola*.
 - <http://www.unocha.org/rosa/about-us/about-ocha-rosa/angola> (consulted on 25 July 2014).
 - The United Nations Radio .2013. *Thousands affected by drought in Namibia and Angola*. <http://www.unmultimedia.org/radio/english/2013/07/thousands-affected-by-drought-in-namibia-and-angola/> (consulted on 07 March 2014).
 - The World Bank. 2012. *Poverty headcount ratio at \$2 a day (PPP) (% of population)*. http://data.worldbank.org/indicator/SI.POV.2DAY?order=wbapi_data_value_2012+wbapi_data_value+wbapi_data_value-last&sort=asc (consulted on 29.08.2014).
 - The World Bank. 2014. *Namibia*. <http://www.worldbank.org/en/country/namibia> (consulted, 29.08.2014).

IRUNN VILHELMOSEN HAUG

Leaving drought and hunger behind: out-migration from Karamoja, Uganda

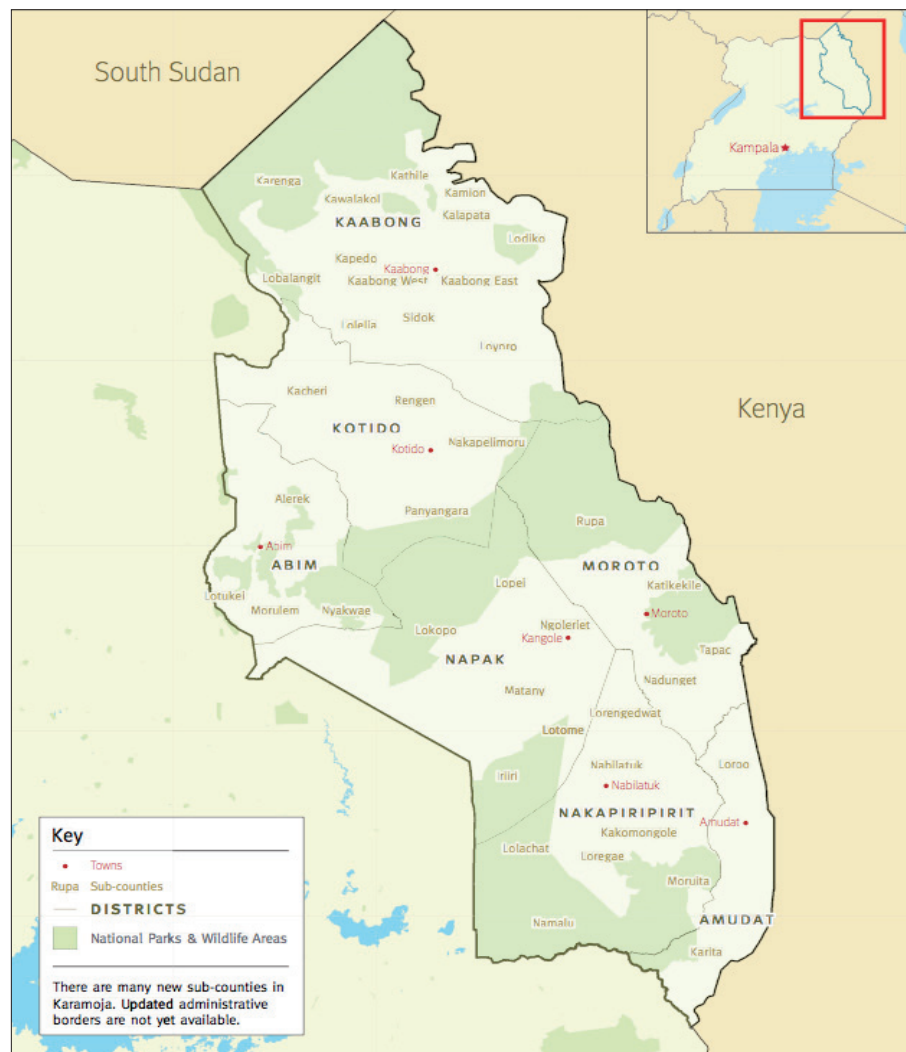
Environmental factors have long impacted migration flows everywhere in the world. People have historically migrated, both internally and internationally, from places that have become inhabitable due to damaging environmental conditions. Migration is often used as a coping mechanism, an adaptation strategy, or even a survival strategy. As climate change accelerates changes in environment and the deterioration of livelihoods in certain areas of the world, these migration flows are expected to increase.

While climate change is a global phenomenon affecting all humans, it is often the least-developed countries and the lower income populations that are affected most severely by it. This is due to their limited capability to cope with the changes experienced and the often high dependence on natural resources. Karamoja is a district situated in the north-eastern part of Uganda, a small country in East Africa. It is a dry nomad-land inhabited mainly by pastoralists, where harvests are below the population's needs year after year. Climate change adds to the existing challenges for survival in Karamoja. Drought and floods are the most common disasters affecting Karamoja, causing famine and malnutrition. In an attempt to make ends meet, the region receives large amounts of food aid through international organizations. Climate change is expected to reduce crop yields further with an increased number of droughts in the years to come, challenging the already low economic development of the region.

To adapt to their harsh living-conditions, the people of Karamoja have traditionally seasonally out-migrated, but returned to the area when conditions improved (Stites et al, 2007). Today, the pattern of migration has changed, with more people seemingly leaving permanently (Gelsdorf et al, 2012). New migration patterns also include more minors migrating to urban areas in order to make money (IOM, 2013a), where many of these children risk being exploited for labour, or end up begging on the street. Hopes of a better life are not always fulfilled in the city. Policies regarding Karamojong migrants are few or completely absent, and not enough is known about how both adult and child migrants are treated in the city.

This paper examines how environmental change is one of several factors affecting the Karamoja region, and how this change expresses itself in new forms of out-migration. It raises the issue of ensuring livelihoods in Karamoja, and the consequences this new form of migration involves, looking at both international and national responses to the issue. Although a slow-onset disaster such as Karamoja need to recognize previous years trends and developments, it will focus especially on environmental change and migration in the year 2013.

Map 1. The Karamoja Region, Uganda



Source: Human Rights Watch (HRW), 2014.

1. KARAMOJA – A DUSTY NOMAD-LAND

Karamoja comprises the north-eastern part of the ‘pearl of Africa’ that is Uganda, and measures about 27,200 square kilometres, (Powell, 2010). It is a vast and dusty landscape, famous for the impressive Kidepo National Park in the north, and for its traditional pastoralist way of life and at times violent cattle raids. The region is made up of seven different districts, namely Abim, Amudat, Kaabong, Kotido, Moroto, Nakapiripirit and Napak. Out of the many ethnic groups in Uganda, nine are found in Karamoja, and are usually referred to as the Karamojong (MAAIF, 2013). The Karamojong constitute just over 1.1 million people (OCHA, 2009), out of a total population of about 34 million in the whole of Uganda (UN DESA, 2013). The Karamojong can be divided into the Dodoth, residing in the north, the Jie, inhabiting the central part, the Pokot, lining the Kenyan border, and the Bokora, Matheniko and Pian, all three living

in the south of the region (Powell, 2010).

Different from the rest of Uganda, the Karamojong is a primarily agro-pastoralist people. Their livelihoods therefore depend both on agriculture and on raising livestock, and cattle are key to life in Karamoja. Other livelihood options include foraging for food such as leaves¹ and casual labour (Gelsdorf et al, 2012). Their pastoral nomadic lifestyle entails moving around with their livestock in search of water and pasture. Nomadism as a way of life is often used in areas where natural resources are scarce and land is infertile. A nomadic way of life can be regarded as the most suitable one for the environment in Karamoja, taking advantage of the landscape in an efficient manner (ibid.). The Karamojong are thus used to travelling long distances for survival.

To understand today's situation in Karamoja, one must consider the historical developments of the region. The country suffered greatly in terms of human and economic development both under the rule of Idi Amin and with the war against the Lord's Resistance Army (LRA). When the current president, Yoweri Museveni, took control of the government in 1986 the country was extremely poor and its infrastructure lay in ruins. Although Uganda's economy has shown significant improvement since then, the progress has been unequal, with the north often being seen as 'left out' in terms of development. The Karamojong has for decades been regarded as 'backwards' compared to the rest of the country, largely because of their reliance on agro-pastoralism (HRW, 2014). Prime Minister Milton Obote famously said in 1963 "We shall not wait for Karamoja to develop," after a visit to the region (Daily Monitor, 2012), and state officials have been quoted saying the nomadic way of life is "outmoded" (HRW, 2014). With this understanding of the people, coupled with the insecurity and poor infrastructure of the region, Karamoja has often been one of the last to benefit from government policies and donor-funded projects (ibid.). When evaluating Karamoja, there is a stark difference from the rest of the country in regards to culture, lifestyle, development and environment.

2. ENVIRONMENT IN KARAMOJA

The environmental situation in Karamoja can be described as a slow-onset disaster. Slow-onset disasters take a long time to produce emergency conditions, and are usually accompanied by early warning signs (WHO, 2014). Drought is one slow-onset disaster causing failed harvests and death of livestock in Karamoja. Increasingly, Uganda is experiencing intense, frequent and prolonged droughts (GoU, 2013). The government reports that with Karamoja receiving especially low annual rainfall, people are affected by drought every year (ibid.). Droughts are characterized by strong winds, leading to vegetation drying up, crop failure, reduction in grazing area for cattle, and decreased food and milk production in Karamoja (ibid.). Droughts also dry up seasonal rivers and decrease existing water sources, already scarce in Karamoja.

1. Women are reported to forage in the bush for leaves from the Ekorete tree to make sauce. The leaves from this tree supposedly save many households during drought when there is nothing else to eat (Uganda Radio Network, 2014)

Picture 1. Women fetching water in what is left of the river in Moroto, Karamoja



Source: Vilhelmsen Haug, 2013

Drought and famine have claimed many lives in Karamoja throughout history (GoU, 2013), and it remains by far the most food-insecure region in the country (Gelsdorf et al, 2012). According to the Famine Early Warning Systems Network, 2013's main harvest in Karamoja was expected to be 30-50 per cent lower than average because of poor rains, sending almost half a million people in need of humanitarian assistance (The East African, 2014). The dry spell came when the crops needed water the most, and unfavorable temperatures led to water stress on plants, affecting production (Tenywa et al, 2013). When the rain finally arrived, local Ugandan newspapers reported "people were happy when they saw the rain at first, but then it continued and they became uneasy" (Ariong and Emwamu, 2013). As the rain continued, it flooded gardens, washed away crops and roads, and made that there would not be any crops to harvest in the first quarter of the year (ibid.). Hunger had killed 46 people already by the middle of July 2013 (ibid.).

The environmental factor causing food insecurity can be described as substantial, but food insecurity also stems from conflict and other factors (Mayer, 2014). "The fact that children speak glowingly of eating food from garbage dumps should serve as a wake-up call as to the levels of food insecurity ..." (interview with child that had migrated to Kampala, in Stites et al, 2007:24). Between April and August 2013, drought again created widespread famine in the region (GoU, 2013). Crops withered and animals died, and several people migrated to other areas in search for water and pasture for their animals, and food for themselves (ibid.). In periods of drought, families may only eat once a day or not at all (Powell, 2010). The average Global Acute Malnutrition (GAM) rate in Karamoja lies on 11 per cent, with extremely high GAM rates in Moroto (20.2 per cent) and Nakapiripirit (14.4 per cent) (Mayer, 2014). To compare, the international emergency threshold lies at 10 per cent (OCHA, 2008). However, not everybody have the means to migrate, and most people stay behind and manage one way or another (Mayer, 2014).

Climate models predict that Uganda will experience an increase in average temperatures up to 1.5 degrees Celsius in the next twenty years (GoU, 2013). The United Nations Framework Convention on Climate Change (UNFCCC) state that

increasing temperatures will cause dry regions to become drier, and lead to reduced crop productivity in seasonally dry and tropical regions (2012). The Ugandan government report that these changes in temperature are unprecedented in the country's history and make the country's food security situation unclear (GoU, 2013).

Changes in rainfall patterns are also expected to occur along with climate change. Rainfall is limited and unpredictable in Karamoja, with an expected annual average rainfall of 400 mm in the east of Karamoja and 1000 mm in the west of the region (Irish Aid, 2007 in Powell, 2010). Karamoja already experiences frequent flash floods and poorly distributed torrential rains, leading to loss of harvests and food insecurity (GoU, 2013).

Picture 2. Herding cattle in the dry landscape of Karamoja



Source: Vilhelmsen Haug, 2013

Soil degradation is also a serious problem in Karamoja (Mayer, 2014). In times of less rainfall, the soil dries out, and heavier rainfall creates larger and more rapid overflow, increasing the chance for floods and erosion. Flooding in addition to drought is a major problem in Karamoja, as it washes away planted seeds and crops (GoU, 2013). Floods also reduce the productivity of land, resulting in further declined food production (UNFCCC, 2012). In semi-arid and arid areas in Africa, growing seasons, crop potential and the area suitable for agricultural activity is predicted to decrease with climate change (UNFCCC, 2012).

Climate change is also anticipated to cause a shift in epidemics and diseases. Warmer weather and prolonged rains will increase incidences of malaria and other tropical diseases, already widespread in the area (GoU, 2013). With limited access to health facilities and resources available for their services, this will put an additional strain on the people. These prolonged droughts, erratic rains and flash floods also increase the incidence of pests, vectors and diseases in plants and livestock (ibid.).

Pastoralists have always been vulnerable to climate variations because of their reliance on rainfall and access to water and pasture. Threats to the environment in Karamoja are already present, and include overgrazing of pasture, a reduction of soil quality, overburdening of water resources, loss of biodiversity, and the depletion of wild foods, animal forage and firewood (Kagan et al, 2009). While famine and bush

fires are already the norm during dry spells, the advance of climate change will only prolong and worsen these situations (GoU, 2013).

3. LEAVING KARAMOJA BEHIND

Internal migration has for a long time been an integral and critical part of the Karamojong's livelihood strategy, and seasonal migration is part of a Karamojong's life. Migration was associated with wet and dry seasons, where cattle were moved in search for more food. When migrating, the Karamojong would establish 'stock associates' and long-term connections between patriarchs across district borders (Stites et al, 2007). Children were sometimes sent to live and work with these stock associates, especially in times of severe drought, and would return when conditions were better (ibid.). Regarding the Bokora people, said to have the highest numbers of out-migration, Stites et al states that "out-migration ... is a distress adaption of a previously existing and effective coping mechanism that involved negotiated and planned movement between stock associates and relatives" (Stites et al 2007:24). Presently, migrants rely on a network of Karamojong in urban areas and districts (IOM, 2013a). In some situations, family and information networks inform potential migrants about labour availability (Stites et al, 2007). People sharing familial, village or clan connections are more likely to migrate (ibid.).

Seasonal migration patterns tended to be limited within Karamoja and its neighbouring regions, but in the 20th century political and natural shocks has driven people to migrate further (IOM, 2013a). Many people are described as having one foot in the countryside and one in the city, as a measure of insurance (Stites and Akabwai, 2012). New migration patterns involve more minors migrating to urban areas to make money (IOM, 2013a). Both traditional and current migration is circular in nature, meaning that children will often return home with the money that have earned after a period of time, and eventually re-migrate in order to earn more (ibid.). Unlike the previous mentioned 'stock associates,' migrants today tend to more often go to work for people they have no previous connection or relation to (Stites et al, 2007). Unlike before when migration was mostly limited to the region, more migrants today go to Kampala and other big cities (Billings, 2014).

Although migration is a coping strategy, it is a limited one (Mayer, 2014). When the Karamojong are asked why they do not migrate or move to somewhere living conditions are easier than in Karamoja, the replies are usually that they are unable or unwilling to do so (ibid.). This might stem from differences in language, lack of education, illiteracy, racism and discrimination, as well as a tradition and culture where it is of crucial importance not to invade anyone else's territory (ibid.). Also, as in most migration situations, the lowest-income persons cannot afford to leave. "Other people also had hunger, but they lacked the money to travel to Kampala. They would have all gone if they could. I saved money by collecting firewood until I could afford to go" (interview with a woman at the Kobulin reception site in Stites et al, 2007:13). Worsening living conditions for people were usually followed by a final trigger event that acted as a catalyst for them to migrate (ibid.).² Both historically and currently, more women than men migrate (ibid.). Men are often needed to herd cattle at home, while women face a wider range of employment opportunities in the city, such as housekeeping, cooking or childcare.

2. Trigger events can be loosing assets through raids, death of a family member, physical or sexual violence, or, if a child, neglect.

LIFE AS A MIGRANT – THE PARTICULAR CASE OF STREET CHILDREN

Children migrating are common, as 50 per cent of the population of Karamoja is estimated to be below 18 years old (Knaute and Kagan 2008, in Powell, 2010). Almost half of all households in the districts of Napak and Moroto have at least one child that has migrated (IOM, 2013a). Trafficking of children from Karamoja is also a problem, and IOM reports that they assisted 128 children trafficked for labour exploitation in 2013 (2013b). They had been trafficked for the purpose of street begging, and said that they were sent to Kampala because there was “no money” at home (ibid.). Many of the children were also trafficked in order to be used in illegal activities such as petty theft (IOM, 2013c).

It is difficult for the Karamojong to find jobs in the cities, and they usually end up with simple jobs in market areas (Mayer, 2014). Many children also engage in begging, either full-time, or in addition to jobs such as sweeping mills, caring for other children, unloading trucks, stocking stores or collecting and selling metal (Stites et al, 2007). Children are particularly vulnerable, and risk trafficking or sexual abuse, or being exploited in the labour force (ibid.). Migrants often lack places to sleep in the urban centers, and many end up sleeping outside, where they are exposed to crime, potential police and civilian harassment, and possible sexual abuse (Stites and Akabwai, 2012). Both boys and girls face abuse by other children and grown-ups (IOM, 2013a)

Children also risk being taken in by the police or Kampala Capital City Authority (KCCA) when begging on the streets. While the official information on today’s situation could not be found for this paper, authorities are known to have previously done regular ‘round-ups’ of street children where they have been placed in so-called ‘rehabilitation’ centers, usually run by the Ministry of Gender, Labour and Social Development (Stites et al, 2007; interview with Alexander Billings, 2014). Centres such as the Kampiringisa Rehabilitation Centre outside Kampala, which was originally a low-security place for delinquent children and youths, has served as a detention site prior to referral to the Kobulin reception site in Karamoja or to the children’s direct return to Karamoja (Stites et al, 2007). The centre is poorly resourced and conditions are run-down with hardly any services for the children (Billings, 2014). The children are often detained at these centres until somebody pays for their release or until they are sent back home (Stites et al, 2007). The approach of returning children to their homes has often been unsuccessful, with children re-migrating, making it migration of a circular nature (Billings, 2014).

Uganda has both national and international policies and legal instruments to protect the rights and welfare of children. The Government of Uganda recognizes that there are more children living in the poorer northern regions of the country (GoU, 2013). The Ministry of Gender, Labour and Social Development (MoGLSD) have the responsibility to protect street children, children being exploited for labour and those children that suffer abuse and discrimination. For children to be protected they must not only be protected against trafficking and exploitation, but also be provided adequate nutrition and food security.

People seem to migrate both within and outside Karamoja. The prevalence of out-migration among the general population from Napak and Moroto is 16 per 100 persons (2012 numbers) (IOM, forthcoming(a)). Some go to work on marble quarrying and gold mining sites near Moroto and in agriculture in peri-urban sites (Stites and Akabwai, 2012). The main activities that migrants engaged in in the cities of Mbale and Moroto were selling charcoal, brewing, hawking, selling handicrafts, pushing wheelbarrows at the market and so on, including other simple jobs (ibid.). Migrants often did one job in conjunction with others, indicating that it was difficult to find a steady job with regular pay (ibid.). Some jobs were also paid in exchange for getting a place

to sleep for the night, or for food (ibid.). Most people migrating in the developing world will move to slums, living in inadequate housing with a lack of basic services (ibid.). Research among Karamojong migrants found that some form of harassment is a problem for most migrants, and they suffer both verbal and physical abuse (ibid.).

Despite the difficulties of urban life, many people report that they prefer life in town rather than rural areas, as there are more coping strategies in urban settings (Stites and Akabwai, 2012). Some mentioned benefits of migrating to town were information about hygiene, school, bathing, washing clothes, Christianity, paying less attention to witch doctors, more land open to agriculture, gaining skills, and more inter-marriages (ibid.). People said that there were more economic opportunities in town, more safety and less hunger (ibid.). Some felt they had gained valuable skills as agriculture laborers, and wanted to take the skills home to Karamoja, but worried about the rains being unreliable (ibid.).

Despite the environment not being the sole reason for migration from Karamoja, the Karamojong can be regarded as environmental migrants. The Ugandan government is critically aware of its many internal and international migrants, having suffered itself from a civil war creating hundreds of thousands of internally displaced people, and being situated among several war-torn countries also pushing refugees across their border. Rural-urban migration is creating rapid urbanization, and migrants often end up living in slums in the cities. However, there is not much focus on environmental migrants in the country as of now, and it is difficult to obtain accurate data on migration to and from Karamoja. Besides the region being relatively insecure until a few years ago, surveying internal migration in a populous country such as Uganda with limited resources can be challenging and a possible reason for the lack of statistics.

4. LEAVING HUNGER AND INSECURITY

During the famine in 2013, a national newspaper reported that about 5000 Karamojong had fled into neighboring Kenya where food was provided by the government (Ariong and Emwamu, 2013). Another national newspaper reported that 8000 people had to migrate from their homes to nearby areas (Tenywa et al, 2013). Some people, including children, had gone to the gold mines to look for gold to sell for food (ibid.).

Insecurity and widespread loss of livestock are said to be the main reasons for leaving Karamoja. "Who is so new in Uganda that he does not know the common problems of drought, raids, and disarmament that have affected the Karamojong?" (An interview with a man at Kobulin reception site in Stites et al, 2007:8). There is a strong link between natural resource capability and population settlement, and people are known to leave unproductive areas for areas that are more habitable and resourceful. People do not only suffer from food shortage, but also poor sanitation, contaminated water, opportunistic diseases, diarrhea and malaria (Mayer, 2014). Still, environmental risks and natural disasters are becoming major drivers of displacement and internal migration in Karamoja (IOM, 2013a).

The response mechanisms to climate changes have remained as it was before: it incites movement among the pastoralists in search for water and pasture. This often leads to conflict as they meet people from neighbouring regions and compete with them for scarce natural resources (GoU, 2013). Karamoja have experienced decades of insecurity caused in part by the dictator and former governor of Uganda Idi Amin Dada's rule and fall, and the following availability of small arms in the region. Insecurity is thus listed as another main reason for migration (Stites et al, 2007). Human and livestock security has deteriorated over the past years, and the loss of livestock by drought or raids profoundly affects both food security and human security of households (ibid.). After the collapse of Idi Amin Dada in 1979, various Karamojong

communities looted arms depots in the region, leading to extremely violent cattle raids with high casualty numbers (ibid.). Cattle raiding have, however, served as both a sociocultural and economic institution for centuries (Gelsdorf et al, 2012) but protracted inter- and intra-clan conflicts over cattle and access to pasture and resources, cross-border incursions by groups from neighbouring Kenya and South Sudan, have all negatively affected the region's socio-economic development (Powell, 2010). Despite successful government-lead demobilization programs and decreasing casualty numbers from raids and feuds, insecurity remains an important factor in understanding the living conditions in Karamoja.

The Bokora are reported to be the ethnic group to out-migrate the largest, in terms of both children and adults (Billings, 2014). Disarmament programs have been relatively successful among the Bokora, thus leaving them more vulnerable to raids, but whether this is the reason for especially high migration numbers from this group have not been determined (ibid.). Nonetheless, household surveys in 2013 found that there was a decrease in migration among the survey group, but the reason for this is not clear (ibid.).

Picture 3. Town life in Karamoja



Source: Vilhelmsen Haug, 2013

Poverty is another factor concerning migration, and Uganda ranked 161 out of 186 countries listed in the United Nations Human Development Index in 2013 (UNDP, 2013), with Karamoja being the poorest region in the country (Gelsdorf et al, 2012). According to the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), 82 per cent of the people in Karamoja live under the poverty line (2008). Only 46 per cent of the population has access to safe drinking water, and 8 per cent access to sanitation units (ibid.). Poverty is an underlying cause for out-migration, as poverty decreases the resources available to cope with environmental degradation and climate change. Additional reasons for out-migration are high unemployment, poor leadership in the region, domestic violence and/or the neglect or abuse of children (Stites et al, 2007).

5. IS THE PASTORALIST LIFESTYLE UNDER THREAT?

On the national level there is an on-going discussion on what should be done in Karamoja to improve livelihoods and decrease migration from the area. The debate has been on the economic viability (and desirability) of pastoralism, the official discourse being that it is not valuable to the country's economy (Powell, 2010; Gelsdorf et al, 2012). Janet Museveni, Minister of Karamoja Affairs, said that: "... we in the Government cannot romanticize about nomadism as a way of life, because it is a danger we have to Figure ht like we Figure ht like any other social ills (cited in Gelsdorf, 2012:14).

Government efforts seem to be aimed at stopping and reversing the trend of out-migration, with efforts to return the people to their places of origin or to newly created settlements in areas "better suited for agriculture" (Stites and Akabwai, 2012:4). Government policies have previously discriminated against nomadism to rather promote agriculture (HRW, 2014; The East African, 2014). Money for food aid is supposed to be phased out, making families more dependent on home-grown food, such as cassava and potatoes, implying durable settlement in one place.³ Policies have undermined traditional livelihoods through promoting ranching, nationalisation of key resources, forced destocking and privatisation of rangelands (FEWS NET, 2005), thus rapidly dismantling pastoral systems (Vidal, 2011). It seems to be the government's aim to eradicate pastoralism in order to clear land for foreign-owned, mechanised farms, for conservation and for mineral exploitation (ibid.).⁴ With land being sold to foreign corporations to grow biofuels, more 'conservation' and mining areas, critics hold that this will increase hunger and force more young people to move into cities (ibid.).

Picture 4. Cattle and goats are important livestock in Karamoja



Source: Vilhelmsen Haug, 2013.

3. According to Vidal, this is stated in a leaked letter from Janet Museveni, Minister of Karamoja Affairs (2011)

4. Read more about the consequences of mineral resource extraction in Human Rights Watch, 2014

The viability of pastoralism is dependent on the availability of natural resources, access to land and environmental factors, and can easily be disrupted by climatic, economic and political changes (Blench, 2001), as have been seen in Karamoja. However, as Karamoja suffer from erratic and poorly distributed rainfall, pastoralism may be a better-suited livelihood option in this region than sedentism (FEWS NET, 2005). Sedentism usually requires a favourable climate for sufficient year-round resources so that people can survive on the site without moving, and often creates an increased demand for natural resources. This involves a transformation from foraging to agricultural and animal domestication. With climate change and the following probability of rise in temperatures and increase in droughts, animals will be more at risk, and conventional farming can become impossible (Vidal, 2011). While pastoralists adapt to climate change by moving, cultivators are largely unable to respond as they do not know when or what to plant (*ibid.*), and experts disagree on whether sedentarisation will lead to increased livelihood security (Gelsdorf et al, 2012). There are both benefits and disadvantages to the government's promotion of agriculture, and time will tell if this has been the best strategy to pursue (Billings, 2014). The goal should be to find a balance between the pastoralist traditional culture and national policies largely focused on agriculture (*ibid.*).

6. WHAT IS BEING DONE?

Various international and national organizations are working in Karamoja to relieve the pressure on the people, providing food aid, running livelihood programmes, education programmes, and assisting people in new farming and agricultural methods. In the cities, NGOs work with some of the migrants, most often street children. IOM is assisting victims of trafficking and helping them resettle in Karamoja.

Extreme climate vulnerability is one of several factors that have made the Karamojong so vulnerable to food insecurity (HRW, 2014). In response to this, relief organizations have provided food aid in the region for decades (Stites et al, 2007). The World Food Programme (WFP) has a large presence in Karamoja, distributing food aid and running other types of programs. The WFP also runs programs for re-forestation and soil rehabilitation. However, for these programs to be successful there needs to be food production or livestock to graze on this soil, emphasising the complexity of solutions (Mayer, 2014).

With regards to environmental hazards, the Ugandan government has undertaken several initiatives and measures to mitigate the unwanted consequences. The government has a National Policy on Disaster Preparedness and Management, promoting national vulnerability assessment, risk mitigation, disaster prevention, preparedness, effective response and recovery, in a manner that integrates disaster risk management with development programming and planning (GoU, 2010). The report states that “despite a growing understanding and acceptance of the importance of disaster risk reduction and increased disaster response capacities, disasters and in particular the management and reduction of risk, continue to pose a national challenge.

The National Development Plan deals with climate change, identifying the constraints and highlighting objectives, strategies and interventions that should be implemented to address climate change concerns (GoU, 2013). The Uganda Vision 2040 plan also states actions that should be undertaken to address climate change, and calls for funding from both international and local finance institutions (*ibid.*). The National Climate Change Policy is still being drafted, but is supposed to be an important response to climate change in Uganda, laying down objectives and strategies that will address climate change within each sector, such as agriculture (*ibid.*). The National Adaptation Plan of Action (NAPA) was launched with support from the Global Environment Fund (GEF), and its objective is for ‘Least Developed Countries

(LDCs) to identify priority activities that respond to their immediate need to adapt to climate change (ibid.).

Pilot projects are being implemented across the country to strengthen the people's resilience to climate change impacts, but have been challenged by lack of funding and/or low capacity of local governments to integrate the adaptation activities (GoU, 2013). Uganda is also party to the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol, both obliging Uganda to put in place mitigation and adaptation measures to address the causes and effects of climate change, as well as undertake education and awareness programs (ibid.).

The 'Ministry of Karamoja Affairs' was established in 1998 and is today headed by Janet Museveni, President Museveni's wife. The Karamoja Livelihoods Improvement Programme (KALIP) is a European Union funded programme supporting livelihoods production in Karamoja for agro-pastoralists. In Nakapiripirit some women formed the Tokora Community Disaster Management Committee to identify the hazards affecting them (GoU, 2013). They have also established a cereal bank and mobilized funding to buy cereals from farmers during harvest, which are sold back to the farmers at subsidized prices during shortage (ibid.). As the government is trying to diversify livelihoods, a creation of markets to sell the new agricultural and animal products must take place (Mayer, 2014). Today, there is a lack of markets both within and outside Karamoja, making this approach even more challenging (ibid.).

Picture 5. Women carrying wood back to Moroto, Karamoja



Source: Vilhelmsen Haug, 2013

In 2008, the Ministry of Health highlighted the need for access to clean water for livestock and humans, and the government attempted to provide water tanks to benefit the Karamojong livestock, and reduce the need to travel the long distances in order to water the animals (in Powell, 2010). However, tanks were often empty and not geographically evenly distributed, partly due to insecurity in the region and high maintenance costs (Ministry of Health, 2008, in Powell, 2010). Another initiative taken is the drilling of boreholes, but Kagan et al, argue that this is not the best solution, fixing grazing to specific locations and decreasing pastoral mobility (2009). Overgrazing also becomes more common around the boreholes, leading to soil erosion, loss of biodiversity and increased food insecurity (ibid.).

Climate change is a relatively new concern in Uganda, and is still gaining momentum (GoU, 2013). Research has shown that most levels of the population have a limited awareness of climate change, hindering implementation of policies and reduction of risks (ibid.). There is, however, no doubt that the impacts of climate change will be severe, especially in the agricultural sector, which is mostly subsistence

in nature and rain fed (ibid.). Prolonged droughts reduce crop yields and unreliable rainfall patterns challenge people's ability to produce or purchase sufficient food. Climate change will potentially cause food insecurity for households, malnutrition, poor health, and eventually death (ibid.).

Despite well-articulated policies, policy and program implementation has not been optimal (GoU, 2013). Many programs and much funding have been given to projects in Karamoja, but results can be hard to determine. It is described as a difficult area to work in with limited opportunities, with high levels of illiteracy, climate degradation, in a post-conflict setting (Mayer, 2014). The government argues that financing at the initial levels is a major constraint to successfully implementing the above-mentioned initiatives (GoU, 2013).

7. THE FUTURE FOR THE KARAMOJONG AND KARAMOJA

This paper examines the harsh environmental conditions the pastoralists in Karamoja face, and how this contributes to the rural-urban migration that is taking place. Climate change is likely to continue the current trend of successive poor rains, increase drought-related shocks and cause unpredictable and sometimes heavy rainfall (Oxfam, 2008). Out-migration is therefore likely to continue or rise in the same way as it has for the past few years. However, an increase in temperature and rain intensity during the short rains, October to December, may also lead to longer access to wet-season pasture and less frequent drought (ibid.). Nevertheless, possible negative implications of this can be livestock succumbing to heat stress, agricultural encroachment on grazing land, increased flooding and the further spread of wet season diseases (both among humans and livestock) (ibid.).

Further research should be done on the consequences of climate change, how these will affect the people living in Karamoja, and what can be done to mitigate the detrimental results of it. The challenges of climate change must be seen in connexion with other factors affecting the region, such as the pastoralist way of life, poverty and insecurity. Attention should be given to the Karamojong's own voice on how to cope with climate change in the area, as they can certainly be said to be experts on this. Instead of disregarding pastoralism as a viable and beneficial way of life in Karamoja, traditional practices incorporating modern developments could prove to be the most effective way to ensure livelihoods.

Gaps in state's preparedness to climate change come from inequality, lack of political will and poverty, and leads the lowest income countries to be the least able to ensure their population's food security (Oxfam, 2014). Hunger is not inevitable, but climate change is worsening food security situations around the world (ibid.). The lowest income people spend most of what they earn on food and unfortunately are the ones most severely affected when food crises hit.

Migration has been a survival strategy in search of water and pasture in dry areas for centuries, but migration patterns have changed recently, with more children migrating, and migrants moving further away. It is uncertain what becomes of these migrants, as there is little data that can establish whether they stay in the city, whether they move on to new places, or whether they go back to Karamoja. Migrants, especially children, often end up on the streets of Kampala begging or doing other simple jobs to survive. Many Karamojong that come to the cities end up living in slums (Billings, 2014). There is a need for more data on contemporary migration patterns, concerning destinations, the time spent away, and the reasons for moving, remittances and return patterns. New financial systems are being formed, with extended social networks and remittances, but little is known about the benefits of these (Stites and Akabwai, 2012).

How the Karamojong will be able to adapt to climate and environmental changes

will depend on the response from the government and international partners. Interventions so far seem unlikely to affect migration flows (Stites et al, 2007). However, as numbers from IOM shows, child migration was lower in 2013 than in 2012 (IOM, forthcoming(b)). Suggested reasons for this is improved collective efficacy, a perception of safety, livestock ownership and increased food security (ibid.). If these factors continue to improve, migration can be further reduced.

The government's approach seems to be improving livelihoods for the Karamojong in Karamoja, and an attempt to resettle those migrants who have reached the city. Livelihoods for the Karamojong must be ensured, for both those who live in Karamoja and those who already live in the city. Some argue that migrants from Karamoja should be considered as internally displaced people rather than economic migrants, which is the government's view today (Sundal, 2010). This would then ensure United Nations protection during resettlement, limit displacement, and avoid human rights violations (ibid.).

It should be of careful consideration whether the government's approach of improving livelihoods in Karamoja is a beneficial long-term solution for the Karamojong, or if this approach is causing more harm than good. The questions that will be raised in regard to resettlement are both ethical and practical. What will be the livelihood basis at resettlement sites, and how will this prevent people from simply migrating once more? It is likely that rural-urban migration will continue as climate change intensifies droughts and floods, thus decreasing food security. As more Karamojong reach the city, networks with people back home will increase the likelihood of more people migrating. Their life in the city will depend on what approaches the government will take to migration, increasing security and livelihood options for the Karamojong there, or focusing on resettlement and improved livelihood options in the region. ♦

BIBLIOGRAPHY

- Ariong, Steven and Emwamu, Simon P. 2013. "46 dead as hunger pounds Karamoja, Teso" in Daily Monitor. <http://www.monitor.co.ug/SpecialReports/46-dead-as-hunger-pounds-Karamoja--Teso/-/688342/1917310/-/mah9o2z/-/index.html>, accessed 02.04.2014
- Blench, Roger. 2001. *You can't go home again: Pastoralism in the new millennium*, Overseas Development Institute, Cambridge, UK
- Daily Monitor. 2012. "Waiting for Karamoja to develop: Of Uganda's uneven development." <http://www.monitor.co.ug/SpecialReports/ugandaat50/Waiting-for-Karamoja-to-develop/-/1370466/1430994/-/978735/-/index.html>, accessed 22.04.2014
- FEWS NET. 2005. *Conflict Baseline Study Report: Conducted in the Karamojong Cluster in Kenya and Uganda*. <http://docs.mak.ac.ug/sites/default/files/USAID%20Karamoja%20Conflict%20Baseline%20Study%20Report.pdf>, accessed 04.04.2014
- Gelsdorf, Kirsten et al. 2012. *Livelihoods, basic services and social protection in Northern Uganda and Karamoja*. Feinstein International Centre, London, UK
- Government of Uganda (GoU). 2010. *The National Policy for Disaster Preparedness and Management*. http://www.preventionweb.net/files/21032_ugandanationalpolicyfordisasterprep.pdf, accessed 20.04.2014
- Government of Uganda (GoU). 2013. *The State of Uganda Population Report: Population and Social Transformation: Addressing the needs of Special Interest Groups*. Kampala, Uganda
- Human Rights Watch (HRW). 2014. *The Impact of Mining on Human Rights in Karamoja, Uganda*. http://www.hrw.org/sites/default/files/reports/uganda0214_ForUpload.pdf, accessed 13.04.2014
- International Organization for Migration (IOM). 2013a. *Migration in Uganda: A Rapid Country Profile 2013*. <http://www.opm.go.ug/assets/media/resources/486/THE%20UGANDA%20MIGRATION%20PROFILE.pdf>, accessed 25.02.2014
- International Organization for Migration (IOM). 2013b. "IOM returns trafficked children to communities of origin." <http://www.iom.int/cms/en/sites/iom/home/news-and-views/press-briefing-notes/pbn-2013/pbn-listing/iom-uganda-returns-trafficked-ch.html>, accessed 5.04.2014
- International Organization for Migration (IOM). 2013c. *IOM Uganda: Statistics of direct assistance to victims of trafficking and exploitation*, <http://www.crtuganda.com/wp-content/uploads/2014/01/VoTs-and-VoEs-31-December.pdf>, accessed 05.04.2014
- International Organization for Migration (IOM). 2014. Definitional issues. <http://www.iom.int/cms/en/sites/iom/home/what-we-do/migration-and-climate-change/definitional-issues.html>, accessed 10.04.2014
- International Organization for Migration (IOM). Forthcoming(a). 2012 *Prevalence of Child Migration from Karamoja's Napak and Moroto Districts* (by Dr. Christopher Lee via Alexander Billings, IOM)
- International Organization for Migration (IOM). Forthcoming(b). 2013 *Karamoja Household Survey Brief Analytical Report* (by Dr. Christopher Lee via Alexander Billings, IOM)
- Kagan, Sacha et al. 2009. *The Karamoja Syndrome: Transdisciplinary systems research informing policy and advocacy*. http://www.cultura21.net/karamoja/docs/Karamoja_syndrome.pdf, accessed 05.04.2014
- Ministry of Agriculture, Animal Industry and Fisheries (MAAIF). 2013. *Regional Pastoral Livelihood Resilience Project (RPLRP)*. <http://www.agriculture.go.ug/userfiles/RPLRP-UGANDA%20RESETTLEMENT%20POLICY%20FRAMEWORK.pdf>, accessed 30.04.2014
- Oxfam. 2008. *Survival of the fittest: Pastoralism and climate change in East Africa*. Briefing Paper. http://www.oxfam.org.hk/content/98/content_3534tc.pdf, accessed 20.04.2014
- Oxfam. 2014. *Hot and hungry – how to stop climate change derailing the Figure* <http://www.oxfam.org/sites/www.oxfam.org/files/mb-hot-hungry-food-climate-change-250314-en.pdf>, accessed 02.05.2014
- Powell, Joe. 2010. *Karamoja: a literature review*. Saferworld, <http://www.saferworld.org.uk/Karamoja%20A%20literature%20review.pdf>, accessed 05.04.2014
- Stites, Elizabeth et al. 2007. *Out-migration, Return, and Resettlement in Karamoja, Uganda: The case of Kobulin, Bokora County*. Feinstein International Center, USA
- Stites, Elizabeth and Akabwai, Darlington. 2012. *Life in Town: Migration from rural Karamoja to Moroto and Mbale*. Feinstein International Center, USA
- Sundal, Mary B. 2010. *Nowhere to go: Karimojong Displacement and Forced Resettlement, in Nomadic Peoples*. Vol. 14, issue 2, pp. 72-86
- Tenywa, Gerald et al. 2013. "Severe food shortage hits Karamoja" in New Vision <http://www.newvision.co.ug/news/644072-severe-food-shortage-hits-karamoja.html>, accessed 26.03.2014
- The East African. 2014. "Uganda government's move to turn Karamoja pastoralist into farmers will not solve food crisis – experts." <http://www.theeastafrican.co.ke/news/Karamoja-pastoralists-into-farmers-will-not-solve-food-crisis/-/2558/2198022/-/sn9jeez/-/index.html>, accessed 30.04.2014
- Uganda Radio Network. 2014. "Two Karimojong Women Die While Foraging for Food." <http://ugandaradionetwork.com/a/story.php?s=62522>, accessed 22.04.2014
- United Nations Office for the Coordination of Humanitarian Affairs (OCHA). 2008. *Joint Factsheet on Karamoja: Humanitarian and Development Realities in the Region – 18 April 2008*. <http://reliefweb.int/report/uganda/uganda-joint-factsheet-karamoja-humanitarian-and-development-realities-region-18-apr>, accessed 15.04.2014
- United Nations Office for the Coordination of Humanitarian

- Affairs (OCHA). 2009. *Focus on Karamoja: Special Report No.3 – October 2008 to January 2009*. <http://www.cultura21.net/karamoja/docs/FocusKja-SpecRep3.pdf>, accessed 10.04.2014
- United Nations Framework Convention on Climate Change (UNFCCC). 2012. Slow onset events: technical paper. <http://unfccc.int/resource/docs/2012/tp/07.pdf>, accessed 25.04.2014
 - United Nations Department of Economic and Social Affairs (UN DESA). 2013. Population Division, World Population Prospects: The 2012 Revision, DVD Edition
 - United Nations Development Programme (UNDP). 2013. *Human Development Report 2013*. http://hdr.undp.org/sites/default/files/reports/14/hdr2013_en_complete.pdf, accessed 10.04.2014
 - Vidal, John. 2011. "Uganda: nomads face an attack on their way of life." in *The Observer*, The Guardian. <http://www.theguardian.com/environment/2011/nov/27/uganda-nomad-farmers-climate-change>, accessed 22.04.2014
 - World Health Organization (WHO). 2014. Definitions: emergencies, <http://www.who.int/hac/about/definitions/en/>, accessed 22.04.2014
- INTERVIEWS**
- Interview with Alexander Billings, Project Officer, International Organization for Migration (IOM), conducted on 30 March 2014
 - Interview with Vera Mayer, Food and Nutrition Security Coordinator, World Food Programme (WFP), conducted on 30 March 2014

The Americas

MARION BITOUNE

Newtok: struggle, survival and recovery¹

Three sides of saltwater seas delimit Alaska: the Beaufort and Chuckchi seas (north), the Bering Sea (west) and the Gulf of Alaska (south). The state of Alaska has 33,900 miles (54,563 km) of shoreline and around 10,000 rivers, which make Alaska the largest state of the United States. Alaska is also one of the least populated states with 680,000 inhabitants of which 13 per cent are Alaska natives. Most Alaskans live in cities but the majority of the state is who sparsely populated with small communities of indigenous populations that live in rural areas in the northern part of the state and in interior Alaska. Indigenous communities are divided in 6 groups² and many of these natives live in villages close to the sea or river and depend largely on hunting, fishing and gathering wild plants for food. Climate change effects are occurring faster than many climate models predicted. As a result, Alaskan natives face unprecedented challenges to adapt. Intergovernmental Panel on Climate Change describes in its last reports on the polar region (IPCC, 2014) that dangers include flooding in coastal communities, erosion, heavy rainfall, storms and snow melts. According to the Alaska Division of Homeland Security, since 1978, there have been more than 228 flooding events that led to state disaster declarations for 119 different Alaska communities and 40 per cent of these flood disasters occurred from 2000 to 2008 with 23 occurring in 2005 (U.S. Government Accountability Office, 2009.). The effects of climate change are believed by both the IPCC and the State Officials to be increasing. Climate change effects, especially erosion are well documented since the 1980s, both communities and state agencies developed a long-term strategy for protection (Robin Bronen 2013). The GAO reported in 2003 that 184 (86%) of the 213 communities were affected by severe flooding and erosion. The Immediate Actions Work Group (IAWG) in 2006 identified 6 communities that are the most imperiled communities by flooding and erosion. (Bronen,R. 2011.) The GAO reported that 12 villages have decided to relocate in part or entirely as an option largely because of flooding and erosion. Of those 12 villages, 4 communities (Shishmaref, Kivalina, Newtok, Shaktoolik) require entire relocation instead of moving infrastructure to higher ground. Consequently, because a catastrophic event could emerge in those communities within the next 15 years, their only alternative is migration. Hence, because of their geographic location, these communities must relocate if it desires a sustainable future. Newtok is the most advanced community

1. From the Newtokmoves.org

2. 6 groups compose the Alaska natives: Unangan (Aleuts), Alutiiq (Pacific Eskimos), Inupiat (northern eskimos), Yup'ik (Bering sea Eskimos) Athabascan (interior Indians) Tlingit and Haida (southeast Coastal Indians).

in the relocation process. This paper begins with an overview of the situation in Newtok. It then analyzes the community-driven relocation process (part 2). Finally, the paper will identify the challenges, what can be the policy changes and lessons that can be learned. (Part III)

1. OVERVIEW OF CLIMATE CHANGE IN NEWTOK

Newtok is a Yupik Eskimo village located on the Ninglik river, close to the Bering Sea. The village's ancestors have lived on the Bering Sea for more than 2,000 years. Newtok is clustered around 63 houses (Bronen, 2011). No roads lead to Newtok and the only access to the community is by airplane (seats maximum 10 persons). Airplanes deliver basic necessities such as food but due to extreme weather conditions, days can pass without any ability to travel. The community settled in its current site in 1950 when the Bureau of Indian Affairs imposed a requirement that children attend school. At the beginning of the fifties, around hundred people lived in the community but since then, the population has tripled. According to 2010 census, 354 people reside in the community. It was identified in December 2003 as an imminently threatened village that needs to be relocated. Newtok was successively declared as flood disaster area in 2004 and in 2005. Flooding from a 2005 storm turned the village into an island for several days and the Ninglick river barge was completely destroyed making it extremely difficult to deliver basic supplies such as fuel to the village.

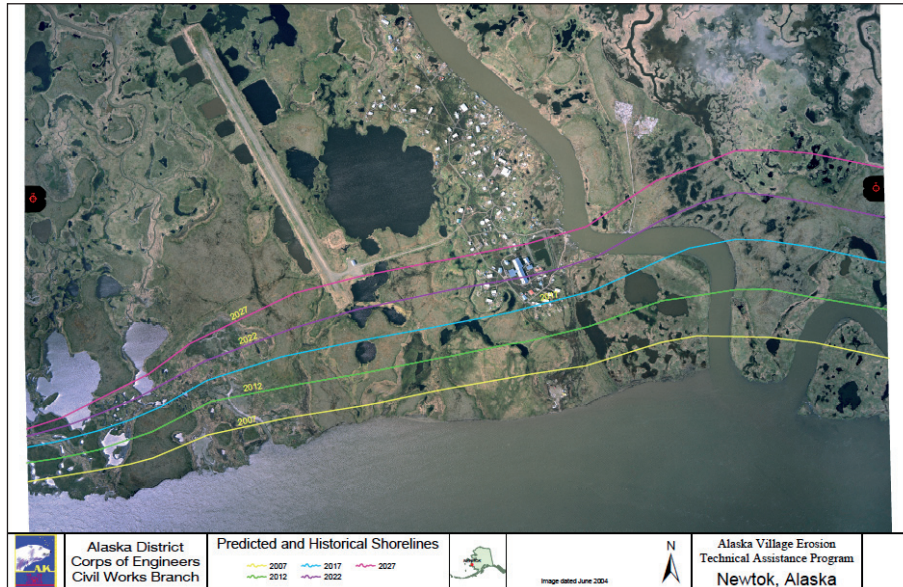
1.1. Newtok: impacts and vulnerability.

It was observed that a combination of gradual ecosystem changes and rapid onset extreme environment events threaten the village (Bronen, 2013). Newtok sits on top of permafrost in one of the largest river delta in the world. Consequently, in thaws period and with warmer temperature, the village becomes muddy and has no bearing capacity. Permafrost³ is melting mainly due to temperature increases. The GAO observes the increase in temperature led to thawing of permafrost, provoking severe degradation of villages' shorelines and riverbanks that slump, erode, and threaten the communities to see the infrastructure to sink into the earth. Melting of sea ice leaves communities and shorelines extremely vulnerable to storm and waves. It is the combination of thawing permafrost, temperature changes, wave action and river current that is accelerating the erosion. Erosion is causing the Ninglick River to move closer to the village. Villagers observed that "every year during the storm season, that river can take away up to 300 feet a year (...)" Every year storms are getting worse, and floods more intense".(Goldenberg, The Guardian, 2013) The state spent around 1.5 million USD to control the erosion between 1983 and 1989. Nevertheless, the Army Corps of Engineers estimated that the highest point of the villages (the school) could be under water by 2017. (NPR 2013)

Climate change not only has ecological impacts mentioned above, but impacts on the community as well.

3. Permafrost can be defined as permanently frozen subsoil, which is found over 80 percent of Alaska, it keeps the land intact, together and especially habitable along the northwestern coast in Alaska.

Figure 1. Alaska Village Erosion Newtok (Corps of Engineers. Alaska Village Erosion Technical Assistance Program 2006.)



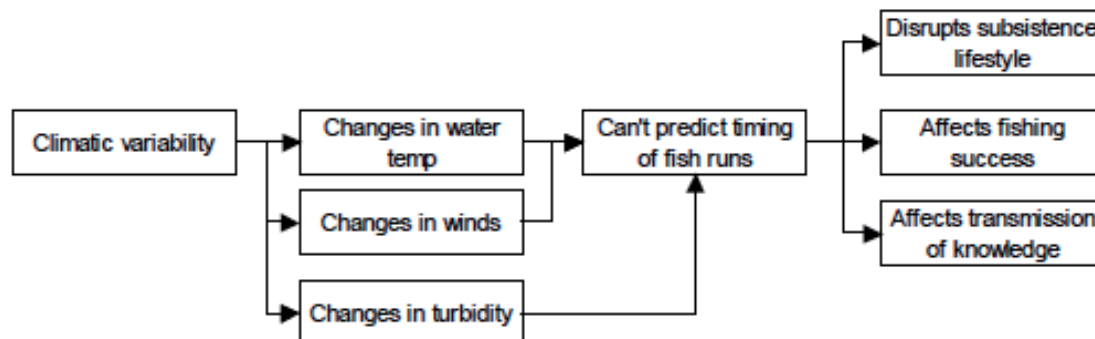
1.2. Mains areas of vulnerability:

Subsistence activities, health, safety, and infrastructure services.

Subsistence activities:

Climate change affects fish stocks⁴ that are constrained to migrate to cooler places or even disappearing altogether, leaving millions of people without food and source of income. Changes in vegetation patterns clearly affect migration patterns of bird and animal life, which will in turn impact the ability of Alaska natives to gather their traditional food (Bronen 2013). Climate change affects both terrestrial and marine habitats, which have consequences nutritionally and culturally for Alaskan Natives. It is harder to predict availability, movement, and behavior of animals as Stanley Tom, tribal administrator said “The snow disappears way late. That is making the geese come at the wrong time. Now they are starting to lay their eggs when there is still snow and ice and we can’t go and pick them (Goldenberg, 2013).” However, the increased variability and uncertainty have also effected social, economical and cultural activities. These subsistence activities are interwoven into the fabric of their lives and form the foundation for continuity between generations by promoting the basic values of Alaska native culture. Hence, climate change caused the Newtok community to change their old-centuries routines. This variability and uncertainty is costly for those populations because it is important to highlight that Alaska is the most extensive area of poverty in the United States (GAO,2009) in terms of household income and has the highest cost in commercial goods because of their isolations. Consequently, given this economic difficulty, indigenous communities are completely dependent on their local environment (for food, transportation and their survival) and have lived off the land and sea for millennia.

4. The marine mammal that are dependent on sea ice for their habitat are disappearing such as: bowhead whales, beluga, whales, seals, walrus, polar bears and a strong decline in salmon stock. (Bronen 2011)



(Example relating to changes in timing of fish. Source: Shearer, Christine. *The Political Ecology of Climate Adaptation Assistance: Alaska Natives, Displacement, and Relocation*. Diss. U of California, Santa Barbara, 2012. N.p.: Journal of Political Ecology, 2012. Print.)

Health and safety

Climate change started to have impacts on the health of communities. According to the Center For Climate and Health Alaska native tribal health consortium, climate change increases “vulnerability to injury, disease, mental stress, food insecurity and water insecurity.” The Center For Climate And Health reported that the Northwest Arctic region has the highest rate of respiratory infections. As a result of a lack of central water supply and treatment sources, Alaskan communities have higher rates of respiratory and skin infections. It was observed that climate change is causing stress due to environmental conditions and fear related to security and safety (Center for Climate and Health, 2011).

Loss of infrastructure

In 1996, the village dumpsite eroded in the Ninglick River, effecting nearby residents. In 2005, the primary barge eroded into the Ninglick River. Barges are essential during summer because they deliver essential supply for community. The loss of barge landing severely impacted the village, now lacking cost-effective fuel delivery for power sources in the village. Despite the fact that a new barge landing is essential, it is not possible because of erosion. Consequently, as climate-induced ecological hazards increase and Newtok’s decision to relocate, it has limited capital investment in existing public infrastructure (Bronen NYU). In addition, Newtok lacks a new sewage disposal system because of their decision to relocate. The community is also facing saline intrusion impacts, which deteriorates the potable water. Coastal erosion ultimately affects the lives of people in this community.

Several options are available to solve this crisis: stay in Newtok and control erosion, collocate to other established villages in the region or relocate the entire village to other new site.

2. RELOCATION AS THE ONLY RESPONSE TO THE CRISIS

Erosion control is nearly impossible and the US Army Corps engineers recognized that then collocation alternative would destroy the Newtok community identity. Therefore, relocation is the only solution to protect community residents. In its last report IPCC stated that “decreased sea ice thickness and extent, less predictable weather, severe storms, sea level rise, changing seasonal melt/freeze up rivers and

lakes, change in snow type and timing, increasing shrub growth, permafrost thaw and storm-related erosion which in turn are causing such severe loss of land in some regions that a number of Alaskan coastal villages are having to relocate entire communities". (IPCC. 2014. Polar regions. IPCC WGII AR5 Chapter 28. p18) IPCC recognizes that there are important threats for Alaskan communities that have no choice than to relocate.

2.1. Selection of the site: a solution to the crisis

In 1994, the Newtok traditional council began a relocation planning process by analyzing 6 potential villages. The council produced criteria to evaluate the relocation site's habitability for the community: "Good soil foundation for village development, no erosion, land suitable for an airport, good barge access and access to subsistence". Consequently, according to those criteria the council selected the northwestern part of the Nelson Island (fifteenth largest island in the US), which is located nine miles away from the current site. 3 communities are located on this island with 1,065 residents and 75% of the land is currently inhabited. It is important to underscore that the Yupi'k made sure that they did not trespass on subsistence areas of other villages by choosing the northwestern part of Nelson Island. No road lead to or from the relocation site and there are no pre-existing infrastructure. The community decided to call the new site Mertarvik (Yupi'k name) that means "getting water from the spring". However, contrary to what we might think, migration for Alaska natives is not something new. Historically, the ancestors of those communities migrated towards several coastal and inland for hunting and fishing to gather subsistence harvests. They moved according to the seasons to follow the "wild game" and fish on which they are mainly dependent (Bronen 2013). However, the US Department of the Interior's Bureau of Education imposed that children must attend school, which created a shift in their migration pattern in the late nineteenth and early twentieth century. As a result, the building of schools, sewage systems, water and electricity infrastructure led to a reversal from seasonal migration to the installation of permanent settlement at the school site chosen by the federal government, reducing the community's ability to move (Bronen 2013).

Climate change effects are therefore affecting communities' ability to adapt to their changing environment through their traditional migration pattern. This change created a new set of dependencies on the government to respond effectively to environmental changes (Bronen, Chapin 2013). Erosion, which is partly a natural process and the principal cause for displacement for Alaska Native, becomes an issue for the reason that communities are tied to the land and built infrastructure such as schools, power plants, and health clinics. Traditionally, communities could migrate easily from areas affected by erosion because they did not rely on built infrastructure (Bronen 2013). Therefore, it was not the first time that Newtok had to migrate because in 1949, the community relocated from "Old Keavalik" to the current Newtok to avoid flooding and find a suitable ground for a new school. As a result, Mertarvik must be their last move. As a traditional council member said, "this will be our last final move. Mertarvik is going to be a lifetime permanent location, higher ground with rock underneath". For these reason, the inhabitants chose carefully the location and voted three times (1996, 2001, 2003) to relocate. The community was opposed to the notion of collocation with other communities. As Stanley Tom, tribal liaison for the Newtok Traditional Council declared in "we opposed to collocation to 100 percent (...) we are all relatives here, we want to be together as much as we can." (Bronen,R. 2011.)

How to obtain ownership of a land?

Nelson Island is owned by federal government and managed by the US Fish and Wildlife Service (USFWS). The phase of the acquisition of the land are as follows (Robin Bronen 2011): First, the community needs the support from the Newtok

Native Corporation;⁵ Secondly, obtain approval from the United States Fish Wildlife Service; Thirdly, the community needs Congress to authorize the land exchange and enact the legislation, which was done on November 17, 2003.

Environmental considerations in Mertarvik

Mertarvik was chosen for its important natural resources. Nevertheless, the community was part of environmental studies since 2006, to outline anticipated impacts and cumulative impacts on protected resources due to their settlement. (Community of Newtok and the Newtok Planning Group. 2011). Listed below are several examples of the Newtok community assessment on Mertarvik and within Nelson Island:

Table 1. Community of Newtok and the Newtok Planning Group. 2011 Relocation Report: Newtok to Mertarvik. Rep.

Categories	Assessment
Birds and waterfowl <i>Mertarvik is rich in bird species in diversity and home of large number of nesting waterfowl. It is also one of the most productive areas in the world of geese.</i>	The settlement of a community in the northwestern part of Nelson Island will have limited impact to waterfowl habitats. There is a potential for temporary and permanent loss of waterfowl habitat through construction of improvements and temporary construction disturbance.
Wetlands, vegetation <i>Wetlands consist of wet tundra within the majority of relocation area lands. Any ground disturbance would likely have an effect on wetland habitats.</i>	Temporary and permanent impacts to wetlands are anticipated as a result of community development at Mertarvik.
Cultural resources <i>Several archeological sites are closed to the northwestern part of Nelson Island.</i>	Sites are located one mile from Mertarvik but no historic properties would be affected by the proposal construction of infrastructure.

To sum up the community is anticipating the cumulative impacts to protected resources of Mertarvik, especially through avoidance, mitigation plans and minimization. Nevertheless, some cumulative impacts are not anticipated.

2.2. The relocation process

The actors: key components of the relocation success.

State and federal agencies

In 2007, the governor of Alaska created the Alaska Climate Change Sub Cabinet to implement a climate change strategy for the state, immediate action workgroup is one of the advisory of the sub cabinet. State and federal government are co chairs and this work group issued recommendation to the governors and address the immediate humanitarian needs of the communities forced to relocation.

5. Robin Bronen explains that the Newtok Native Corporation (NNC) was created according to the Alaska Native Claims settlement that required indigenous tribe to be organized as profit or non profit corporation to receive title to the surface and subsurface land rights. These corporations were developed on the regional and village level. The village corporation is allowed to give to any member of the community the land used by that occupant as her home or subsistence campsite. The Newtok Native Corporation played an active role in the acquisition of Mertarvik. Tom Stanley, newtok's tribal administrator (equivalent of a mayor) underscored in one of his presentation, the NNC attempted for years to reach an agreement with USFWS, it obtained services of lobbyist at the federal level, secured the backing of Alaska congressman and Senators in Washington D.C and negotiated the terms of the transfer. NNC is the unique ownership of the land whereas the council is the only one authority governing the site with several state and federal agencies to make the relocation easier.

Newtok Planning Group:

The Newtok Planning Group is a multi level interdisciplinary government workgroup in Alaska focused on relocation created in May 2006 from an ad hoc series of meetings. The group is unique in Alaska in its multidisciplinary and multijurisdictional structure. Its main objective is to identify agency resources and to establish a strategy for assisting Newtok in its relocation.

The governor of Alaska declared that NPG should “act as the state coordinating agency to coordinate with other state and federal agencies to propose long term solutions to the ongoing erosion issues (...)”. No State or Federal Agency govern or guide the relocation process, on the contrary they are guided by a collective desire to provide assistance to the Newtok Traditional Council.

Communities

The Newtok community is a key actor in the relocation process because they are not just participating but leading the process. The community set the direction and priorities, pushing funding opportunities, as well as building a skilled labor force. (Mertarvik relocation plan). The building of skilled labor force demonstrates the community’s commitment to move. Recently, 17 community members completed 3 months of training in construction, electrical and mechanical trades. Hence, by gaining skills, the community will be able to build and maintain their new community. Newtok is the only authority that makes the final decisions on action. Consequently, Mertarvik does not depend on the agenda of individual government department. In 2012, the Newtok traditional council passed a set of guiding principles that must be apply and promote in the relocation process by partner and all the community residents. The relocation process has to be defined by the Yupik way of life. (Community of Newtok and the Newtok Planning Group 2011). Here are few examples of what can be found in the guidelines:

... remain a distinct, unique community – our own community, stay focused on our vision by taking small steps forward each day; make decisions openly and as a community and look to elders for guidance; our voice comes first – we have first and final say in making decisions and defining priorities, by implementing nation-building principles and working with our partners; no matter how long it takes, we will work together to provide support to our people in both Mertarvik and Newtok; development should reflect our cultural traditions. (Community of Newtok and the Newtok Planning Group. 2011 :27)

Harvard University’s project on American Indian Economic Development observed that if the community was not taking the lead, some government agency would have decided that the “best option” was to collocate with other tribal villages. Residents took the lead because they did not want to lose their ties as unique people. Land in Yup’ik identity is crucial; it is critical to stay within ancestral territory. Mertarvik is a solution to stay connected to each other and to their physical, economic and cultural heritage. As it was mentioned in the Harvard project: “This community-driven approach has helped the village work successfully with complex bureaucracies, even though a majority of Newtok residents are not fluent in English.”

Design and development of Newtok’s relocation plan

The Newtok Planning Group (NPG) is engaged in a multi-year effort to establish a strategic relocation planning process. Despite all the challenges that faced NPG, they succeeded with other agencies to build key infrastructure such as barge landing, six homes and the foundation of an emergency evacuation center that will serve as a temporary emergency shelter for Newtok residents, after the move, it will become the Mertarvik Community Center. The US Army helps with the construction for 5

years through its Innovative Readiness Training Program⁶, which provides military personnel with real-world training on civilian projects. In 2009, Army personnel began to work on a barge landing facility that allows equipment and materials to be shipped to the new site and the construction of an access road that connects the barge landing to the future village followed. Each of these projects was developed with supervision of the Newtok residents and leaders and built with funding from numerous sources, including the U.S. Army Corps of Engineers, the Alaska Department of Transportation and Public Facilities, the Alaska Department of Environmental Conservation, the U.S. Department of Commerce, and the Bureau of Indian Affairs. (Harvard Project, 2010) Mertarvik will reflect the community's layout and the University of Harvard noted that the community center's cultural element includes two huge steam baths, storage areas for hunting and fishing gear, and space for cold storage of fish and game. Elders' knowledge helped orientate the new buildings by taking into account sun, wind, and snowdrifts. (Harvard Project, 2010) 27 million has been spent in Mertarvik so far, but currently no electric, sewage or water system exists at the new site. However, because the relocation process is too slow, in October 2013, villagers accused their own council of "failing to hold regular elections, and raised a petition to through out the leaders and replace Stanley Tom (Tribal Administrator)" (The Guardian, 2013). Dissidents voted for a new council and installed their own leaders but Patricia Cochran, director of Alaska Native Science commission reveals that the upheavals is typical from native communities that are confronting climate change. She adds, "I do not think you would find one community that says they are happy with the pace that's gone on".

Table 2 Table with future cost and how long does the community have (Source: Aveta Report 2006, Newtok relocation could run as high as \$130 million, or \$350,000 per villager)

Community	Cost of future erosion protection	Cost to relocate	How long does the community have*
Bethel	\$ 5,000,000	N/A	>100 years
Dillingham	\$ 10,000,000	N/A	>100 years
Kaktovik	\$ 40,000,000	\$ 20-40 Million	>100 years
Kivalina	\$ 15,000,000	\$ 95-125 Million	10-15 years
Newtok	\$ 90,000,000	\$ 80-130 Million	10-15 years
Shishmaref	\$ 16,000,000	\$ 100-200 Million	10-15 years
Unalakleet	\$ 30,000,000	N/A	>100 years

*These numbers assume no future erosion protection, including that listed here, is not implemented.

Moreover, 2 years ago, Newtok launched a website⁷, newtokmoves.org to be able to raise fund from business and individuals. "We want to raise the money to move our village by doing it the American way: hard work, community and faith. We don't want taxpayer money to fund all of our projects and stimulate what little

6. The innovative Readiness Training provides real world training opportunities for our service members and units to prepare them for their wartime missions while supporting the needs of America's underserved communities. (<http://irt.defense.gov/>)

7. The missions of the newtokmoves.org website are to show exactly what is taking place in their village, from the devastating flooding, erosion and government red tape, to the new native businesses that will fund their growth and allow the village to move 375 residents across the river and out of danger.

economy we have. We want to build an economy that will last and continue to provide for our village for generations to come.”(from NewtokMoves.org) They also want to create new native businesses to fund their own growth and allow them to move their 375 residents.

4 phases

The community sets up 4 stages for the settlement of the community. They will not move all at the same time but it will occur through a process that is incremental and organic in nature. (Community of Newtok and the Newtok Planning Group 2011)

1. Getting ready

This phase correspond to current phase of the relocation. This phase include site selection, building the basic infrastructure such as road, barge landing and water wells.

2. Pioneering

Upagluteng means pioneering in Yupik, which refers to the traditional practice of moving with seasons. Six homes are already built to shelter the first pioneers at Mertarvik. Nevertheless, the families that chose to pioneer will not leave full time without the structure to ensure their safety. They will live during the summer and winter months. The Newtok Traditional Council hopes that this pioneering phase will motivate others move and in doing so, boost confidence for needed infrastructures (Community of Newtok and the Newtok Planning Group 2011). This step is important because it will send a clear message to agencies that it is really happening and that the community is serious about the move. For the community, pioneering is an opportunity to return to traditional ways of life.

3. Transition

An increasing number of community members will make the move (100 or more). With more and more people, more infrastructures will be in place, such as bigger health services, airports, landfills, stores, and community greenhouses might be in place during this phase.

4. Final stage

Final move of all residents to the new town. Villagers do not really know when this step will happen, for some they are losing hope because the process is taking too long.

3. HOW TO OVERCOME THE DIFFERENT CHALLENGES ?

3.1. Newtok’s relocation challenges:

Challenges that are facing Newtok and more generally communities that are threatened by climate change were summed up by the tribal administrator of Newtok, Tom Stanley: “no agency has [the] authority to lead relocation efforts; no funding specially for relocation, patchwork funding from agencies and grants and getting fund take time that we don’t have. We can’t keep up erosion.” (Bronen 2013)

No agencies have the authority

Many reports by federal agencies recognized that no agency has the authority to relocate communities, no governmental organization exists that can address strategic planning needs of relocation and the logistics of decommissioning the original community location, including hazardous, waste clean-up and preservation of cultural site. (Afifi, Tamer, and Jill Jäger, 2010) Hence, there is a lack of leadership and

a multitude of agencies that have their own program, funding priorities, authorities and fiscal rules that are not able to conduct multi-agency cooperation efforts (Alaska Village Erosion Technical Assistance Program, AVETA, 2006) Newtok is dealing with more than 25 different federal, state, tribal and nonprofit agencies (Bronen, Climate-induced community relocations). Other villages such as Kivalina that in search for relocation face the same problem. Janet Mitchell (Kivalina City Administrator) is convinced that «the relocation would move faster if we had a lead entity, someone focused on relocation» and she would prefer to have «a group of people from different agencies. That would make it more powerful. Everyone would have a voice. Including Kivalina.» (Shearer, 2012) This lack of leadership created inefficiency because they are not ensuring that villages in the greatest peril get the highest in priority for assistance. Consequently, currently policies hinder the relocation efforts (Shearer, 2012). Agencies lack the technical, financial and organizational capacity to relocate communities.

No relocation policy

There is a need to strengthen risk mitigation and relocation measures. As stated by Janet Mitchell, tribal administrator of another village threatened by coastal erosion: «The word relocation doesn't exist on the federal level, and I doubt that it exists at the state level» (Shearer, 2012). She also stated “at the federal, state, and tribal levels, there is a lack of clearly defined risk mitigation protocols and resettlement procedures that would trigger more pro-active measures to ensure Kivalina's safety.”

No specific funding is dedicated for relocation

Gap in the US legislation. “It is not as if you suffer a drought, a hurricane, tornado, and you can apply for disaster relief...” (Goldenberg in NPR, 2013). Moreover, according to Chapin and Bronen in their article in 2013 they demonstrate that the erosion is currently the primary cause and a significant hazard faced by Alaskan coastal communities but it is not included in the list of major disasters in the Stafford Act.

Suzanne Goldenberg, award winning journalist for the Guardian, in her article⁸ bemoan the fact that “climate change moves too slowly to be recognized as a disaster and because you need to move people now, before the disaster occurs”) Erosion is not included in the Stafford Act which mean that communities cannot apply for funding. As Robin Bronen declared in an interview for The Guardian “We weren't thinking of climate change when federal disaster relief legislation was passed (...) Our legal system is not set up. The institutions that we have created to respond to disasters are not up to the task of responding to climate change.” The Stafford Act and its amendments require that funding must be spent to restore infrastructures back to their disaster, not to move them altogether. (Petersen, Backer Institute Alaska, 2012). However, communities in Alaska are living in locations which are inhabitable. Consequently, they are not able to receive government funding (Bronen 2011) The actual Federal Emergency Management Agency can only operate for immediate disaster, hence this agency is reactive and not proactive.

Ack in assessing climate change

No method exists to determine whether and when a community can no longer be protected in place with traditional flood and erosion control.

8. Goldenberg, S. « America's First Climate Refugees in Newtok, Alaska. » *The Guardian*. N.p., 13 May 2013. Web.

Statutory barriers

Current policies discourage the building of new infrastructure at the relocation site. For instance, the Alaska department of transportation requires at least 25 students in order to build a school.

Consequently, US legislation (in regards to the post-disaster recovery and hazard mitigation statutory framework) led only to inflexible answers to random extreme weather events. Their main responses are to rebuild and repair infrastructure in place and protect population from future hazards through erosion and flood protection. (Goldenberg, *The Guardian*, 2013) Nevertheless, as Kivalina experienced, protection community in place with rock walls or sandbags are unsuccessful in Alaska despite that millions of dollars have been spent. In September 2006, Kivalina (north of Newtok), after having received a new construction of millions of dollars of seawall, federal government came to celebrate its completion. Everything, however, had not gone as planned, a storm damaged the seawall before the celebration and provoked cancelation of the celebration by the official. After a year, another storm damaged the seawall. 250 residents were evacuated because the seawall was unable to protect them. Hence, technology is inefficient currently to protect people who are living in vulnerable risk-prone.

3.2. The potential solutions that can move the relocation forward:

The policy recommendations are mainly coming from Robin Bronen articles. She is a human right lawyer that works for a long time on the case of Newtok. As more and more Americans are aware and concerned by Arctic climate change; new sets of policies are more than needed. The United States of America needs to imagine a new response framework for erosion.

Two axes can improve the relocation process; on the one hand, creating relocation and on the other hand, governance policies that go along with new institutions.

“Climigration”

The first policy recommendation that can be made is to give a clear definition of the displacement category ‘climate-induced migration’ and profile the population groups that must move (Bronen, 2009). This definition will be the foundation to create a legal and institutional framework to relocate communities. Robin Bronen observes that it exists three drivers of climate-induced migration creating therefore, three categories. Consequently, each type of migration will need a specific institutional framework.

Table 3 Three categories of migrants (Bronen, 2013)

Extreme weather events (hurricane, tornadoes)	Individuals and household
Depletion of ecosystem services (salt water intrusion, drought)	Mass migration (entire communities) are forced to evacuate temporarily.
Ongoing ecological changes caused by the combination of the two mentioned above.	Mass migration (entire community) are forced to relocate permanently.

Climigration would be the best word to describe what is occurring in Alaska but also elsewhere. Climigration is a specific type of permanent population displacement that occurs when community is required to protect residents from climate-induced biophysical changes that alter ecosystem, damage or destroy public infrastructure and repeatedly endanger human lives (Bronen 2009). Climigration is different from migration because it implies that there is an inability to return home because home may be underwater or sinking. “Climigration” creates a new set of indicators for governments and non-government actors to identify when to collectively and collaboratively shift from the traditional post disaster recovery response to a

community relocation process (Bronen, 2011). Those indicators will help to determine which communities are most at risk and to relocate. In Alaska, the indicators of socio-ecological vulnerability demonstrating that relocation is required may contain:

- 1 Repetitive loss community infrastructure
- 2 Imminent danger to the community from the on-going ecological changes and repeated random extreme weather event
- 3 No ability from community expansion
- 4 Number of evacuation incidences
- 5 Number of people evacuated
- 6 Predicted rates of environmental change
- 7 Repeated failure of hazard mitigation measures
- 8 Viability of access to transportation, potable water...
- 9 Decline in socio-economic indicators, food security, loss of livelihood

Therefore, forced migration due to climate change must be clearly defined and have a specific framework response that is distinct from other environmental catastrophes that also cause people to migrate.

After defining the building foundation, the next steps are to create relocation and adaptive governance policy frameworks.

Relocation policy

As a human right lawyer, Robin Bronen included on relocation policy, human right principles that must govern the relocation process. The social, economic and cultural rights of individuals have to be protected during the relocation process (Bronen 2009). Relocation policy must begin with a community vote and relocation site process with the approval from the community. For Robin Bronen, these principles in the relocation policy framework will enhance the resilience capacity of communities by addressing socioeconomic issues, such as lack of economic development and poverty, which can contribute to communities' vulnerability.

An adaptive governance framework as a potential solution.

A multi-level and multi-disciplinary governance framework is crucial for relocation because it involves a wide range of actors. Consequently to have an adaptive governance structure, several changes could be needed.

Amendments

The Stafford Act should be amended to include erosion effects. The term "natural catastrophe" should be extended to include gradual and recurring climate induced ecological processes. This would let the President to declare such circumstances as disaster and release funds for predisaster hazard mitigation.

Change in Federal and State statutes to specifically permit Federal disaster relief funding to be used and federal agencies to participate in building new infrastructure and relocating an entire community to a relocation site when durable adaptation is impossible to the current site location (Bronen and Chapin, 2013)

Those two amendments will allow communities threatened by climate-induced ecological changes to shift from disaster recovery to community relocation (Bronen 2013).

New institutions

It is necessary to create institutions in order to implement relocation policy and new governance.

- The existing community government must have the authority to be a key leader and decision maker in the relocation process.
- Clear organizational structure to implement efficiently relocation policy.
- Federal and state relocation would be responsible for implementing: process

- framework for relocation planning and implementation and an operational framework for the actual relocation.
- States and Federal statutes should outline the institutional framework and funding for the relocation process.
 - Define the governance authority at the relocation site
 - Clear statutory guidance about the role of local government.
 - Interdisciplinary, multi sector approach will foster local governing institutions in identifying potential solutions.
 - To resolve the funding, state of Alaska can dedicate a portion of oil revenue to climate measure.

A lead agency is essential to provide commitment, direction and unity of purpose. This lead agency would then be able to tap the skills and abilities of the other agencies to accomplish task within their fields of expertise. (Shearer, 2012)

3.3. Lesson learned through the case of Newtok

However, what is happening to Newtok could affect millions of people all over the world. Approximately 10% of the world's population lives in coastal communities (10m or less above the sea level). Newtok's relocation process is a good model for other communities because it created a governance structure with the Newtok Planning Group that bring community, federal, state, tribal governmental and non governmental together in the relocation process to help the community by building infrastructure at the relocation site. Certainly as Larry Hartig, commissioner of Alaska department of environmental conservation declares, "We are construing the track as we go. We're trying to find the track and putting it in front of the train." The main lesson that can be learned from Newtok is that local leadership is essential because the community had to compensate the lack of lead agency. The community is serving "as both as the glue and directors of the efforts to date" (Community of Newtok and the Newtok Planning Group, 2011). It is important to engage the community in decision-making process from the start. It is not an easy task because a cultural and language gaps can exist; hence, ensuring communication is crucial. The coastal Louisiana Tribe⁹ is also facing the same situation than Alaska coastal communities. The Isle de Jean Charles was recently affected in 2012 by Hurricane Isaac and people raised their homes to adapt to land loss and the rising waters. It was observed that in the 1950s, the Isle was about 5 miles by 12 miles whereas nowadays, the land is around ¼ mile by 2 miles. This diminution is partly a result of oil and gas companies but it is also due to intense coastal erosion and saltwater intrusion. Coastal Louisiana has experienced one of the highest rates of relative sea level rise in the world, with 8 inches in the last 50 years (Koppel Maldonado, 2013). The Isle no longer has natural protection against hurricane and storms. Since 2005, the tribal community faced 6 major storms. If nothing is done, the Isle will disappear by 2050. Here again, the traditional chief is working to relocate together "those who have scattered and those who would like a communal safe haven". (Community of Newtok and the Newtok Planning Group, 2011) He explained that, "people want to come back to the community. We have to come together to ensure the land belongs to us while we move to a safe location" The community leaders pushed for relocation in 2002 through the Army Corps of Engineers, and also in 2009, but just as the Newtok community met regulatory challenges of relocating an entire community without internal and little external funding. As Julie Koppel Maldonado notes¹⁰ that after the BP disaster in 2010, representatives of Newtok, Isle de Jean Charles, and other Louisiana and Alaska

9. Grand Bayou Village, Grand Caillou/Dulac, Isle de Jean Charles and Pointe-au-Chien Indian Tribes

10. The Impact of Climate Change on Tribal Communities in the US: Displacement, Relocation, and Human Rights,

at-risk coastal communities came together through the work of an academic center and a religious congregation to develop people-to-people learning exchange, as well as advocacy through local and national social and political structures and systems. She also reveals that those communities traveled to each other's lands and communities to learn what each is experiencing and take the knowledge back as advocates on the others' behalf. The communities continue the knowledge exchanges and co-learning based on local, citizen science and traditional ecological knowledge.

Newtok not the first and not the last...

Climate change is affecting communities around the world. In Alaska, climate-induced ecological changes caused by a combination of gradual ecological processes and extreme weather events are damaging community infrastructure, threatening lives and the well being of community residents, altering the habitability of indigenous communities. Therefore, relocation is the only available solution but the current legislation such as the post-disaster recovery or hazard mitigation laws are not designed to respond to permanent displacement. Communities that want to relocate such as Newtok that was our case study are facing policy and practical challenge that hinders the process. Newtok is projected to be underwater by 2017 but in 2013, only 6 homes were built and no one has move at the new site. Newtok is currently the only Alaskan communities advancing in the relocation process. Federal agencies had declared that 11 Alaskan communities are in imminent danger. Hence, it's time for the United States of America to respond to climate-induced relocation and implement efficient policies in order to relocate rapidly threatened communities. The USA have an incredible opportunity to take the lead and create a new model of adaptive governance and a set of new institutions that can facilitate an effective transition from protection in place to community relocation that government throughout the world faced with "climigration" can implement (Bronen, 2011). ♦

BIBLIOGRAPHY

ARTICLES

- Bronen, R. 2009. Forced Migration of Alaskan Indigenous Communities Due to Climate Change: Creating a Human Rights Response In Linking Environmental Change, Migration & Social Vulnerability. A. Oliver-Smith and X. Shen, eds. Pp. 68-73. UNU Institute for Environment and Human Security. Hohenkammer, Germany.
- Bronen, R. 2011. Climate-induced community relocations: creating an adaptive governance framework based in human rights doctrine. *NYU Review of Law and Social Change* 35:356-406
- Bronen, R., and F.S. Chapin III, 2013: "Adaptive governance and institutional strategies for climate-induced community relocations in Alaska." *Proceedings of the National Academy of Sciences*, v. 110, pp. 9320-9325.
- Bronen, R. 2013. *Climate-Induced Displacement of Alaska Native Communities*, Brookings-Bern Project on Internal Displacement, 30 January 2013, available at: <http://www.refworld.org/docid/510a3f9c2.html>
- Brubaker, Michael, James Berner, Raj Chavan, and John Warren. 2011. «Climate Change and Health Effects in Northwest Alaska.» *Global Health Action* 4.0
- Cochran, P., O.H. Huntington, C. Pungowiyi, S. Tom, F.S. Chapin III, H.P. Huntington, N.G. Maynard, and S.F. Trainor. 2013. Indigenous frameworks for observing and responding to climate change in

Alaska. *Climatic Change* 117(4): DOI 10.1007/s10584-013-0735-2 .

- Koppel Maldonado, Julie, Christine Shearer, Robin Bronen, Kristina Peterson, and Heather Lazrus. "The Impact of Climate Change on Tribal Communities in the US: Displacement, Relocation, and Human Rights." *Special Issue: Climate Change and Indigenous Peoples in the United States: Impacts, Experiences and Actions* 120.3 (2013): n. pag. *Springer*. Web.
- Marino, E. (2012). The long history of environmental migration: Assessing vulnerability construction and obstacles to successful relocation in Shishmaref, Alaska. *Glob. Environ. Change*. doi:10.1016/j.gloenvcha.2011.09.016
- Petersen, R. 2012. The Difficulty Relocating Climate-Affected Communities, BAKER INSTITUTE ALASKA. Web.
- THE HARVARD PROJECT ON AMERICAN INDIAN ECONOMIC DEVELOPMENT. John F. Kennedy School of Government - Harvard University, 2010. Web.
- Shearer, Christine. *The Political Ecology of Climate Adaptation Assistance: Alaska Natives, Displacement, and Relocation*. Diss. U of California, Santa Barbara, 2012. N.p.: Journal of Political Ecology, 2012. Print.

BOOK

- Afifi, Tamer, and Jill Jäger. *Environment, Forced Migration and Social Vulnerability*. Berlin: Springer, 2010. Print.

NEWSPAPER ARTICLE:

- Goldenberg, S. «America's First Climate Refugees in Newtok, Alaska.» *The Guardian*. N.p., 13 May 2013. Web.
- Three-part series on America's first climate refugees in Newtok, Alaska.
- NPR. «Impossible Choice Faces America's First 'Climate Refugees'» *NPR*. NPR, 18 May 2013. Web.

REPORT

- Community of Newtok and the Newtok Planning Group. 2011 *Relocation Report: Newtok to Mertavik*. Rep.
- GAO, 2009. Alaska Native Village: limited progress has been made on relocating villages threatened by flooding and erosion, Government Accountability Office Washington.
- IPCC. 2014. Polar regions. IPCC WGII AR5 Chapter 28.
- Corps of Engineers. *Alaska Village Erosion Technical Assistance Program (AVETA)*. Rep. The U.S. Army Corps of Engineer, Apr. 2006. Web.
- USACE. 2009. Alaska baseline erosion assessment. *U.S. Army Corps of Engineers Study Findings and Technical Assessment Report*.
- Gregory, R., Failing, L., & Leiserowitz, A. (2006). Climate change impacts, vulnerabilities, and adaptation in Northwest Alaska (No. 06-11). Eugene: Decision Research

WEBSITE:

- www.netwokmoves.org
- Division of community and regional affairs, Newtok Planning Group
- <http://commerce.alaska.gov>

LAETITIA LESIEURE¹

Earthquake-induced internal displacement and cross-border migration on Hispaniola in 2013

Since an earthquake hit the country on January 12, 2010, two important hurricanes and a tropical storm have affected Haiti. All caused material damages as well as human casualties. All added to the harsh toll of displaced people – particularly the ones living in so-called “tent cities” in and around Port-au-Prince, the capital city of Haiti. The first floods occurred in the south of the country less than two months after the earthquake (Carroll, 2010). Hurricane Thomas hit later that year, on November 4 and 5, killing 21 people, destroying and damaging 6,340 houses, and affecting 6,610 families. Tropical storm Isaac hit on August 24 and 25 of 2012, killing 24 people, injuring 42, destroying or damaging 1,005 houses. It affected 8,189 families. Hurricane Sandy, just two months later, at the end of October 2012 killed 54 people, injured 21, destroyed 6,274 houses, and damaged another 21,427 houses. It affected 39,058 families and caused extensive damages to crops (OCHA, 2013). This type of natural disasters regularly affects Haiti, due to its vulnerable position on the hurricane belt. Four similar storms hit Haiti in 2008, for example, each causing substantial damage and casualties (See Gütermann and Schneider, 2011). Moreover, other environmental issues may aggravate the impact of such natural catastrophes. That is particularly the case of extensive deforestation and soil erosion (CIA, 2014). This timeline of events (OCHA, 2013) that followed the 2010 earthquake aggravated the living conditions of people who had already been displaced; it caused additional forced displacement, and had a great role in some people’s decision to leave the area of Port-au-Prince or the country entirely. Some people who were considering leaving the area of Port-au-Prince may also have seen the cholera outbreak, an indirect consequence of the earthquake, as the last straw and a critical factor in their decision to leave. The first case of cholera was confirmed on October 19, 2010 (OCHA, 2013). After the earthquake, urban planning and reconstruction efforts have strived to take these environmental risks into account.

Post-earthquake displacement and migration flows have been and still are complex. This is due partly to the fact that the earthquake epicentre was so close to the densely-populated urban area of Port-au-Prince, and partly to the history of Haitian migration patterns. 2010 flows did not only go out of Port-au-Prince, and 2013 flows are not limited to internally-displaced people leaving camps. Rather, post-earthquake displacement and migration flows on the island of Hispaniola are an intricate mix of forced and voluntary movement, internally or cross-border, alone or

1. The author would like to thank Alicia Sangro and Bridget Wooding.

with relatives, returning or leaving, rural or urban. In many situations, it is also difficult to know when and where the flows will end. The movements that have attracted most attention in 2013 have been a mix of positively and negatively perceived flows. On the one hand, people voluntary leaving camps or voluntary returning to Haiti – whatever the final outcome – have generally received extensive and positive media coverage. On the other hand, forced evictions and repatriations have received extensive and negative media coverage, for obvious reasons.

In the fall of 2013, a Dominican Constitutional Court ruling made international headlines and brought the challenges faced by Haitian migrants back to the forefront. Ruling 168 regards irregular migrants and their descendants in the Dominican Republic in general, and deprives them of nationality rights. This caused international outcry, although this very principle had existed in Dominican legislation and practice for several years. It also served as a reminder of the differences between internally displaced people within Haiti, and forced Haitian migrants in the Dominican Republic due to the earthquake. Bridget Wooding uses the concept of “invisibility” to describe the situation of migrants in the Dominican Republic (Wooding, 2014). They may have left their country as a result of the earthquake, but they do not benefit from a specific legal or social status; and due to the known hostility of the Dominican media towards Haitian migrants in general, most voluntarily choose to blend in with the other migrants and keep a low profile. On the other hand, internally displaced people following the earthquake in Haiti are visible, if not as individuals, at least as a group, even though this public image tends to leave aside internally displaced people who do not live in camps or in the Port-au-Prince area. Also, they benefit from international legal protection as internally displaced people. This is what Wooding calls the legal “protection gap” that separates internally displaced people in Haiti and forced Haitian migrants in the Dominican Republic (Wooding, 2014).

This discrepancy is also to be found in the data available on the topic, particularly in the case of quantitative data. The International Organization for Migration (IOM) has collected and made available a great deal of both quantitative and qualitative data about internally-displaced people (IDP) sites in and around Port-au-Prince, gathered through the Displacement Tracking Matrix (DTM) project set up in mid-2010. Camps and the people living in them or leaving them are rather closely monitored. However, as soon as we leave this urban locus, when displaced people become dispersed, as well as willingly or unwillingly invisible, collecting data is much more difficult. This is particularly the case when they cross the border, often illegally, and blend in the anonymity of large groups of Haitian migrants in cities such as Santiago de los Caballeros or Santo Domingo. Some cross-border flows that can be monitored or for which data can be obtained regards deportations by the Dominican authorities or people participating in the IOM or other Non-Governmental Organizations’ return programs.

1. INTERNAL DISPLACEMENTS IN 2013

1.1. Framework: international actors, NGOs and the Haitian State

The year 2013 has been marked by an increased involvement on the part of the Haitian government regarding the situation of internally displaced people. This represents a shift from the initial international response that received a lot of criticism partly because they did not include the government as much as they could have in the decision-making process as well as in the actual setting-up of solutions for displaced people. It is also a shift from the pre-earthquake situation in Haiti, marked by a lack of government accountability, weak institutions, and flawed or lacking public services. On the other hand, it should be acknowledged that it was difficult for the government to act and get involved right after the earthquake, as the disaster had destroyed many government buildings – including the Parliament and the presidential palace – as well

as schools and hospitals, and killed a quarter of all civil servants in Port-au-Prince (Sherwood, 2014). One of the major advances in the direction of increased government involvement has been the announcement, in October 2013, of a National Housing and Habitat Policy. The *Unité de Construction de Logements et de Bâtiments Publics* (UCLBP), created in 2011, is behind the project, in collaboration with international organizations and other State committees. The project looks at questions of funding, coordination of the different actors involved, and risk assessment, among other points. It aims at providing Haitian people with decent, affordable housing in urban settings (Joachim, 2013). This project goes to show the government's desire to extend its reach beyond Port-au-Prince on a national scale, and address the much criticized lack of urban planning, as urban population went from 40% of the total Haitian population in 2003 to 48% in 2013 (Joachim, 2013). The government's involvement in the issue of housing was also visible through the UCLBP participation in the World Urban Forum in Medellín, Colombia at the beginning of April 2014. Finally the government also took the initiative in other fields, such as a "Roadmap for earthquake risk reduction in Haiti" which includes awareness-raising among the population and professional training to prevent and respond to this type of disaster. The Haitian government also collaborated with the Dominican Republic on a "Green Border" project, through which 400 hectares of land have been reforested "in an effort to make the country more resilient to natural disasters" (UNDP, 2014). This shift is crucial in a context of decreasing international funding. Although it may seem reasonable that international funding should have diminished since 2011, what is more worrying is that the percentage of actual funding compared to required funding has also decreased. In 2010, 73.3% of the required funding was actually provided; this percentage fell to 56% in 2011, 46% in 2012, and 40% in 2013 (OCHA, 2013).

"Supporting Durable Solutions to Displacement" is an analysis of the work of international organizations, local NGOs, and the Haitian government. It compares their efforts to the Inter-Agency Standing Committee's (IASC) "Framework on durable solutions for internally displaced persons." Its authors draw a mixed balance of their successes and failures. One of the main challenges for any actor in Haiti is cooperation and coordination. Three reasons the authors give for this are the frequent rotation in staff, the lack of accountability mechanisms, and wariness between actors coming from different backgrounds and approaches, with varying skills, experience and capacity. More recently, international actors have strived to better include the Haitian government at a national level, as well as Haitian organizations and the internally displaced people themselves, for example in camp settings. They have set up discussion groups and have made an effort to better inform internally displaced people about their options.

These recent changes are limited, however. Bryant Harris for Al-Jazeera has said that "even though the United States offered USD3 billion in aid for Haiti after the earthquake, less than one percent of the USD1.3 billion in obligated USAID funds – money designated specifically for Haitian recovery efforts – has gone directly to local Haitian groups." According to Jake Johnson of the Centre for Economic and Policy Research (CEPR) "When so little of the funding reaches Haitians themselves, it takes them out of the decision-making process and ensures that aid programmes are not actually responsive to the needs of people on the ground." The lack of transparency and controversies about the use of international funding has been a source of disappointment (Harris, 2014). With that in mind, the US House of Representatives passed the "Assessing Progress in Haiti" Act on December 12, 2013. It has yet to be approved by Congress (Institute for Justice and Democracy in Haiti, 2013). Moreover, there is still progress to be made in terms of cooperation between international actors themselves. According to the authors of "Supporting Durable Solutions to Displacement," there is still a tension today between humanitarian and development actors, because of their different approaches to displacement and the needs of the country

following the earthquake. Development actors focus on reconstruction, more than on displacement itself. The authors argue that these approaches could actually be reconciled and would result in more efficient responses to the actual needs of the internally displaced. Another difficulty for the coordination of international actors has to do with a possible misunderstanding of the situation. While the situation in Haiti is complex, due to the fact that the actors have to deal with a “mega-disaster” in an urban location in a context of extreme levels of poverty, leaving the camps is not equivalent to the end of displacement. Moreover, displaced people face challenges that are specific to their situation and that are different from the challenges of other people who face poverty but have not been displaced, or who have returned to their home since 2010. Finally, these different types of organizations have different objectives that do not always match internally displaced people’s view of their own needs. For instance, many people living in camps actually expressed the opinion that employment should be a priority, even higher up on the list than a solution to displacement. There is also a tension between those working on emergency response and the immediate needs of displaced people, and those working on long-term projects (Sherwood, 2014).

1.2. Internally displaced people in and around Port-au-Prince: the situation in 2013

January 2014 has been an opportunity for many to draw a balance four years after the earthquake. Journalists had mixed feelings about the slow decrease in the number of people living in internally displaced people sites in and around Port-au-Prince (Huffington Post, author unknown, 2014). Port-au-Prince and the surrounding communes have gone from as much as 1.5 million internally displaced persons (Sherwood, 2014) to 146,446 in December 2013, and from 1,555 internally displaced people sites at the highest to 271 sites in December 2013. This represents an 89% decrease in the number of internally displaced persons living in sites (CCCM, 2014). There is no consensus on these estimates. According to other sources, there were still between 170,000 and 200,000 internally displaced persons in January 2014 (Collectif haïtien pour le droit au logement, in RFI, 2014). Opinions on the progress of reconstruction are mixed too (Institute for Justice and Democracy in Haiti, 2013 / RFI). Some are pessimistic and criticize the lack of efficiency of the reconstruction process. However, Patricia Weiss Fagan in “Receiving Haitian migrants in the context of the 2010 earthquake,” argues that “there is evidence that recovery is proceeding – at least insofar as the repair and replacement of damaged structures and roads.” Moreover, it is difficult to assess this progress because of the pre-existing challenges in this field. For instance, according to the authors of “Supporting durable solutions...” Haiti lacked around 300,000 housing units before the earthquake. To that number has to be added around 105,000 houses destroyed and more than 188,000 houses severely damaged by the earthquake. They also note that the challenges of reconstruction were highly underestimated.

International organizations have focused most of their attention and funding on Port-au-Prince and on camps (Sherwood, 2014). The so-called “tent cities” are the first thing coming to mind when thinking about internal displacement following the earthquake. One the reason for this is that at the highest, almost half of the Port-au-Prince population lived in camps – most of them in the same neighbourhood or commune where they lived before the earthquake. However, it has had negative consequences on the Haitian countryside and on the people who initially decided to leave Port-au-Prince and move in with some extended family or host family outside of the Port-au-Prince area. The lack of resources in rural Haiti combined with the lack of attention on the part of international organizations meant that these areas were not able to cope with the arrival of the internally displaced, and could give them no employment opportunities or relief. Moreover, as the word spread quickly that all the help was to be found in Port-au-Prince, many decided to return to try and benefit

from it (Weiss, 2013). The issue then was that these “large numbers of residents who ... returned there” did so “not because the city was (or is) ready to receive them. Rather, it was because other options inside and outside of Haiti failed to resolve their plight,” and this “added to the burdens of the aid givers” (Weiss, 2013, p.5).

Internally displaced people living in camps in Port-au-Prince have often not seen their living conditions improve in 2013. Journalists and human rights actors often emphasize the poor sanitary conditions in the camps. In the case of the 29 remaining camps in the administrative commune of Port-au-Prince in December 2013, the IOM, as part of the Displacement Tracking Matrix project, has noted that bathing is only present in 4 camps, water provision in 4, and waste management in 2 (CCCM, 2014). Security has also been a big topic for 2013, as displacement and the very fact of living in camps – lacking basics such as “proper lighting, or having to venture out alone to find clean water” (Chen, 2014) – has increased vulnerability. The authors of “Supporting durable solutions...” have mentioned that armed gangs have sometimes attacked camps or kidnapped administrators. Moreover, there have been many cases of rape and sexual violence in the camps. In November 2013, IOM announced that it had received USD 600,000 from the US State Department’s Bureau for Population, Refugees and Migration “to provide immediate relief to victims of sexual and gender based violence” in camps. The IOM strategy includes urgent medical assistance, referrals, relocation support, awareness-raising, and working with local actors for prevention. Between January and November 2013, 325 such cases have been reported to the IOM Haiti Protection Unit (Sangro, 2013b). Part of this issue has to do with what has been called “survival sex” or “transactional sex,” in cases when “women and teenage girls have no other options but to sell their bodies to make a little bit of money to provide for themselves and their families” (Legatis, 2012). KOFAVIV (Commission of Women Victims for Victims) is a local organization established in 2004 and working with rape survivors from camps (KOFAVIV).

There are two main ways of leaving a refugee camp in 2013: get a rental subsidy, and be evicted. The latter is an issue that has many worried. On 1,555 internally displaced people sites open in July of 2010, 178 have been closed since then due to forced evictions. Armed gangs or individuals claiming they own the land on which the camp has been set up carry out these evictions, sometimes with the help of the local police. The risk of eviction is higher in camps that have been set up spontaneously and/or on private land. IOM considers that on the 271 sites still open in February 2014, there are 102 camps, that is to say 38%, risking evictions. This represents 57,948 individuals that is 40% of all internally displaced people in the Port-au-Prince area. There are not many options available to internally displaced persons who have been evicted from the site where they used to live. Some move to another site, some try to get help from their community or relatives. To respond to that issue, IOM has targeted a few camps specifically through their return program, to help people leave before they are evicted. 41 camps are being specifically targeted for this program. The majority of the population of Port-au-Prince and its surrounding area were renters before the earthquake, and it was determined that more than 75% of the remaining internally displaced people in sites would be renters after leaving the camps. For that reason rental subsidy has become the second most used housing help after transit shelters. In 2013, 90.5% of families who have received some form of help to leave the camp they lived in have actually received rental subsidies (Sherwood, 2014). Several return programs exist, some completed with other forms of financial help such as microcredit to open a small business. Some have also been set up in coordination with development actors and their reconstruction efforts. Rental subsidies have been criticized, however, because many people could not afford their new housing once the subsidy – that generally lasts for a year – came to an end (Sherwood, 2014). Amnesty also noted that the USD500 per year that were given as part of the 16/6 government project were not sufficient to afford decent lodging for a whole family.

Moreover, the program does not include assistance to find said lodging. The 16/6 is an initiative launched in 2011, in collaboration with IOM, PNUD and the International Labour Organization, with the purpose of encouraging families to voluntarily leave camps. Six camps were targeted and the people were to find a place to rent in one of 16 neighbourhoods. Additional camps were targeted in the following years (Amnesty, author unknown, 2013). 2013 was an opportunity to draw a balance of such projects, and the outcome was often mixed, as the aid had run out by then and the solution proved unsustainable in the long run. Some also fear that a uniform subsidy does not take into account individual needs and vulnerability. The authors of "Supporting durable solutions..." argue that closing the camps should not be considered as a long-term objective or an accomplishment in and of itself.

1.3. Internally displaced persons agency in Haiti

An early criticism against the way most international organizations worked in Haiti regarded the lack of mechanisms to try and include internally displaced people themselves in the decision-making process and use their opinions for needs assessment. This has changed a little. In many cases, the establishment of a rental subsidy program also meant that the organization in charge took the responsibility of clearly informing and consulting with the targeted population of their options. The authors of "Supporting durable solutions..." mention that this was often done in person, which gave internally displaced people the opportunity to discuss or ask for clarifications. These existing processes have an important role during the transition, when people decide to leave the camp they live in voluntarily.

The majority of displaced people have looked for their own solutions to displacement. According to the Displacement Tracking Matrix data, 246,000 families have left the camps spontaneously since 2010. 795 camps have closed after their inhabitants have left by their own means. This often equates to relying on one's own economic resources, but also on kinship and social networks, as well as on one's community, for the people who remained in the same commune and/or neighbourhood after the displacement. The earthquake has sometimes been the source of a renewed sense of solidarity within displaced and non-displaced groups. Some communities have organized themselves after the earthquake and taken on a new and bigger role (Sherwood, 2014). The authors of "Supporting durable solutions..." mention, for instance, collective strategies for the guarantee of security: such as community patrols, interrogation of newly arrived people, denunciation of sexual violence, and creation of community ID cards. Communities have also helped internally displaced people financially to get back on their feet.

Solutions to displacement do not always involve return or further displacement. Recently, international workers and local NGOs have been more inclined to consider the possibility of camp regularization and integration. This refers to the transition of an IDP site from camp to regular neighbourhood, integrated in the host community, thanks to the government granting public land. This, however, is a whole process including assessing environmental risks of the location, deciding how to divide the land between the inhabitants, installing sanitary facilities and other basic services such as electricity and water. However, in a context where available urban land is more and more difficult to find, international organizations are increasingly open to this solution.

The main challenge for anyone trying to make sense of the situation of internally displaced people in Haiti in 2013 is to understand that closing the camps cannot be a long-term goal, and that further movements have to be monitored, as the situation outside camps brings new challenges. Moreover, coordination between international organizations, local NGOs, the government and the people themselves, is crucial to better assess the needs of the displaced and provide an optimal solution.

2. CROSS-BORDER MOVEMENTS IN 2013

2.1. Traditional migration patterns in Hispaniola

The lack of quantitative, if not qualitative data, on Haitian people who crossed the border following and as a result of the earthquake is due to two elements. On the one hand, there is no legal framework protecting forced displaced people outside of their country of origin due to environmental disasters. On the other, because of the tense relationship between Haiti and the Dominican Republic, particularly on the topic of migration, many of the people who left Haiti to cross the border have chosen to cross illegally and remain invisible. They would rather “be treated as any other migrant,” despite the fact that the context of their departure has been very different (Wooding, 2014). This is also due to fears of expulsion, particularly for people who have crossed the border illegally. To better understand the position that these displaced people find themselves in, in 2013, it would be interesting to take a look at the traditional patterns of migration towards the Dominican Republic previous to the earthquake, as this history now frames the perception as well as the daily lives of the migrants.

The 1970s and 1980s have seen the development of an extensive literature on Haitian sugar-cane cutters in the Dominican Republic. This research, which continued into the 2000s, focused on the violations of the migrants’ fundamental rights, mostly by sugar companies. It also denounced the social isolation as well as the discrimination that these communities suffered from, because they were poor and uneducated, and because of the colour of their skin. Migration was mainly seen as a result of the economic hardships that plagued Haiti, and many authors underlined the irony of the situation of these migrants who had left poverty only to find themselves in a similar economic situation again on the other side of the border (Ferguson, 2003). However, migration flows from Haiti have not always been caused by economic challenges. Haitians have also left their country for political reasons and as a result of political violence throughout the 20th century, as the government underwent a series of coups and dictatorships. The 1991 coup d’état, for instance, is often cited as having caused the forced migration of tens of thousands of Haitians across the border. This move may be temporary or not. According to Bridget Wooding, “beyond the labour migration which has been known for a century, the Dominican Republic serves as a temporary and informal refuge at times of political crisis or important natural disasters” (Wooding, 2011). This is crucial to understand the movements that followed the earthquake. However, the usual response of the Dominican government – as well as other receiving States – should also be taken into account: these forced migrants often remain unrecognized by the authorities, and expulsions have continued to take place regardless of the personal history of the migrants (Wooding, 2011).

There are no reliable census figures on the number of Haitian migrants living in the Dominican Republic, as most Haitian migrants in the Dominican Republic are undocumented and cross the border *anbal fil* (literally “under the wire,” that is illegally) (Wooding, 2013). According to the Dominican *Oficina Nacional de Estadísticas* (ONE), there were a little over 450,000 Haitians in the country in 2012, (Centro Bonó, author unknown, 2013) but other estimates have gone as high as 1.5 million (Ferguson, 2003). The Haitian community in the Dominican Republic is far from homogenous. It is a mix of involuntary and voluntary, long term and short term, documented and undocumented, rural and urban migrants and their descendants born in the Dominican Republic. They work in tourism, agriculture, construction, manufacturing, and domestic work. They are often perceived as poor, and it is true that a great part of Haitian intellectuals and elite have chosen to leave the island altogether (Ferguson, 2003). Some but not all of these migrants also maintain links with Haiti. These cross-border kinship and social networks have become all the more crucial after the earthquake. John Salt considers the border an economic rather than a legal obstacle, as many people – from smugglers to Dominican officials – have helped or closed their

eyes on Haitians crossing the border undocumented, reflecting the many vested economic interests in illegal Haitian migration. These economic interests in undocumented immigration have not stopped the Dominican authorities from organizing day-to-day individual and group expulsions as well as occasional mass expulsions. One such instance of large-scale forced expulsion took place under Balaguer in 1991. Behind this type of operation is often the perception that Haitians are a threat to Dominican culture and identity. An extreme example of that prejudice took place during the Trujillo era: in 1937, the Dominican authorities perpetrated a massacre on the Dominican side of the border, killing around 15,000 Haitians. These events are still present in the Dominican collective imaginary and are part of the history of Haitian presence in the Dominican Republic. This history has framed all cross-border movement to the Dominican Republic, including that of people displaced by the 2010 earthquake. According to the IOM, 200,000 Haitian people have crossed the border following the earthquake. The Dominican government had a positive reaction to the immediate emergency and gravity of the situation, but this changed after a few months.

2.2. Haitian earthquake migrants in the Dominican Republic in 2013

In several papers, Bridget Wooding, director of the OBMICA think tank, has underlined her concern about the lack of protection for displaced people who cross the border as a result of a natural disaster in the context of the 2010 earthquake in Haiti. After the first flow of people seeking emergency health care crossed the border, benefiting from the Dominican “open borders” policy, cross-border movements went back to what they used to be: on the one hand, people relying on their kinship and social networks to cross and get back on their feet on the other side of the border, or relying on smugglers; on the other, expulsions organized by the Dominican authorities. Thus, these people, who faced specific challenges due to the earthquake, not only could not benefit from any international law or guidelines or framework to protect them, but became undistinguishable from “regular” migrants. They became the latest wave of migration in the history of Haitian migration to the Dominican Republic, with no special status. No national legislation was put in place in the Dominican Republic to create a protected status for this specific type of migrants, perhaps partly because they were so difficult to distinguish from other migrants. This was, to a certain extent, voluntary. Aware of the hostility that Haitians migrants can be met with in the Dominican Republic, many “prefer being treated as any other migrant” and keep a low profile (Wooding, 2014). They were also difficult to identify because they blended in among other migrant communities in urban settings, for example in Santiago de los Caballeros or Santo Domingo, the two biggest cities of the Dominican Republic, home to important Haitian communities.

It would be a mistake to think that the movement of people displaced because of the earthquake has come to a halt or has decreased in 2013. Expulsions and returns account for a very important part of the flows, but displaced people also move for other reasons, mainly in search of more economic opportunities. For that reason, they leave the countryside or the small towns along the Dominican side of the border that they had first settled in, and move Santo Domingo. Others have decided to leave the island entirely, often in hope of reaching Puerto Rico or, more recently, Brazil, where it is said that one can get a work visa for up to five years rather easily (Wooding 2014). Unfortunately, there is little to no data available on the status and situation of Haitians who are being forcibly deported back to Haiti. For that reason, it is particularly difficult to evaluate the possible number of earthquake migrants that have been affected. The phenomenon of expulsion existed before the earthquake and after an approximately six-month break directly following the earthquake, expulsions started again, possibly at an even higher rate than before January 2010. According to the Dominican *Dirección General de Migración* (DGM), which organizes and supervises

the deportations, 8,553 deportations took place in 2009, 3,005 in 2010, and 40,071 in 2011 (Centro Bonó, author unknown, 2013). The Dominican army has also declared it had deported 47,700 Haitians between August 2012 and September 2013. The Jesuit Refugee Service as well as the *Centro Bonó* have reported and denounced several collective deportations that took place in 2013. They have pointed to the fundamental rights abuses that occur during transport and in detention centres. In its “*Observatorio de Derechos Humanos*” publication concerning January to September 2013, the Centro Bonó asserted that the migratory status of the migrants was not taken into account during arbitrary round-ups by the DGM. This means that some people with valid documents and even people of Dominican nationality have sometimes been taken for deportation. This underlines the racist and discriminatory practice of the DGM and the army or police that cooperate with them. Often, the migrants are arrested while going to work and do not get the opportunity to take their belongings with them, to contact anybody to tell them of their whereabouts, or to ask for legal advice and defence. The necessity for due process and the respect of the migrants’ fundamental rights during the process of deportation is inscribed in the Dominican constitution and migration law. Moreover, in October 2012, the Inter-American Court of Human Rights, in the case *Nedega Dorzema et al. vs. the Dominican Republic* declared the prohibition of collective expulsions and acknowledged the existence of a context of discrimination against Haitian people within the Dominican Republic. In March 2013, the United Nations Committee on the Elimination of Racial Discrimination expressed its concern about mass deportations and their racist motivation in the Dominican Republic (Centro Bonó, author unknown, 2013).

The irony here is that the DGM not only has a big role in deportations, but also works in coordination with the IOM in the context of their Assisted Voluntary Return and Reintegration (AVRR) program, funded by the US Department of State Bureau of Population, Refugees and Migration (PRM) (Sangro, 2013b). This program was launched in September 2010. With the support of several local NGOs, the IOM identifies and registers people who wish to enter the program in various locations of the Dominican Republic. They describe as follows the later stages of their work through the program:

“On the scheduled day for return, IOM ensures that the returnees are accompanied by Creole-speaking staff on every stage of the process, which includes escort and assistance in clearing customs and border controls, and transport to their final destination in Haiti.

IOM also issues beneficiary identification cards to be used in accessing reintegration services in Haiti; a stipend of USD 50 per beneficiary for initial costs; a stipend of USD 65 per child given to every mother to help with child maintenance; and hygiene items including soap and chlorine for prevention of cholera and other waterborne diseases.

Once back home, during the reintegration stage, returnees receive access to business training and capital of USD 200 per adult to start a micro-enterprise. (Sums vary according to the number of adults and/or children in each household.) They can also access an income generation scheme supported by IOM and operated by IOM counterparts. Follow-up is carried out by IOM partner NGOs and/or IOM staff.

On behalf of IOM, NGO partners also deliver education grants of up to USD 150 per school-age child, which is paid directly to schools” (Sangro, 2013).

The idea for this program predates the earthquake. However, it is only after the earthquake, when the international community turned its attention toward the island, that the program was given sufficient funding and was launched. At first, it was specifically aimed at Haitian people who had been displaced by the earthquake. After a few months, though, the IOM opened the program to other Haitian migrants wishing to return. The migrants have to show that they are in a vulnerable situation, and that they have relatives ready to welcome them back in Haiti, so as to avoid

fraud – mainly people who take the money and go to Haiti but then come back to the Dominican Republic. Migrants also receive a professional training in order to help them set up a small business in Haiti. A high percentage of people having benefitted from the program have said they were satisfied with the help they had received and their new situation (Sangro, 2014).

Women and children are two categories of Haitian displaced people and migrants that are considered as particularly at risk. Children and women more and more, receive international as well as national attention (Wooding, 2013). Some children became orphans with the earthquake. Bridget Wooding and Allison J. Petrozziello focused on the topic of women displaced by the earthquake in an article entitled “New Challenges for the Realisation of Migrants’ Rights Following the Haiti 2010 Earthquake: Haitian Women on the Borderlands.” The 2010 earthquake motivated some Haitian women to cross the border in hope of better employment and education opportunities, as well as improved quality of life. However, it also increased their vulnerability. Many of these women became heads of households following the earthquake, and as a result felt increasing pressure to provide and care for their family. On the other hand, the situation for Haitian migrants quickly worsened after the initial positive reaction on the part of the Dominican authorities. The cholera outbreak increased Dominicans’ wariness of newly arrived Haitian migrants. Moreover, the hostility of the Dominican authorities and the rise in repatriation caused these women to choose to enter the country *anba fil*. That choice often implies an increased risk of trafficking, physical violence and/or humiliation, as the women and girls resort to *buscones* (informal scouts) and sometimes smugglers to help them cross. They also face military and police checkpoints on the other side of the border where they often have to bribe the agents to let them go. Their first destination is generally a Dominican town close to the border, where they become – forcibly or not – domestic workers, vendors or sex workers. This work is always informal and unregulated and may lead to abuses by employers. They often rely on social and kinship networks and stay in host or foster houses, with friends or extended family. These networks are crucial to ease the migration, and help provide information, financial aid, and housing. The Population Council’s “Girls on the Move” also reminds us that many of the women and girls who have chosen or been constrained to cross the border following the earthquake had a history of migration within Haiti, particularly from rural to urban centres, and to the Dominican Republic before 2010: “Mobility was a way of life” for them. (Temin, 2013 p.38) The ultimate goal for most of these migrants, however, is often to reach Santo Domingo, where they believe they will have access to better opportunities. Children face similar challenges when crossing the border, and there have been several cases of children trafficking across the border in 2013. Between 2010 and 2013, IOM has helped more than 20 children return to Haiti. In May 2013, the Dominican authorities rescued a group of 54 children who had been victims of trafficking and were being forced to beg on the streets of Santo Domingo (Sangro, 2013a). IOM cooperates with several other agencies, including the Dominican CONANI (*Consejo Nacional para la Niñez y la Adolescencia*), to fight trafficking.

The experiences of women and children crossing the border, whether it is forced or voluntary, is also a symptom of a very frequent phenomenon among displaced families: separation. Some parents cannot take care of their children anymore and send them to live on their own or with relatives. Some families decide to send the breadwinner somewhere he may have access to better economic opportunities and send money back home. This strategy is not new among Haitian migrants and should be taken into account when considering the displacement and migration flows.

2.3. The new visibility of Haitians in the Dominican Republic

In January 2010, just a few weeks after the earthquake, the new Dominican Constitution was formally adopted. In it, article 18 limits the right to Dominican

nationality. This had two consequences: it prevented any child of illegal immigrant born in the country after 2010 from being automatically granted Dominican nationality according to the principle of *jus soli*; it effectively stripped descendants of illegal immigrants born in the Dominican Republic between 1929 and 2010 from their Dominican nationality, according to the retroactive dimension of the article. This was not a novelty. It followed a 2004 migration law (285-04) that denied Dominican nationality to children born in the country of “non-resident” parents. People without proper documentation, that is to say hundreds of thousands of Haitian migrants in the Dominican Republic, were considered “non-resident.” Also, since 2007, the *junta central electoral* has begun to apply the law retroactively and refused to issue or renew identity documents to people who could not prove the legal residency of their parents, even though they had been born in the Dominican Republic and some were in possession of their birth certificates. As people displaced by the earthquake do not benefit from a special status, it will affect them too – or at least those who plan to remain permanently in the Dominican Republic (OBMICA, author unknown, 2013). In September 2013, the Constitutional Court adopted the infamous sentence 168, according to which article 18 of the new Constitution was valid. This caused an international outcry among NGOs, the diaspora and foreign governments such as the United States (Wooding, 2014). The ruling attracted international attention on the situation of Haitian migrants in the Dominican Republic once more. Several actors – mainly the US and CARICOM – have since then put pressure on the Dominican government to set up the regularization and naturalization plan that they have announced. The government, however, has yet to present this regularization and naturalization project. It was announced for February 2014, but has been postponed to June 2014 (Wooding, 2014).

Finally, 2013 has also seen a rise in the visibility and numbers of civil society organizations claiming fundamental rights for migrants and their descendants. There have been several protests in the year 2013 against the ruling, inside the Dominican Republic and out. The younger generation seems to have mobilized, particularly descendants of Haitian migrants born in the Dominican Republic (Giaconda, 2014).

3. CONCLUSION

January 2014 marked the fourth anniversary of the earthquake in Haiti. As was the case each year since 2010, the month of January also prompted both the media, civil society and human rights actors to draw a balance of the situation of internally displaced people and migrants that have been forced to leave their home after the earthquake. This issue is still relevant in 2014. Last year has been marked by several events that have brought the situation of Haitian migrants to the front page once again. Sentence 168 should serve to remind the international community of the discrepancy between internally-displaced inside Haiti and the people who crossed the border as a result of the earthquake, and the legal “protection gap” that separates them. (Wooding, 2011). ♦

BIBLIOGRAPHY

- Author Unknown. 2013. 'Nulle Part Où Aller': Expulsions Forcées Dans les Camps pour Personnes Déplacées d'Haïti. London: Amnesty International. Found under: <http://www.amnesty.org/fr/library/asset/AMR36/001/2013/fr/399c4069-61d1-4106-b3eb-1ac7aec3aca4/amr360012013fr.pdf>
- Author Unknown. 2013. "Assessing Progress in Haiti Act Passes the House." Institute for Justice & Democracy in Haiti, <http://www.ijdh.org/2013/12/topics/law-justice/assessing-progress-in-haiti-act-passes-the-house/#.U2ezuaUuOwo> (consulted on July 24, 2014)
- Author Unknown. 2013. "Haïti: l'Immense Gâchis de la Reconstruction." Radio France Internationale (RFI), <http://www.rfi.fr/ameriques/20140112-haiti-reconstruction-seisme-secouse-gachis-economie-pauvrete/> (consulted on July 24, 2014)
- Author Unknown. 2013. "Dominican Republic Forced Repatriation to Haiti." Jesuit Refugee Service, http://jrsusa.org/campaign_detail?PTN=PROMO-20100903091822&TN=PROJE-CT-20130517011112 (consulted on July 24, 2014)
- Author Unknown. 2013. *Qué Es El Centro de Detencion de Haina?* Santo Domingo: Observatorio de Derechos Humanos - Centro Bonó. <http://bono.org.do/wp-content/uploads/2014/02/ODDHH-No-15-VERSION-FINAL-.pdf> (consulted on July 24, 2014)
- Author Unknown. 2013. *Submission to the Committee on the Elimination of Discrimination against Women: Review of the Dominican Republic.* Observatorio Migrantes del Caribe (OBMICA) and Open Society Justice Initiative. <http://www.obmica.org/images/Publicaciones/Informes/DR%20CEDAW%20submission%20OSJI%20OBMICA%20June%202013%20final.pdf> (consulted on July 24, 2014)
- Author Unknown. 2014. "Quatre Ans Après le Tremblement de Terre, Haïti Panse Encore ses Blessures." In *Huffington Post - Québec*, http://quebec.huffingtonpost.ca/2014/01/12/tremblement-de-terre-haiti-quatrieme-anniversaire_n_4583435.html (consulted on July 24, 2014)
- Author Unknown. 2014. "Reconstruction's Housing Projects Still Plagued with Problems Four Years after the Earthquake." Center for Research on Globalization, <http://www.globalresearch.ca/haiti-reconstructions-housing-projects-still-plagued-with-problems-four-years-after-the-earthquake/5364749> (consulted on July 24, 2014)
- Carroll, Rory. 2010. "Quake-Torn Haiti Hit by Floods." In *Guardian*, <http://www.theguardian.com/world/2010/mar/01/quake-haiti-floods> (consulted on July 24, 2014)
- Chen, Michelle. 2014. "Haiti's Women Need More Than a Trickle of Aid Money." In *Nation*, <http://www.thenation.com/article/177867/haitis-women-need-more-trickle-aid-money#> (consulted on July 24, 2014)
- Central Intelligence Agency [CIA]. 2014. "Haiti." The World Factbook, <https://www.cia.gov/library/publications/the-world-factbook/geos/ha.html> (consulted on July 24, 2014)
- CCCM. 2014. Displacement Tracking Matrix (DTM) v2.0. Reports (from January 2011 to December 2013), <http://iomhaitidataportal.info/dtm/index2.aspx> (consulted on July 24, 2014)
- Ferguson, James. 2003. *Migration in the Caribbean: Haiti, the Dominican Republic and Beyond.* London: Minority Rights Group International. <http://www.oas.org/atip/regional%20reports/migrationinthecaribbean.pdf> (consulted on July 24, 2014)
- Fumagalli, Maria Cristina. 2013. Hispaniola after the Earthquake: Confronting the Fault Lines. *Bulletin of Latin American Research* 32 (No.4): 391-393.
- Gioconda, Pamela. 2014. "Descendientes de Haitianos Afectados por Sentencia del TC Protestan Frente al Palacio Nacional." In *Listin Diario*. <http://listindiario.com/la-republica/2014/4/8/317573/Descendientes-de-haitianos-afectados-por-sentencia-del-TC-protestan-frente> (consulted on July 24, 2014)
- Gonsalves, Ralph. 2014. "Caricom Pide a Medina el Proyecto de Ley Prometido Sobre Hijos de Haitianos." In *Listin Diario*. <http://www.listindiario.com/las-mundiales/2014/3/12/314050/Caricom-pide-a-Medina-el-proyecto-de-ley-prometido-sobre-hijos-de-haitianos> (consulted on July 24, 2014)
- Gütermann, Nikola and Eve Schneider. 2011. The Earthquake in Haiti. *The State of Environmental Migration* 07/11: 39-48.
- Harris, Bryant. 2014. "Aid Funds Still Unaccounted for in Haiti." In *Al Jazeera*. <http://www.aljazeera.com/indepth/features/2014/01/aid-funds-still-unaccounted-haiti-20141119479591650.html> (consulted on July 24, 2014)
- Institute for Justice and Democracy in Haiti, <http://www.ijdh.org/> (consulted on July 24, 2014).
- Joachim, Dieudonné. 2013. "Une Politique Nationale Pour Dynamiser le Logement et l'Habitat." In *Nouvelliste*. Found under: <http://www.lenouvelliste.com/lenouvelliste/article/122533>
- Kristensen, Kare and Bridget Wooding. 2013. *Haiti/Dominican Republic: Upholding the rights of Immigrants and Their Descendants.* Oslo: NOREF Norwegian Peacebuilding Resource Center. http://www.peacebuilding.no/var/ezflow_site/storage/original/application/273b4770daf48a18c60d724a641fo470.pdf (consulted on July 24, 2014)
- Lall, Rashmee Roshan. 2014. "Plans for Reconstruction in Haiti are Succeeding." In *Guardian*. <http://www.ijdh.org/2014/01/topics/housing/port-au-prince-collision-of-ideals-and-aid-have-yoked-progress/> (consulted on July 24, 2014)
- Lanzoni, Ilaria. 2013. "US Fund Aid to Victims of Sexual Violence in Haiti Camps." International Organization

- for Migration. <http://www.iom.int/cms/en/sites/iom/home/news-and-views/press-briefing-notes/pbn-2013/pbn-listing/us-funds-aid-to-victims-of-sexua.html> (consulted on July 24, 2014)
- Leak, Andrew. 2013. A Vain Fascination: Writing from and About Haiti After the Earthquake. *Bulletin of Latin American Research* 32 (No. 4): 394-406.
 - Legatis, Rousbeh. 2012. "Q&A: Group Founded by Rape Survivors Lifts Up Haitian Women." In *InterPress Service*. <http://www.ipsnews.net/2012/03/qa-group-founded-by-rape-survivors-lifts-up-haitian-women/> (consulted on July 24, 2014)
 - Office for the Coordination of Humanitarian Affairs (OCHA). 2013. "HAITI: Humanitarian Funding (as of 04 September 2013)." <http://reliefweb.int/sites/reliefweb.int/files/resources/Haiti%20humanitarian%20funding%20EN.pdf> (consulted on July 24, 2014)
 - Sangro, Alicia. 2013a. "Haitian Child Victims of Trafficking in Dominican Republic Receive Assistance." International Organization for Migration (IOM). <http://www.iom.int/cms/en/sites/iom/home/news-and-views/press-briefing-notes/pbn-2013/pbn-listing/haitian-child-victims-of-traffic.html> (consulted on July 24, 2014)
 - Sangro, Alicia. 2013b. "Haitians in the Dominican Republic Helped to Return Home Voluntarily From Environmentally At Risk Areas." International Organization for Migration (IOM). <http://www.iom.int/cms/en/sites/iom/home/news-and-views/press-briefing-notes/pbn-2013/pbn-listing/haitians-in-the-dominican-republ.html> (consulted on July 24, 2014)
 - Interview with Alicia Sangro, International Organization for Migration technical cooperation programme coordinator in Santo Domingo (Dominican Republic), conducted on 15 April 2014.
 - Schüler, Stefanie. 2014. "Haïti, Quatre Après le Séisme." In *Radio France Internationale (RFI)*. <http://www.rfi.fr/ameriques/20140110-haiti-quatre-ans-apres-le-seisme-port-au-prince/> (consulted on July 24, 2014)
 - Sherwood, Angela et al. 2014. "Supporting Durable Solutions to Urban, Post-Disaster Displacement: Challenges and Opportunities in Haiti." Brookings and IOM. <http://www.brookings.edu/-/media/Research/Files/Reports/2014/02/07%20haiti%20displacement/Supporting%20Durable%20Solutions%20to%20DisplacementHaiti%20French.pdf> (consulted on July 24, 2014)
 - Temin, Miriam et al. 2013. *Girls on the Move: Adolescent Girls & Migration in the Developing World*. New York: Population Council. http://www.popcouncil.org/uploads/pdfs/2013PGY_GirlsOnTheMove.pdf (consulted on July 24, 2014)
 - UCLBP, E-Shelter and CCCM Cluster. Factsheets (from 2013 and 2014), <http://www.eshelter-cccmhaiti.info/jl/index.php> (consulted on July 24, 2014)
 - United Nations Development Programme [UNDP]. 2014. "Rebuilding Haiti." http://www.undp.org/content/undp/en/home/ourwork/crisispreventionandrecovery/projects_initiatives/crisis_in_haiti/ (consulted on July 24, 2014)
 - Weiss Fagen, Patricia. 2013. *Receiving Haitian Migrants in the Context of the 2010 Earthquake*. The Nansen Initiative. <http://www.nanseninitiative.org/sites/default/files/Fagan%20Haiti%20Case%20Study%203%20December%202013.pdf> (consulted on July 24, 2014)
 - Wooding, Bridget and Allison J. Petrozziello. 2013. New Challenges for the Realisation of Migrants' Rights Following the Haiti 2010 Earthquake: Haitian Women on the Borderlands. *Bulletin of Latin American Research* 32 (No.4): 407-420.
 - Wooding, Bridget. 2011. *Forced Displacement, Humanitarian Action and International Migration: Fresh Challenges Following the Haiti Earthquake*. (unpublished) United Nations Refugee Agency (UNHCR).
 - Interview with Bridget Wooding, Director at Observatorio Migrantes del Caribe (OBMICA), conducted on 9 April 2014.

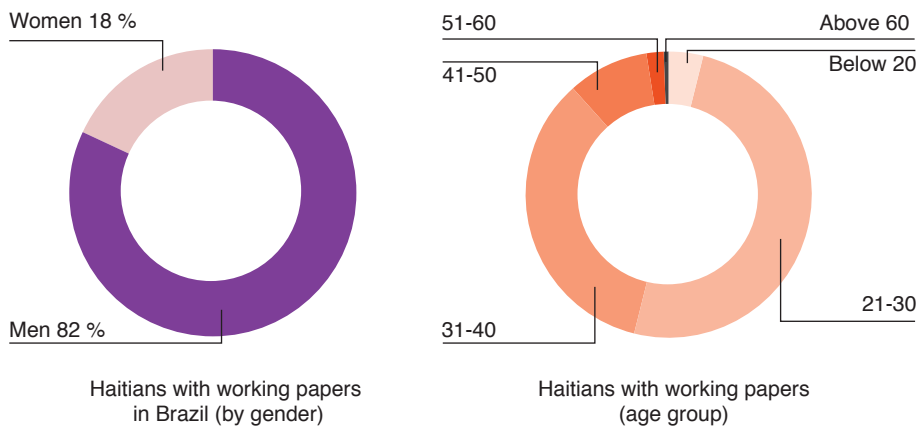
HELOISA HARUMI MIURA

The Haitian Migration Flow to Brazil: Aftermath of the 2010 Earthquake

Following the Haitian catastrophic earthquake of 12 January 2010, the entire country had to readapt itself to the destructive consequences of such natural disaster. Already plagued by political turmoil, poverty, corruption, the country had to adapt to the consequences of this dramatic earthquake that continue to resonate years after the event. It has been as a matter of fact the main direct and indirect cause for internally displaced people and international migration in the last few years.

The island of Hispaniola, which Haiti shares with the Dominican Republic, holds a delicate geographic position, as it sits on the rim of the Caribbean tectonic plate and has recorded many other ravaging seismic activities throughout history. Earthquakes can be followed by tsunamis, thus aggravating the tragedies associated with this natural disaster. The country also occasionally faces severe hurricanes and disastrous floods caused by torrential rainfalls not to mention man-made soil erosion, deforestation, and droughts, as reveals one of the first study published on this matter (Rodman, 1954)

Haitians have a long history of migration: from labor migrants seeking employment in neighboring countries to middle and upper classes seeking better education in universities in France or the United States, the Diaspora intensified during the 20th century, partly because of the oppressive regime of President François “Papa Doc” Duvalier in the 1960s. The earthquake led to new waves of migration, directed amongst other to Brazil and concerning especially young Haitian men (ranging from 20 to 40 years).



Author: Heloisa Miura, 2014. Source: Repórter Brasil.

In 2013, the number of refugee demands increased in 600% and Haitian migrants tripled (Marcel and Stochero, 2013), challenging the living conditions of Haitians arriving in Brazil, whose government and infrastructure was unprepared for such large migration flows. Throughout 2013 more than 13,000 Haitians obtained a Brazilian permanent resident visa, while a research to be published by PUC Minas University, IOM and the Brazilian National Migration Council estimates approximately 50,000 Haitians living in Brazil until the end of 2014 (Diário do Comércio, 2014).

It is extremely difficult to tell how many people leave a country for good or intending to return; therefore, it is easier to find figures on the receiving end, essentially 'host countries'. However, this only takes into account immigrants in regular situations, holding legal authorizations to stay in the country, thus neglecting the vast territory of clandestine migrants. Today, the Brazilian government estimates that 21,000 Haitians are living legally in Brazil (Fellet, 2014), but many remain undocumented. Furthermore, new comers keep arriving on a daily basis, flying directly to the Southeast region or crossing the border in Northern Brazil to the Acre Department, a region that did not get much media attention until the Haitian's arrival.

Even though the 2010 earthquake left a large number of internally displaced persons in Haiti, this paper will focus on the Haitian migrants who migrated to Brazil, highly covered by the media and thus constituting the center of discussions regarding a change of migration policies and legislation in Brazil. The aim of this paper is to assess the various aspects of Haitian migration to Brazil, such as the challenges they face during the journey and the harsh living conditions endured when they arrive.

1. MIGRATION FACTORS

Haiti has historically been an immigration country due to many "push factors"¹, in particular geopolitical clashes since the nineteenth century (Cruse, 2012: 23). Haitian communities abroad are concentrated in the Dominican Republic, United States, Cuba, Puerto Rico, Canada and the Bahamas. Smaller diasporas are also found in France, Jamaica, the French Antilles, Mexico, Virgin Islands, Brazil, and French Guiana (Cruse, 2012).

1.1. Earthquake

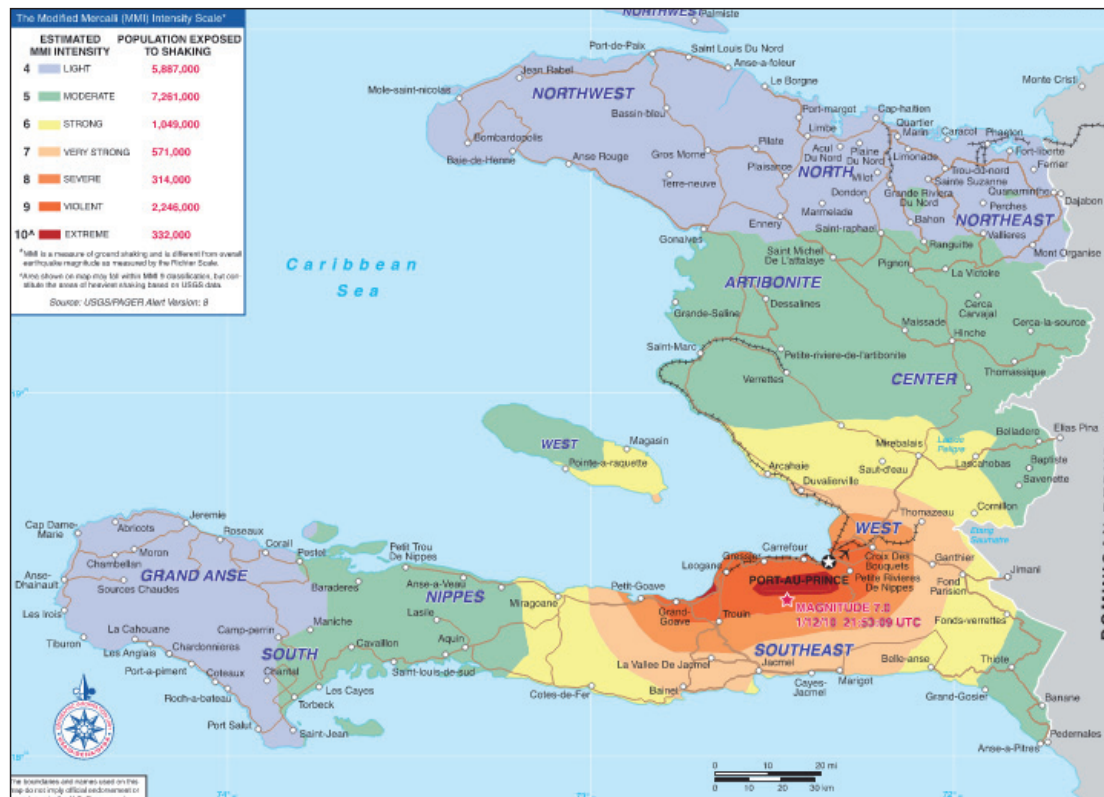
Caused by a rupture on the Enriquillo Fault, the earthquake of 12 January 2010 reached level 7.0 on the Richter scale² and such magnitude can affect areas more than 180 km away from the epicenter of the quake (Cruse, 2012). Its epicenter was near the town of Léogâne, approximately 25 kilometers away from Haiti's capital Port-au-Prince, leading to even more devastating effects by reaching such a densely populated area. Many aftershocks continued to affect the country during January 2010, with an official death toll of 230,000 people, half a million injured and more than 1 million homeless out of a population of about 10,400,000 people (Red Cross).³

1. Everett S. Lee's factors that propel migration are divided into two categories: push and pull factors, which respectively reject and attract migrants. More on: A Theory of Migration. 1966. *Demography*. Vol. 3, No. 1, pp. 47-57. Available at <http://www.jstor.org/stable/2060063>

2. Richter Magnitude Scale - «a scale for expressing the magnitude of an earthquake in terms of the logarithm of the amplitude of the ground wave; values range from 0 to over 9». The Free Dictionary. Available at <http://www.thefreedictionary.com/Richter+scale>

3. In total, the Red Cross estimates that 3 million people were affected by the 2010 earthquake in Haiti, including deceased, injured, homeless people and families. Available at <http://www.icrc.org/eng/resources/documents/update/haiti-update-140110.htm>

Figure 1. Earthquake intensity in Haiti.



Source: US AID, 2010

The earthquake not only destroyed cities and its buildings, but it also undermined the economic dynamics that existed previously. Unlike other highly destructive disasters as the Fukushima disaster in Japan, the Haitian government was unable to provide means of survival to everyone affected and a lack of absorbing economic capacity in cities that remained unaffected. These cities did not have employment opportunities for the large number of people that left the capital Port-au-Prince (Fagen, 2013). This particular natural disaster consisted of a key push factor, which caused a sharp increase in emigration from Haiti, alongside other natural and historical factors.

1.2. Environmental and Social Factors

The recurrence of environmental disruptions increases risks and vulnerabilities. Indeed, Hurricane Sandy struck southern Haiti in October 2012, leaving a path of devastation including 54 confirmed deaths and causing damage to public infrastructure, houses and crops in Haiti (USAID, 2013) when the country had still not recovered from the 2010 earthquake. Many people were still living in tents or public shelters built by the time the earthquake hit, leaving all room for a new wave of chaos. Disastrous flood followed Hurricane Sandy and are imputable to weak infrastructure to face and mitigate the effects of natural disasters, but also “decades of deforestation for fuel [that] have left few natural barriers to the raging waters” (Ferreira, 2012). Even though preventive evacuation was considered successful, “severe flooding and landslides resulted from the violent winds and heavy rain and caused immediate and significant damage to houses, public infrastructure and crops” (Cody, 2013:32). The

destruction caused by the hurricane worsened the lives of Haitians, with an increase of cholera cases and gross losses in agriculture, providing one more reason to flee the country.

Moreover, Haiti's political history has been affected by several oppressive regimes ruling the country, pushing people to exile. More recently, the United States marine forces occupied Haiti at the beginning of the twentieth century, followed by the arrival of President François Duvalier, known as Papa Doc. His mandate endorsed bloody killings of thousands of political opponents, and such policies were continued by his son, Jean-Claude Duvalier or Baby-Doc, who took over power after his father's death. Such dictatorships created a feeling of fear and hidden anger in the people of Haiti, which helped to discredit the development of this nation and led people to emigrate (Lewis, 2004).

2. WHY BRAZIL?

Haitian migration has traditionally moved towards the North (United States and Canada) and the Dominican Republic. However, a new trend of migration down South (Caribbean and Latin America) gained strength during the last few years, propelled by a series of pull factors in countries like Brazil.

The process of populating Brazil was mainly due to immigration, since the population of native Indians was quickly decimated by the European colonizers. Between the centuries 1500 to 1800, colonization was weak and the Portuguese colonizers and sub-Saharan African slaves were the main groups of habitants. After the end of slavery in Brazil in the year 1888, European immigration increased with the arrival of Italians, Germans and Spaniards. At the beginning of the 1900s, immigration was still in the spotlight with numerous groups of Japanese, Portuguese, Spanish and Italians, who fled poverty and political persecution in their countries to work in plantations or small businesses in Brazil. More recent events led new groups of immigrants to Brazil, like Bolivians or refugee-seeking Colombians, Syrians, and Congolese (UNHCR/Acnur, 2013). After the World Cup in June 2014, hundreds of citizens of Ghana requested refuge to live in Brazil, as tourist visas were guaranteed by FIFA for ticket buyers and taking advantage of this breach (Wilkinson, 2014).

However, the Haitian community in Brazil went absolutely unnoticed until the 2010 earthquake⁴. During the first two years of migration, it was considered just a small wave, but after 2013 this migration flow established as a new pattern in the Latin American region, in a conjunction of pull factors that led to Brazil and is attracting more and more attention by the media and policy makers.

2.1. MINUSTAH and the “fixing” of Haiti

The MINUSTAH⁵ is a United Nations military mission still in operation in Haiti, established by Security Council Resolution No. 1542 on 30 April 2004, due to the instable situation of conflict and political revolt that could threaten international security and cause a human rights crisis in Haiti. This mission, composed mostly by Latin American and Asian forces, is led by the Brazilian Army and marks the first strong connection between the two countries, a product of long desired South-South cooperation. However, it is also seen as a symbol of multilateral interests, since Haiti

4 A different and minor flow consisted of young Haitian students who went to Brazil through the aid of scholarships provided by a partnership between the two countries. Télémaque, Jenny. 2012. *Imigração haitiana na mídia brasileira: entre e representações*. Rio de Janeiro: UFRJ/ECO, p. 42.

5 Acronym for United Nations Stabilization Mission in Haiti - in French Mission des Nations Unies pour la Stabilisation en Haïti.

had no civil war or high crime rates to justify the deployment of UN armed forces, even for preventive reasons. The idea that this patchwork group of soldiers could “fix” the country was at first taken for granted, but it proved to be more difficult than expected after 10 years of international presence in Haiti and not one relevant change provided (Murray, 2014).

Photo 1. MINUSTAH Partners with Haitian Agencies to Combat Cholera.



© Nektarios Markogiannis UN/MINUSTAH, 2014.

Even though participating in MINUSTAH includes high costs for the Brazilian government (Edwards, 2012), it is seen by most political analysts as part of the country’s diplomatic agenda of displaying power and sympathy at the international level, as Brazil eagerly desires a permanent seat at the UN Security Council. It also coincides with the country’s momentum in the informal hierarchy of international relations and global governance, in what is called *pax brasiliensis*⁶ (Nasser, 2012).

The blue helmets - UN soldiers - have been subject to strong criticism for sexual scandals, unauthorized killings and abuse, among other violations. However, it is said that the Brazilian military presence differs from other military missions in the region, since it is a peaceful presence to help Haiti rebuild itself instead of peacekeeping missions that directly figure out in the field, resulting in the birth of a close relation between Haitian people and Brazilian blue helmets. On the opposite side, many consider it as a game played by President Lula, who utilized this as a political opportunity to elevate Brazil to a more powerful international player (Sanchez, 2011).

2.2. International Agreements and Special Visas

Only a minority left Haiti holding a visa and most of the Haitians only requested it upon arrival in Brazil. As the number of Haitians arriving in Brazil increased every day, it started to draw attention from the media and public authorities. In order to contain the crisis that was beginning in Northern Brazil, the government decided in 2012 by a diplomatic agreement to adopt a limited number of visas issued by the

6 Latin for «Brazilian Peace», implying a period of Brazilian hegemony on international politics.

Brazilian Embassy in Port-au-Prince, with a maximum of 1,200 visas per year (an average of 100 per month); such “humanitarian visas” were valid for 5 years and could be extended once for the same period of time⁷. This was a special and temporary measure only to be applied in the case of Haitian migration deriving as a result of the earthquake aftermath. Other nationalities do not get the same treatment in Brazil that Haitians do. Nationals of countries in conflict, like Syria, have to face all the difficulties of moving to a new country by themselves when they arrive in Brazil, relying only on a small network of support formed by compatriots in the same situation, but with little institutional support or organization by public authorities.

After this measure was adopted, reports of limited success in the Brazilian Embassy started to arise, as they were not issuing the agreed upon average of 100 visas per month. However, the requirements of the visa were not easily fulfilled by Haitians since they did not possess all the documents requested that often took some time to be obtained (Fellet, 2012). Even so, at the end of 2012 the Embassy interrupted the issuing of new visas, as it had already reached the limit of 1,200; showing that this quota was not sufficient to meet the high demands in Haiti.

Therefore, in April 2013, Brazil removed the 1,200 visa quotas and allowed humanitarian visas to be issued by locations outside Haiti (Conectas, 2013), including Brazilian embassies in the Dominican Republic, Ecuador and Peru, in a maneuver led by diplomatic and political factors aimed at containing the massive illegal migration industry operating on the borders of Brazil, Peru, Bolivia and Colombia. (Fagen, 2013).

The possibility of obtaining a visa to Brazil or abroad simplifies the bureaucracy of embassies and prevents Haitians from seeking the illegal services of smugglers (coyotes). However, this also poses new problems because, once Brazil issues a resident visa for them, it becomes the responsibility of the Brazilian government to provide minimum survival conditions for Haitians entering the country under its consent.

2.3. Economic visibility

Today Brazil is at a turning point. After decades of brain-drain emigration headed to industrialized and developed countries, the rise of Brazil as an economic force has transformed it into a magnet for migrants seeking jobs. “The rising economic profile of Brazil” is not only attracting the attention of poor countries but also educated professionals from Europe, the United States and Latin America (Romero, 2012).

Brazil has a lot on its plate: two giant sports events, the World Cup in 2014 and the Olympics in 2016, the construction of hydroelectric plants to supply the growing demand for energy and the boom in exports, not to mention the increment in domestic consumption. Low unemployment, shortage of workers and climbing wages also play an important role as pull factors of migration. In the words of a 27 year-old Haitian construction worker: “All I want is work, and Brazil, thank God, has jobs for us” (Romero, 2012).

3. MIGRATION PATHS, ILLEGAL MIGRATION AND COYOTES

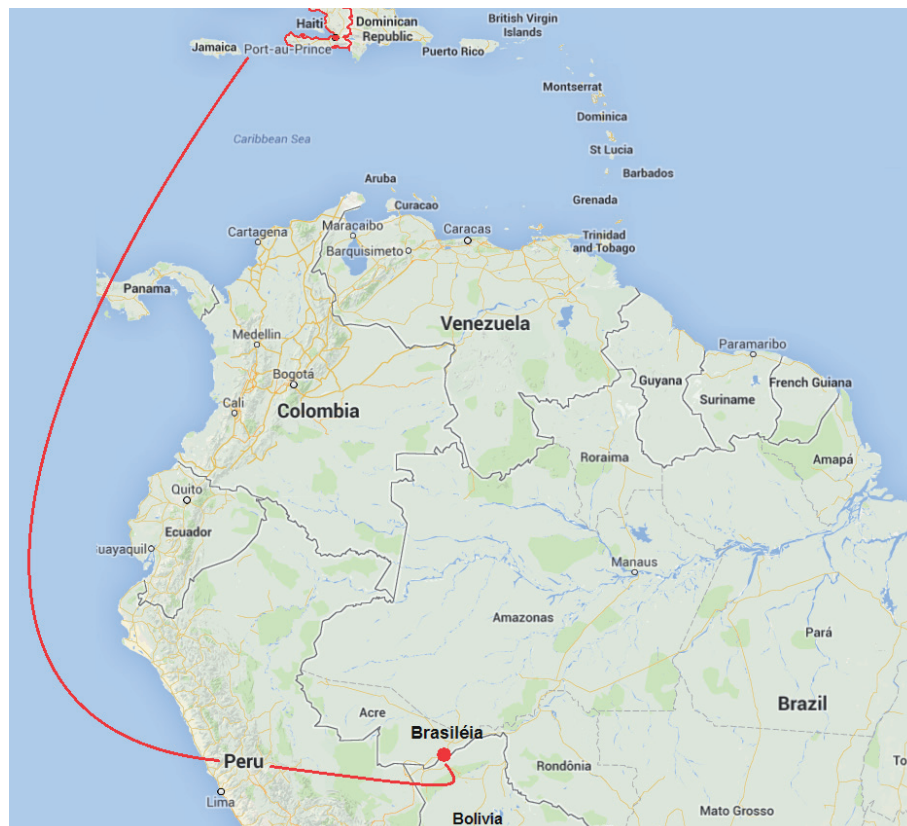
Haitians started to arrive in Brazil in 2010. A few managed to be granted visas in Port-au-Prince, and then leave Haiti by plane directly to Brazil, usually landing in big cities like São Paulo, where job opportunities and welcoming structures for migrants are better. However, the majority of Haitian migrants were guided by smugglers, known

7. CNIG Administrative Resolution No. 97/2012. <http://portal.mte.gov.br/data/files/8A7C816A350AC8820135687F345B412D/RESOLU%C3%87%C3%830%20NORMATIVA%20N%C2%BA%2097.pdf>

as coyotes, as they did not hold legal visas at the time they left Haiti and were considered illegal migrants.

The path followed by most migrants is usually the same. They leave the capital Port-au-Prince or the Dominican Republic by plane and head to South America, where it is easier to arrive without regular documentation (Peru, Ecuador or Bolivia). The remainder of the trip is made by bus up to the border of Brazil, where they continue on foot or by boat, in case there is a river (since the journey goes through the middle of the Amazon region, there are also rivers and jungle to add more obstacles to it). This route is not spontaneous, it is a route planned and controlled by coyotes.

Figure 2. Migration path to Brazil



Source: Heloisa Miura, 2014.

Haitians and other nationalities arrive at the Brazilian border “exhausted, destitute and often ill” (Fagen, 2013), and still have to face further problems of corruption and overcrowding, putting them on a wait-list to finally cross the border and enter Brazil. These long periods of wait in Peru or Bolivia also prove to be burdensome as there are no amenities to help Haitians. They do not even have access to public hospitals (Ramos, 2014), due to the fact that they had no authorization to be in the country. Even worse than in Brazil, the governments in Peru or Bolivia are not even focused on developing public policies to give the minimum rights the Haitians so much needed.

Expenses from deals with coyotes range from USD2,000 to USD4,500, not to mention the bribes they have to pay to local officials, like policemen who control the

borders, either in Brazil or other countries (Corrêa da Silva, 2014). In order to raise such a high amount of money, Haitians had to sell everything they possessed in Haiti, resort to entire lifetime savings or even to more hurtful or questionable methods. On the other hand, a visa granted by the Brazilian Embassy at Port-au-Prince costs USD200⁸, so even if we consider the air tickets, going to Brazil with regular documents could be cheaper than paying a coyote.

However, the appointments to start the visa proceeding are only scheduled by phone, so even though the government of Brazil made it possible for Haitians to enter the country through legal channels, it is very hard to schedule this appointment, mainly because of the lack of human resources to meet the high demands of requests in Port-au-Prince (Ramos, 2014). Therefore, many Haitians still choose illegal methods, more expensive and dangerous, as their situation in Haiti is unbearable and they are eager to start working and send money to their families. Moreover, some of them are not aware of the news, and therefore think the only way to go to Brazil is through coyotes.

Furthermore, coyotes are part of a high-profitable industry that smuggles thousands of migrants and are hardly affected by official measures, always finding ways to circumvent the law and charge more money. This exposes Haitians and other migrants to frequent robbery and abuse. (Fagen, 2014)

The Haitian Priest Onac Axénat was the first to denounce the trafficking of Haitians to Brazil. The Priest, who has lived since 2010 in Acre, the state that most receives Haitian migrants, stressed that the high number of Haitians can be considered human trafficking and not just a simple migration process (Chagas, 2012).

4. THE SLOW RESPONSE OF THE BRAZILIAN GOVERNMENT

In the last year the number of asylum requests, refugee status and temporary visas from environmental migrants has multiplied and continues to steadily increase. In terms of human resources and infrastructure, Brazil was not ready to receive so many immigrants in the same place (small towns in Acre Department), leading to what was called a “humanitarian crisis” (Pereira, 2014). From a legal perspective, the greatest difficulty was to provide Haitians with proper immigrant status, a basis to guide what type of policies should be applied in their case.

4.1. Conditions upon Arrival

According to Sister Rosita Milesi, Director of the Institute of Migration and Human Rights, when Haitians arrive in Brazil they have already consumed all of the economic reserves they had in hand. After paying for transportation by air and land and bribes to smugglers, they arrive without anything left (Milesi, 2012). This fact, as a result of poor conditions in Haiti, results in a complete state of vulnerability for newcomers.

Upon arrival in Brazilian territory, the migrants are in urgent need for basic things, like shelter, food and documents. In addition to these difficulties, there is also an estrangement with the new culture, communication difficulties and unfamiliarity with the language (only a few people in Brazil speak a second language and they come from the upper social classes, concentrated in big cities, which poses an enormous barrier to most creole-speaking Haitians). As they arrive by crossing the borders of small and provincial towns in the Amazon region, most local people are

⁸ Visa fees informed at the official Brazilian Embassy website. Consulted on 4 May 2014. http://portoprincipe.itamaraty.gov.br/fr/a_propos_des_visas.xml

countryman and even the local government does not have the human and economic resources to deal with migrants, or to even understand their needs.

Photo 2. Haitian provisory camp in Brasília, Acre.



©Luciano Pontes/Agência de Notícias do Acre.

In 2013, in the interim between January and September, more than 6,000 Haitians arrived in Brasília, Acre, and were regularized by the Federal Police Department, the competent national authority in charge of issuing valid visas and papers for foreigners. This number is considered far below the real figures of Haitians entering Brazil and living in camps, which would surpass 10,000 last year (Ramos, 2014). In this sense, there has been a campaign to stop using the term “illegal migrant” and adopt “irregular migrant” instead, as illegal is a highly stigmatizing way of referring to someone, carrying negative connotations (Freeman, 2013), and has already been adopted by the International Organization for Migration lexicon, as well as by activists and NGOs.

According to a Federal Police officer in Acre, there are 50 Haitians arriving in Brazil every day. The problem is that the Federal Police does not possess the adequate capacity to fully provide basic assistance to Haitians. Firstly, because it is an institution which, despite operating at its maximum force, is slowed down by bureaucracy and it takes months to schedule an appointment in order to start a visa proceeding. Secondly, the Federal Police is not trained to apply human rights standards when assisting this specific group; Haitians needed more than just a visa, they needed to be able to report the violations they suffered on their tortuous path to Brazil, as well as the difficulties they were facing, such as the lack of financial means to survive and the need to find work apart from the possible exploitation by dishonest companies.

In Brasília and Epitaciolândia, another border town in Acre, camps have been established to provide shelter for the immigrants that arrived on a daily basis by crossing the border with Peru, amongst them Dominicans, Colombians, Senegalese, but mostly Haitians. They had to wait there until they could regularize their documents and visas to remain in Brazil, and later travel to other cities looking for jobs.

Photo 4. Men fighting for food in Brasília camp.

©: Filipe Araújo/Estadão.

In Acre, food was scarce, people had to sleep on mattresses on the floor and showers were few. The migrants faced situations similar to those they left behind in Haiti, with reported cases of diarrhea in almost 90% of the people living in the shelter (Conectas, 2013). With the capacity to take in only 200 people, more than 1,300 were living at the same time in unhygienic conditions (Pereira, 2013). This emergency situation, in spite of the tragic previous living conditions of Haitians, served to highlight and emphasize the complete lack of efficiency in Brazil to deal with cases such as these. There were not any institutional channels for migrants to seek survival conditions, neither before nor after arrival. The case was referred to the Organization of American States by Conectas Human Rights NGO, bringing this debate to an international level and helping to pressure the Brazilian federal government for a more practical approach (Moraes, 2013).

We must admire the work of religious groups and NGOs that strived to maintain these camps; improving sanitary conditions, providing clothing to Haitians and even helping them to find jobs in other parts of the country. The government did not pay for daily meals for the immigrants, but it was simply impossible, in terms of physical capacity, to accommodate everyone. The region they were in was a forgotten land; were it not for the massive presence of Haitians, no one would even talk about this part of Brazil.

As a result of the constant floods of the Madeira River (a tributary of the Amazon river), the city of Brasília and the shelter where many Haitians lived became isolated, roads were blocked and the connection with the rest of the country was only possible via airplane or boats. This made it extremely difficult to supply the region with food and potable water, intensifying the crisis. Haitians were reliving history, becoming for the second time victims of a natural disaster (Ramos, 2014).

The last days of April 2014 marked a game of improvisation and un-coordination played by the federal government and the state of Acre (Conectas, 2014). Finally

recognizing the operational failure of the shelter in Brasília, the government closed it down and started to transfer the migrants to other cities, including the capital of Acre, the city of Rio Branco. Many were sent to São Paulo, 3,000 km away, where another obstacle emerged, as the municipal government was not aware of the transfer and received many people in need of food and shelter. In São Paulo, Haitians and other migrants were and are still being assisted by the catholic NGO Missão Paz, an intermediary between migrants and authorities, assisting with bureaucratic legal duties, as well as with housing, food, cultural activities and psychological support⁹.

Such disastrous maneuver played by the government only helped to increase the stigmatization towards migrants, as many people do not consider their care as an obligation of the host government to take care for them.



4.2. Gaps in the Legal Framework

By the time they crossed the border and arrived in Brazil, Haitians would ask for refugee status to the Brazilian National Committee on Refugees (CONARE). However, during the analysis of the processes by the Committee, they would determine that refugee status could not be granted to Haitians, since they were not covered by the definition of refugee established in international conventions and national legislation¹⁰; even Haitians themselves would affirm they were fleeing war or political persecution. Thus, their case started to become more complex because an increasing number of Haitians were arriving that the government was unable to handle and most of them were penniless, struggling to find housing and work without legal visas and documentation.

Facing hundreds of analogous cases, CONARE decided to transfer this issue to the Brazilian National Migration Council (CNIG), which determined that permanent resident permits could be granted to Haitians – for the duration of 5 years – due to the humanitarian aspects of their migration, considering the devastating circumstances they left behind in Haiti¹¹.

9. Missão calabriana Nossa Senhora da Paz is a part of a catholic mission pointed as the reference center in São Paulo to assist refugees and migrants; led by Italian priest Paoli Parise and lawyer Eliza Donda, they coordinate the Center for Migratory Studies, and also work to introduce the debate among civil society and public authorities.

10. For historical reasons, refugees are defined as those who are suffering grave humans rights violations, persecutions due to race, religion, nationality and political affiliation and/or life threats in their home country, making it impossible for them to go back. (UN Convention and Protocol Relating to the Status of Refugees, 1951 and Brazilian Law 9474/1997).

11. CNIG Administrative Resolution No. 97/2012. <http://portal.mte.gov.br/data/files/8A7C816A350AC8820135687F345B412D/RESOLU%C3%87%C3%83O%20NORMATIVA%20N%C2%BA%2097.pdf>

Haitians continued to enter Brazil through the borders of Amazon, but after the end of the visa quotas in 2012, this migration intensified enormously in 2013 and Brazil again faced the need to provide fast and effective responses to the crisis. However, Brazil's legal framework and public policies towards immigration are very outdated, dating back to the 1980s, unable to adequately deal with the arising challenges. In the special case of environmental migrants, there is not any specific legislation and practices to address the arrival of such number of environmental migrants.

Such legal gaps also cause serious problems concerning the daily lives of immigrants, stranded in limbo. Without official documents, it becomes a staggering task to rent a house, open a bank account and find a formal job. For this reason most of the migrants resort to the informal market, where they can be exposed to labor rights violations, vulnerable to exploitation by their employers. To combat this, the National Ministry of Labor created booklets in Creole to explain the rights of Haitian migrants concerning work as well as providing information regarding basic lessons of Portuguese.

In 2013 and 2014, official task-forces have been deployed to Brasília and other small towns in Acre to issue temporary documents to Haitians, especially working papers. During the first months of this year, 10,000 working papers were to be issued to Haitian migrants only in Acre, as ordered by Brazilian president Dilma Rousseff (Neto, 2014), because many well-intentioned companies were prevented from hiring Haitians due to them not having obtained legal working papers yet. In Brazil it is a crime for the employers to hire a person without working papers. Moreover, for the employees, they can be exposed to serious labor violations if hired by dishonest companies, such as the case of Haitians found in near-slavery conditions in a mining site controlled by the multinational company Anglo American (Wroblewski, 2014). This reflects the lack of public policies for socioeconomic inclusion of migrants; after more than 200 years of the Haitian Revolution that set slaves free, they are still trapped by their past, but this time in Brazil.

4.3. Comigrar 2014

Comigrar stands for the 1st National Conference on Migration and Refuge, a kickoff initiative to discuss at the national level the future of migration in Brazil and most importantly, to discuss adequate legislation and public policies in light of this new trend.

As already mentioned, Brazil will continue to be a receiving center for migrants for years and, if well-equipped, it can avoid a situation of abandonment that Haitians sadly had to experience. From practical issues of providing shelter, to the regulatory framework of visas and formal documents, the surge of Haitian migrants was probably the driving force that boosted discussions within both the government and civil society.

The Conference is held by the Ministry of Justice and took place between May 30 and June 1st 2014 in São Paulo, where many Haitians are arriving to seek employment. As it is the main financial center in Brazil, São Paulo has the infrastructure to support this kind of meeting, attended by various stakeholders interested in discussing the core concepts of migration policy, including politicians, scholars, civil servants and migrants.

The most ambitious aim of the Conference is to elaborate a draft of a new bill concerning migration and refugees in Brazil, aimed at replacing the outdated immigration law, written during the oppressive military regime in Brazil¹². Such a collec-

12. Law No. 6815/1980 concerning the legal status of foreigners in Brazil. http://www.planalto.gov.br/ccivil_03/leis/l6815.htm

tive process of debating public policies, begun in 2013, is an innovative action taken by the government, which recognized the need for strong participation by civil society. Haitian migrants as well as the NGOs which work closely with migrants and refugees will most certainly have important contributions and provide a reflection on the important lessons of the treatment of newly-arrived migrants.

One of the results of this conference was the recommendations from civil society and academia, which were incorporated by a group of legal experts making a draft for a new migration bill. Hitherto considered a part of national security issues in Brazil, the advent of this bill now brings international migration into the perspective of Human Rights, including and broadening the concepts used in international conventions to stop the stigmatization that hinder the understanding of migration as an important piece of international cooperation (Ministry of Justice, Ordinance 2162/13).

5. NEW CHALLENGES IN A DIFFERENT LAND

Following the first wave of Haitian migrants and after all the difficulties faced, new mechanisms of adaptation should be implemented. Regarding Haitian migrants, each person has a different story to share, and adaptation is a key factor that influences success or failure they have to endeavor in order to overcome the tragedies that affected their country.

5.1. Success Versus Failure

Many Haitian migrants are well-educated, they speak many languages, play musical instruments and know different countries; some are even succeeding in teaching French and English in Brazil. The problem for Haiti lies with the need for qualified workers who can help rebuild the country (Chagas, 2012). Unfortunately without appropriate job opportunities, brain-drain remains a challenge which Haiti is failing to address.

The stories of Haitian migrants are based many times on luck. As the Brazilian government is incapable of providing what they need, many have to find jobs and travel on their own expenses. Often employers would go to Acre and look for workers, provided they held suitable legal documents. However, this led to the objectification of the Haitian workforce, since they were seen as products to be “imported” to other parts of the country and fill the gap of vacancies in low-paying jobs, not certain they would have a permanent work contract. But as opportunity comes and goes fast, the migrants utilized their opportunity to take it.

Current sports events like the World Cup and the Olympics are now at the epicenter of Brazil’s economic buzz (Panja, 2013). However, after the World Cup in June 2014, many immigrants working in civil construction will find less and less opportunities for employment. Even worse, Brazil’s social security is clearly not ready to cover unemployed migrants.

The sympathy of people is not to be disregarded, as many Brazilian companies were willing to hire Haitians, who are considered to be disciplined, intelligent and hard-working. The problem is that not all employers practiced fair recruiting and treatment of employees, generating scandals like the above-mentioned slavery and labor rights violations against Haitians, who oftentimes could not contact the police to report such abuses, as they feared deportation or retaliation for not holding papers, or even for being migrants.

The story is far worse for those who could not find a job and ended up living on the streets, begging for money (Andrade, 2014). As the prospects grow from bad to worse, some people regret the choice of leaving their family and migrating, wishing they could return home. In the words of 30 year-old Vincent: “If my legs could walk 100 days in a row, I would go back to Haiti” (EFE, 2014).

5.2 Remittances and Connections with Haiti

It is estimated that almost one-fifth of the Haitian GDP comes from remittances sent by migrants to their families who stayed in Haiti, totaling more than five times the exports revenue of the country (CIA, 2014). Most of the remittances come from the United States, where the Haitian community is very large. In Brazil, it is hard to measure how much money is being sent to Haiti because it is still a new trend of migration and the numbers of migrants before 2013 are not as significant as today. Furthermore, they still have to face adversities regarding bureaucracy, because if they don't hold regular documents to stay in the country, it is difficult to open a bank account. Therefore, they rely on informal transferring markets, friends and other connections to take the money to Haiti, oftentimes with the intent of paying the travel costs for their families to go to Brazil.

Most of the Haitians who arrived in Brazil during the last year and a half came because they had some sort of connection there: a friend, a brother, someone who told them it was a good option to leave Haiti to look for work in a different country (Fellet, 2014). This may be a sign that, despite the humanitarian crisis Haitians face in Brazil, they still could find what they are looking for, and it is serving the purpose of the sacrifice, that is, making money to support their families back in Haiti (Fellet, 2014). On the other hand, what are the costs for it? Selling everything they own in Haiti to pay bribes to smugglers, suffering from the lack of governmental policies in Brazil and being mistreated by authorities.

Which is why, when trying to contact Haitians in Brazil, it proved to be an extremely difficult task, mainly because they became mistrustful of everyone around them after facing so many violations and obstacles (Donda, 2014); in addition, they didn't want their families in Haiti to be aware of the precarious conditions under which they were living in Brazil, sometimes similar or worse than the ones they left behind.

6. CONCLUSION

Since the boom of the Haitian migration in 2013, the situation of Haitian migrants in Brazil has changed in many perspectives and gathered increased attention from national and international media. Many Haitian migrants are well-educated, while in Brazil this is a privilege of the upper classes. In a way, this lesson may be useful to show that poverty does not necessarily coincide with low levels of education.

Furthermore, refugees and environmental migrants are still unknown to many Brazilians. In fact, conservatives tend to propagate an idea of migrants as criminals or inferior people who arrive to steal jobs and public money in a country where many other Brazilian citizens are too suffering from the lack of assistance by the government. Such prejudice could in part be explained by when immigrants fled to Brazil running away from criminal or political accusations. Even inside Brazil this has happened before when people from the Northeast, struggling with drought and poverty, had to face prejudice after migrating to the South looking for a better life. But this has changed and some Brazilians are still unaware of migration causes and how it is affected by international cooperation, which reflects upon the lack of public debate.

The main point to consider is whether something is being done to effectively remedy the destitution Haitians endure in Haiti and abroad. Migration is a choice out of a no-choice situation and many have claimed that if the scenario was better in their homeland, they would never have left Haiti. Migration, is therefore an adaptation strategy. Improving the situation in Brazil is urgent, but it will not solve the roots of the problem or stop migration. Haiti must face the need of reconstructing both its physical aspects, but most importantly the moral of the Haitian people. ♦

« Combien de temps encore les Haïtiens seront-ils obligés
de quitter notre pays contre leur volonté ?
On se tourne vers la République dominicaine
avec ses camps de coupeurs de canne
et son esclavage à peine masqué ;
vers les États-Unis et leurs camps d'internements
de Krome et de Guantanamo pour nos "boat people",
on nous renvoie au massacre ;
on se tourne vers les Bahamas et leurs pogroms périodiques ;
vers la Guyane et ses bidonvilles réservés aux "Haïchiens" ;
vers le Canada où le froid gèle les larmes de nos conducteurs de taxis
et où on reproche tous les jours à nos écoliers leur couleur.
Étrangers, vous ne voulez pas de nous dans votre pays ?
Laissez-nous au moins le droit de vivre en paix chez nous.
Laissez nous élire qui nous voulons. »

Paul Anvers, 2000, *Rizières de sang*

BIBLIOGRAPHY

ARTICLES AND REPORTS

- CIA. Central Intelligence Agency. The World Factbook. 2014. <https://www.cia.gov/library/publications/the-world-factbook/geos/ha.html>
- Cruse, Romain. 2012. *Géopolitique et migrations en Haïti. Essai sur les causes de l'émigration haïtienne et sur l'utilisation des migrants*. Paris: Publibook.
- Edwards, Scott. 2010. *Global Ambitions: Brazilian Peacekeeping in Haiti*. Available at <http://pinpointpolitics.co.uk/global-ambitions-brazilian-peacekeeping-in-haiti/>
- Fagen, Patricia Weiss. 2013. *Receiving Haitian Migrants in the Context of the 2010 Earthquake*. The Nansen Initiative. <http://www.nanseninitiative.org/sites/default/files/Fagan%20Haiti%20Case%20Study%203%20December%202013.pdf>
- Fernandes, Duval (coord.). 2014. Projeto "Estudos sobre a Migração Haitiana ao Brasil e Diálogo Bilateral". Belo Horizonte: MTE, IOM-OIM, Puc Minas, Gedep. Available at: <http://portal.mte.gov.br/lumis/portal/fileDownload.jsp?fileId=8A7C816A45B266980145DCAB8EF42233>
- IOM Glossary on Migration. 2004. Available at http://publications.iom.int/bookstore/free/IML_1_EN.pdf
- Lee, Everett S. 1996. "A Theory of Migration". *Demography*. Vol. 3, No. 1, pp. 47-57. Available at <http://www.jstor.org/stable/2060063>
- Lewis, R. Anthony. 2004. "Haiti - Essays in honour of the Bicentenary of Independence 1804-2004". *Caribbean Quarterly*, Vol. 50, No. 4, pp. 42-51
- Milesi, Rosita. 16 January 2012. *Migração Haitiana para o Brasil*, http://www.migrante.org.br/migrante/index.php?option=com_content&view=article&id=228:migracao-haitiana-para-o-brasil&catid=89&Itemid=1210
- Moore, O. Ernest. 1972. *Haiti: Its Stagnant Society and Shackled Economy*. New York: Exposition Press.
- Ministry of Justice of Brazil. Ordinance No. 2162/13. Preliminary Draft of Migration Law and Promotion of Migrants' Rights In Brazil. https://www.academia.edu/7987119/Anteprojeto_da_nova_Lei_brasileira_de_Migracoes_-_Comissao_de_Especialistas_criada_pelo_Ministerio_da_Justica_Portaria_2162_13_
- Murray, Gerald. 2014. Fixing Haiti: MINUSTAH and Beyond - edited by Heine, Jorge and Thompson, Andrew S. *Bulletin of Latin American Research*, 33: 518-519.
- Nasser, Felipe. 2012. "Pax Brasiliensis: Projeção de Poder e Solidariedade na Estratégia Diplomática de Participação Brasileira em Operações de Paz da Organização das Nações Unidas". *O Brasil e as operações de paz em um mundo globalizado: entre a tradição e a inovação*. Brasília: Ipea, 2012, pp. 213-241.
- Rodman, Selden. 1954. *Haiti: the black republic. The complete story and guide*. New York: The Devin-Adair Company.
- Sanchez, Alex. 2011. *Endgame for Brazil's role in MINUSTAH?* Available at <http://www.coha.org/endgame-for-brazils-role-in-minustah/>
- Télémaque, Jenny. 2012. *Imigração haitiana na mídia brasileira: entre fatos e representações*. Rio de Janeiro: UFRJ/ECO. Available at <http://oestrangeroiodotorg.files.wordpress.com/2012/08/jenny-haitianos-mono.pdf>
- The Schomburg Center for Research in Black Culture. "The Trends of Haitian Migration", *In Motion: The African-American Migration Experience*. <http://www.inmotionaame.org/migrations/topic.cfm;jsessionid=f830941491398835399368?migration=12&topic=2&tab=im age&bhcp=1>
- US Aid, Haiti - Hurricane Sandy Fact Sheet #1, Fiscal Year (Fy) 2013, February 15, 2013. <http://www.usaid.gov/sites/default/files/documents/1866/02.15.13%20-%20Haiti%20Hurricane%20Sandy%20Fact%20Sheet.pdf>
- Andrade, Almir. 24 April 2014 "Pedindo esmola e dormindo nas ruas, haitianos e senegaleses continuam chegando em Brasília", *Jornal Eletrônico Rôndonia ao Vivo*, <http://www.rondoniaoovivo.com/noticias/pedindo-esmola-e-dormindo-nas-ruas-haitianos-e-senegaleses-continuum-chegando-em-brasileia/113422#.U2eMqvmSwpU>
- Chagas, Marcos. 15 November 2012 "Padre haitiano diz que tráfico de pessoas sustenta a imigração ilegal para o Brasil", <http://www.ebc.com.br/2012/11/padre-haitiano-diz-que-trafico-de-pessoas-sustenta-a-imigracao-ilegal-para-o-brasil>
- Conectas Human Rights. 29 April 2014 "Empty Responses - Federal Government Evades Responsibility for Haitians", <http://www.conectas.org/en/actions/foreign-policy/news/19029-empty-responses>
- Conectas Human Rights. 2 May 2013 "Brazil Ends Annual Visa Quota for Haitians", <http://www.conectas.org/en/actions/foreign-policy/news/brazil-ends-annual-visa-quota-for-haitians>
- Conectas Human Rights. 12 August 2013 "Brazil's Unspoken Humanitarian Crisis: 'Refugee' Camp Holding Over 800 Haitians in Inhuman Conditions", *Global Research*, <http://www.globalresearch.ca/brazil-hides-humanitarian-emergency-in-acre-refugee-camp-holding-over-800-haitians-in-inhuman-conditions/5347105>
- Corrêa da Silva, Vanessa. 1st May 2014 "À espera de emprego, haitianos sonham em trazer famílias para o Brasil", *Folha de São Paulo*, <http://noticias.uol.com.br/cotidiano/ultimas-noticias/2014/05/01/a-esperade-emprego-haitianos-sonham-em-trazer-familias-para-o-brasil.htm>
- EFE Agência. 25 April 2014 "Se minhas pernas pudessem caminhar 100 dias seguidos, voltaria ao Haiti", <http://noticias.terra.com.br/brasil/politica/se-minhas-pernas-pudessem-caminhar-100-dias-seguidos-voltaria-ao-haiti,acabea2e7a595410VgnCLD200000cd6eboaR CRD.html>

PRESS ARTICLES

- Acnur. 27 April 2013. "Triplica o número de estrangeiros em busca de refúgio no Brasil", <http://www.onu.org.br/triplica-o-numero-de-estrangeiros-em-busca-de-refugio-no-brasil/>

- Fellet, João. 29 February 2012 “Após nova regra, Brasil só concede 30% da cota de vistos a haitianos”, *BBC*, http://www.bbc.co.uk/portuguese/noticias/2012/02/120228_haitianos_visto_jf.shtml
- Ferreira, Susana. 28 October 2012 “In Haiti, Hurricane Sandy Leaves Behind Death and Devastation”, *Time Magazine*, <http://world.time.com/2012/10/29/in-haiti-hurricane-sandy-leaves-behind-death-and-devastation/>
- Freeman, Colin. 23 July 2013 “Should ‘illegal’ immigrants be rebranded as ‘irregular’ immigrants? The UN thinks so”, *The Telegraph*, <http://blogs.telegraph.co.uk/news/colinfreeman/100227751/should-illegal-immigrants-be-rebranded-as-irregular-immigrants-the-un-thinks-so/>
- Marcel, Yuri and Stochero, Thaian. 18 October 2013 “Triplica em 2013 número de haitianos ilegais que entram pelo Acre”, *O Globo*, <http://g1.globo.com/ac/acre/noticia/2013/09/triplica-em-2013-numero-de-haitianos-ilegais-que-entram-pelo-acre.html>
- Moraes, Maurício. 23 August 2013 “ONG leva caso de imigrantes haitianos no Acre à OEA”, *BBC Brasil*, http://www.bbc.co.uk/portuguese/noticias/2013/08/130819_acre_haitianos_conectas_oea_mm.shtml
- Neto, Assem. 04 February 2014 “Rondônia emitirá 10 mil carteiras de trabalho a haitianos alojados no Acre”, *O Globo*, [http://g1.globo.com/ro/rondonia-noticia/2014/02/rondonia-emitira-10-mil-carteiras-de-trabalho-haitianos-alojados-no-acre.html](http://g1.globo.com/ro/rondonia/noticia/2014/02/rondonia-emitira-10-mil-carteiras-de-trabalho-haitianos-alojados-no-acre.html)
- Panja, Tariq. 16 December 2013 “Brazil World Cup Seeks Haitian Migrants Amid Worker Shortage”, *Bloomberg*, <http://www.bloomberg.com/news/2013-12-15/brazil-world-cup-turns-to-haitian-migrants-amid-worker-shortage.html>
- Pereira, Pablo. 14 April 2013 “Haitianos revivem no Acre a miséria de um país”, *Estadão*, <http://www.estadao.com.br/noticias/impresso,haitianos-revivem-no-acre-a-miseria-de-um-pais,1020761,o.htm>
- Romero, Simon. 6 January 2012 “Haitians Take Arduous Path to Brazil, and Jobs”, *The New York Times*, <http://www.nytimes.com/2012/01/07/world/americas/brazils-boom-absorbs-haitis-poor-for-now.html?pagewanted=all&r=1&>
- Wilkson, Adriano. 17 July 2014 “Ganenses aproveitam brecha na lei da Copa e pedem refúgio no Brasil”, <http://copadomundo.uol.com.br/noticias/redacao/2014/07/17/ganenses-aproveitam-brecha-na-lei-da-copa-e-pedem-refugio-no-brasil.htm>
- Wroblewski, Stefano. 23 January 2014 “Sem acesso a políticas públicas, haitianos são explorados”, *Repórter Brasil*, <http://reporterbrasil.org.br/2014/01/sem-acesso-a-politicas-publicas-haitianos-sao-explorados/>

INTERVIEWS

- Eliza Donda, lawyer at Missão Paz (partner of the Catholic Church and the UNHCR), conducted on April 24 and 28, 2014 via phone call.
- Erika Pires Ramos, federal attorney at the Brazilian National Environmental Agency and founder of Resama - South American Network for Environmental Migrations, conducted on various dates in April 2014 via email and Skype.
- João Fellet, BBC journalist, conducted on April 28, 2014 via phone call.

JANINA PESKINSKI

The 2013 Colorado Wildfires

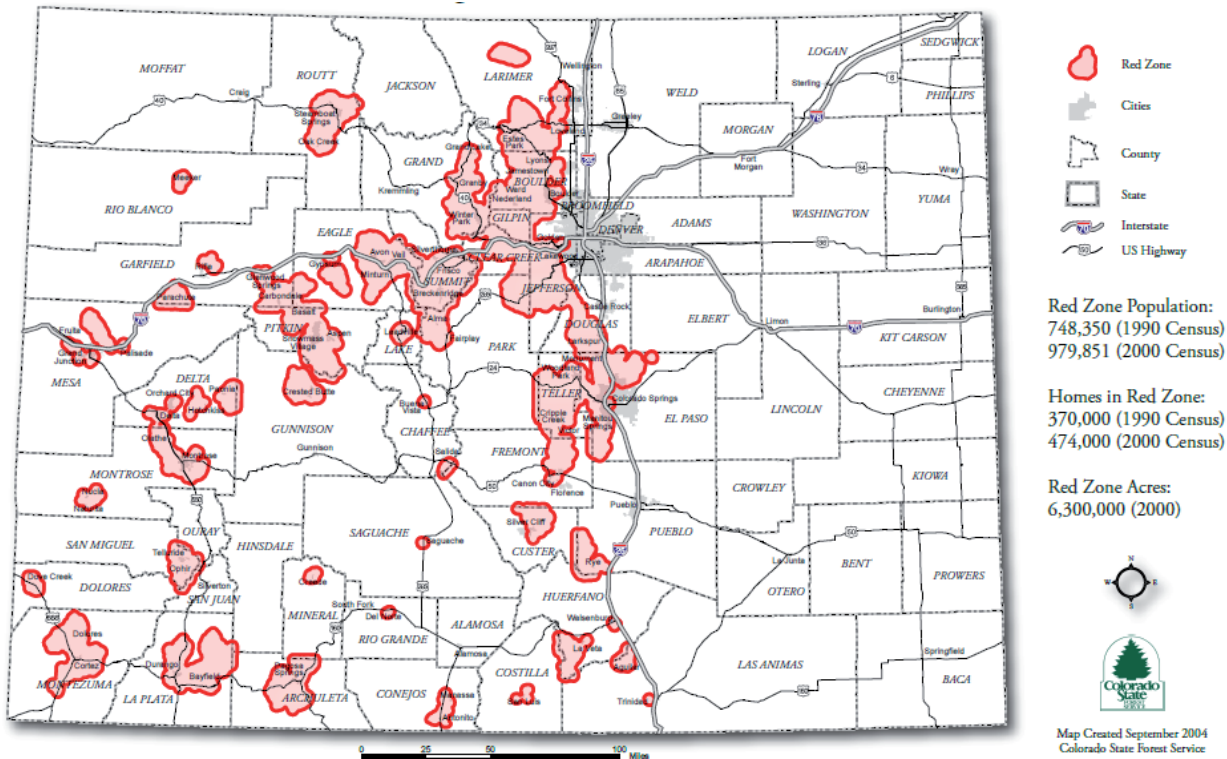
During summer of 2013, Colorado experienced the most destructive wildfires in state history. Colorado annually suffers from wildfires of varying intensity, and those in 2013 were particularly aggressive due to the confluence of environmental conditions including record-high temperatures, drought, and hot, dry winds. Yet, neither the 2013 wildfires, nor previous ones, have resulted in any mass migration away from burn zones. There has been some long-term migration, principally by people whose homes have been destroyed, and some people who live in areas that are repeatedly evacuated have indicated their intention to migrate. More noteworthy, however, are the temporary evacuations during wildfires, which have been successful in removing people from risk areas, limiting loss of life to two people who did not evacuate in time. However, the overall trend is that development in high-risk zones is consistently increasing, creating greater potential necessity for evacuation or displacement as a larger population increases environmental risk affecting more people. Therefore, new policies concerning wildfire mitigation must be responsive to existing risk factors and prevent potential increase in risk factors, both environmental and human, by using lessons learned from previous fire seasons. This case study of the 2013 Colorado wildfires examines the causes and consequences of these fires, with a particular focus on evacuation, displacement, and policies that were successful in limiting their human consequences.

1. THE 2013 WILDFIRES

The 2013 fires were the most intense on record in Colorado state history due to both their number and severity. The Black Forest fire was the most destructive of the numerous wildfires during the 2013 season. Although the fire raged for a relatively short period of time, from June 11 to June 20, it destroyed 14,280 acres and 511 homes in addition to killing two people who did not evacuate in time to escape the blaze. Otherwise, the evacuation effort was successful: the evacuation zone covered 24 square miles, impacting nearly 40,000 people (Schneider 2013). Another notable wildfire during the 2013 series was the West Fork Complex fire, comprised of the West Fork fire, the Papoose fire, and the Windy Pass fire. Collectively these fires consumed over 110,000 acres as they burned from June 5 to July 19 (Schneider 2013). Several other wildfires burned during the June and July fire season, but no centralized data has been compiled on the extent of the damage or number of people evacuated.

The cause of the fires can be either natural (lightning) or man-made, and once ignited the fires were exacerbated by record setting temperatures, compounded

by hot, dry winds that accelerated the spread of the flames. The increasing human consequences of wildfires, including destruction of homes and evacuations, are directly correlated to the increased number of people living in the wildland-urban interface. The Colorado State Forest Service defines wildland-urban interface (WUI) as “any area where man-made improvements are built close to, or within, natural terrain and flammable vegetation, and where high potential for wildland fire exists” (Colorado State Forest Service). The following map of Colorado indicates the state’s “red zones”, areas of the WUI most at risk for fire:



Source: Colorado State Forest Service, 2004.

Wildfire suppression costs have skyrocketed due to the increased severity and frequency of fires, which can be attributed to four main causes: climate change, accumulation of flammable materials, ignition agents, and ongoing human development in fire prone areas (Flannigan 2005: 847). Previous policies of suppressing the fires, which initially decreased wildfire occurrence, have led to a buildup of fuel, which means that when fires do strike these areas their severity is exacerbated by an over-abundance of flammable material. Because wildfires are part of the natural cycle in wildland areas, it is primarily encroaching human development that puts people at risk, therefore necessitating policy measures that prioritize mitigation of damage in human-developed areas.

Permanent migration away from high-risk areas is a common response to natural disasters, including wildfire. In the first study of migration dynamics following a wildfire disaster, Nawrotzki et al focus on the 2010 Fourmile Canyon fire in Colorado, and their conclusions provide insight that may be applicable to other fire disasters in Colorado and beyond, such as the 2013 wildfires. Based on survey data, Nawrotzki et al identify several key factors influencing peoples’ decision to migrate or not after a major wildfire. They assert that existing literature suggests “a clear direction for

the relationship between hazard migration and factors such as gender and place attachment but is ambiguous on the association with age, socioeconomic status, social networks, and risk perception” (Nawrotzki et al 2014: 217). However, their study reveals that risk perception was in fact a significant factor for those impacted by the Fourmile Canyon fire. “Individuals who evaluated their property as fire prone were almost 11 times more likely to intend leaving the WUI area compared to individuals who did not consider their property fire prone” (Nawrotzki et al 2014: 220). People who have already experienced evacuation are more likely to acknowledge their property as fire prone. Given that approximately 40,000 people were evacuated due to the Black Forest fire alone, in addition to those evacuated due to the other 2013 fires, perception of risk may greatly increase among affected populations, which may have an impact on future migration (Schneider 2013).

Although the study by Nawrotzki et al only assesses the intention to migrate, and not actual migration patterns, there are potential negative consequences if those residents most aware of risk leave the WUI. Drawing on Dash and Goodwin (2007), the authors hypothesize that “if individuals with higher risk perceptions leave the foothill/ mountain area, a self-selection process may lead to a proportional increase of WUI residents with lower risk perceptions who may be more confident in their abilities to deal with forest fires, and perhaps demonstrate different mitigation and evacuation behaviors” (Nawrotzki et al 2014: 221). This highlights the importance of ensuring that all people who live in the WUI areas are knowledgeable about the actual risks to their property and what they can do to mitigate these risks so that they can make well informed decision about whether or not to migrate.

During the severe 2013 fires, there was extensive property damage but minimal loss of life, which speaks to the success of evacuation policies but the shortcomings of mitigation policies. These policies responses will be discussed in the next section, along with possible avenues for future policy developments.

2. POLICY RESPONSES

The extent of the consequences of these wildfires is largely dependent on policies made and implemented at the national, state, and local level in order to mitigate risk and react to the disaster. Policy responses addressing wildfires include those focused on the environment and those focused on people, as well as those intended to prevent or mitigate wildfires and those intended to respond to them. Ideally all these priorities should be complementary or even integrated.

Across the United States, there have been policy shifts regarding how best to address wildfires. From initial policies of fire suppression, current environmental policies have expanded to include controlled burns and clearing brush and dead vegetation in risk areas. For example, a 2013 Colorado law “Creating a Prescribed Burn Program under the Division of Fire Prevention and Control” implements a program of prescribed burns following minimum prescribed burning standards and to be supervised by a state certified prescribed burn manager.

One of the policy challenges in addressing wildfires is coordinating action at the national, state, or local level. In the United States, a National Fire Plan was undertaken in 2000 following a particularly brutal season of wildfire catastrophes, and the state of Colorado has also developed its own responses that are implemented at the local level. However, yet another challenge is coordinating the multiple agencies that are involved in fire prevention and response, including the forest service, fire service, and emergency management.

2.1. Policy Responses Implemented in 2013

The biggest success of the response to the 2013 wildfires was the evacuation effort,

which prevented loss of life except for the two people killed by the Black Forest fire. Evacuation procedures that have been put in place include pre-evacuation warnings, optional evacuation announcements, and mandatory evacuation orders. In Colorado, the State Emergency Operations Plan has an annex outlining evacuation procedures, which are led by the Division of Homeland Security and Emergency Management with support from 11 supporting agencies.¹ The policy explains that

Evacuation, as an emergency management function, consists of four distinct and mutually supporting phases applicable to all evacuation operations and to all levels of government.

- a. Collection and analysis of data necessary to fully understand the potential impact and threat.
- b. Preparedness activities to ensure government officials and the public understand what actions to take and how and when to accomplish those actions.
- c. Implementation of evacuation operations with the goal of saving life by efficiently moving people, animals, and equipment out of harm's way.
- d. Sheltering and providing mass care for evacuees in facilities, which meet the basic needs of the general and special needs populations. (Colorado State Emergency Operations Plan 2013: 2-3)

Initially, these phases are to take place at the local level and escalate as necessary, depending on the scale of the disaster. Therefore, individual towns and communities have more specific policies concerning how they will make and execute evacuation decisions.

A major factor in ensuring a successful evacuation is to make sure all people in the evacuation area are well informed of both the pre-evacuation status and the optional or mandatory evacuation orders. In 2013, such communication was carried out by phone calls, radio and television announcements, and online announcements on official sites and social media, ensuring that the maximum number of people was informed as quickly as possible.

Risk mitigation behaviors, taken before occurrence of wildfires, are also a key factor in lessening impact in residential areas. According to a study conducted by Brenkert-Smith et al about the risk mitigation behaviors of residents in WUI areas: "wildfire information received from local volunteer fire departments and county wildfire specialists, as well as talking with neighbors about wildfire, were positively associated with higher levels of mitigation" (Brenkert-Smith 2010: 1139). Therefore local efforts, such as minimizing flammable materials on family property, are essential to promote community level behavioral change to adopt mitigation measures.

Being knowledgeable of the level of risk is one factor that encourages people to take mitigation measures, which was done to a limited extent before the 2013 fires. One innovative tool for enabling the public to assess risk before the outbreak of wildfires is the Colorado Wildfire Risk Assessment Portal (CO-WRAP), created in 2013 by the Colorado State Forest Service based on the results of the 2012 Colorado Wildfire Risk Assessment Project. CO-WRAP is an online platform to identify and quantify wildfire risks.² Individuals can search for information about their location in order to determine the level of risk in their area as well as what mitigation measures to take.

Another mechanism, established at the national level in 2003 and implemented locally in Colorado, are Community Wildfire Protection Plans (CWPPs). Such plans are part of the national Healthy Forests Restoration Act of 2003. This law prioritizes

1. American Red Cross, Civil Air Patrol, Colorado Veterinary Medical Foundation, Colorado Volunteer Organizations Active in Disasters (COVOAD), Department of Agriculture, Department of Human Services, Department of Military and Veterans Affairs, Department of Public Health and Environment, Department of Public Safety, Department of Transportation, Salvation Army.

2. Accessible at: <http://www.coloradowildfirerisk.com/>

concerns for public safety, community sustainability, and natural resources by aiming to address challenges such as local firefiguring capacity and how to prioritize land management. It emphasizes the community level aspects of wildfire preparedness by according financial benefits to communities with wildfire protection plans in place. As defined by this law,

The term “community wildfire protection plan” means a plan for an at-risk community that—

(A) is developed within the context of the collaborative agreements and the guidance established by the Wildland Fire Leadership Council and agreed to by the applicable local government, local fire department, and State agency responsible for forest management, in consultation with interested parties and the Federal land management agencies managing land in the vicinity of the at-risk community;

(B) identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment on Federal and non-Federal land that will protect 1 or more at-risk communities and essential infrastructure; and

(C) recommends measures to reduce structural ignitability throughout the at-risk community.

In Colorado, the CWPP is not simply the creation of a plan, but an ongoing process including representatives of local government, the local fire service, representatives of the Colorado State Forest Service, and other relevant local stakeholders. Implementing this process at the local level aims at adapting national and state policies so they can take into account the specific environmental and social context of at-risk communities. Additionally, there are selective tax credits possible for homeowners in WUI areas who engage in wildfire mitigation methods (Extend Wildfire Mitigation Financial Incentive 2013).

Although these policies in place in 2013 were not sufficient to compensate for the severity of the wildfires, they did successfully evacuate the populations at risk. However, had mitigation policies been more effective before the 2013 wildfire season, displacement due to loss of homes could have been minimized. As a result of climate change, there is a heightened risk of severe fires like those in 2013 recurring, which is why it is necessary to adopt policies that will minimize the future impact of wildfires on residential areas so as to reduce displacement and the necessity of temporary evacuations.

2.2. Future Policy Options

It is unlikely that measures will be taken immediately that will mitigate the effects of climate change exacerbating wildfires, policy solutions to address wildfires must respond to the buildup of fuel and development in high-risk zones. Such policies will decrease the destruction of residential areas, subsequently reducing displacement, as well as lessen the necessity for temporary evacuations.

In addition to national-level policies, in Colorado specific policies are made at the state level addressing wildfire mitigation, including evacuation and recovery. Colorado Governor John Hickenlooper established the Wildfire Insurance and Forest Health Task Force to address statewide wildfire policy on 30 January 2013. The goal of this task force was to “identify and reach agreement on ways to encourage activities, practices, and policies that would reduce the risk of loss in wildland-urban interface areas, and provide greater customer choice and knowledge of insurance options” (Wildfire Insurance and Forest Health Task Force 2013). After the devastating consequences of the 2013 fires, it became evident that the work of the Task Force was all the more urgent. The Task Force released its final report in September 2013, but as of early 2014 none of the recommendations had yet been adopted by the Colorado state legislature.

The findings of the Task Force center around three main axes to mitigate wildfire disasters: legal requirements, increased awareness, and incentives. Within

each axis, specific policy and practical recommendations were made to address the practical realities of living with wildfire risk. Each year, wildfire risk grows as human development encroaches in the WUI. According a Colorado State University study cited in the Task Force Report, “the state’s growth of development in the WUI will increase from 715,500 acres in 2000 to 2,161,400 acres by 2030, a 300 percent increase” (Task Force 2013). If the problems related to wildfire vulnerability are not addressed now, this encroachment into the WUI will only exacerbate the damage done by wildfires.

One measure proposed by the Task Force is to build on the existing CO-WRAP (Colorado Wildfire Risk Assessment Portal) to enhance disclosure of risk to all relevant stakeholders. It suggests building on the current system with significant data collection in order to make the tool capable of measuring changes in mitigation outcomes on a specific property. To do so, risks will be quantified in order to give each property in the WUI a score representing its vulnerability. Scores will then be disseminated to stakeholders, including prospective homeowners, realtors, home builders, lenders, insurance providers, and local government to ensure they are well informed and able to take the appropriate mitigation measures (Task Force 2013: 2). Properties that score above a certain risk threshold will be audited. “These Audits will serve several goals: (1) they will provide disclosure to relevant stakeholders; (2) they will provide information to homeowners about what steps to take to reduce the CO-WRAP score; and (3) they will provide incentives for homeowners to act to reduce wildfire risks to their properties” (Task Force 2013: 2).

Brenkert-Smith et al (2012) identify changing the behavior of homeowners in fire-prone areas as the most effective way to mitigate wildfire consequences. Indeed, because much of the ignitability of homes and surrounding vegetation can be controlled by homeowners, mitigating this risk factor is one of the simplest and more effective immediate measures that can be taken to immediately reduce wildfire risk. However, to implement such a strategy effectively it is essential to coordinate best management practices so that homeowners do not receive conflicting recommendations, for example those given by the State Forest Service versus those given by local fire departments.

As a legal measure, the Task Force has recommended a special tax on properties located in the WUI, the revenues of which would go to fund wildfire mitigation activities. “This is consistent with the principle that homeowners in the WUI should take on the risks and associated costs of living in wildfire-prone areas.” (Task Force 2013: 3). An additional legal measure proposed by the Task Force is to modifying building codes within the WUI to ensure that buildings are designed and constructed with materials that limit flammability, however it recognizes that such a measure would not solve problems related to existing structures in the WUI.

Importantly, current policies maintain that residents themselves in the WUI area are expected to assume responsibility for risk mitigation; therefore support for relocation is limited or nonexistent. Insurance rates are cognizant of the fact that these homes are in high-risk areas. However, if homeowners themselves are to take on the burden of wildfire mitigation, there must still be support from the local government to enable such an approach to be community-based, because even one household does not comply it will increase risks for the entire neighborhood.

Additionally, although current evacuation policies are effective, as development in WUI areas continues evacuation infrastructure and policy must adapt. Some of this is as basic as adapting the necessary infrastructure, but this is often ignored, as Cova et al assert. “In most cases housing units are added to fire-prone canyons and hillsides without improving the road infrastructure. This means that although new roads may be added to a community to support the development of additional homes, an improvement in the number, direction, and capacity of the primary exits is much less common” (Cova 2013: 274). Without the necessary primary exits, traffic

flow during evacuation is slowed, potentially to a point that negates the efficacy of the evacuation. If development continues to be permitted in the WUI, strict policies must be in place to ensure the necessary infrastructure is in place for reducing wildfire risk and enabling evacuation.

Fortunately the displacement due to wildfires in Colorado is still primarily limited to short-term evacuations, but as the risk factors for wildfire intensify so does the risk for more long term displacement due to desire leave risk areas or destruction of homes. Such a situation will necessitate more intense, costly policy responses; therefore it is paramount that additional preventative policies be made now.

3. CONCLUSION

The 2013 Colorado wildfires, while the most destructive on record in terms of structures destroyed and acres consumed, resulted in minimal loss of life and displacement. Despite the number of communities threatened by the fires, and the number of homes that burned down, evacuation measures were successful in ensuring people had departed in time to prevent loss of life. However, those who did lose their homes were displaced and are now facing the difficult decision of whether to migrate away or return and rebuild. To prevent such displacement in the future, policies must not only be responsive to wildfires when they occur, but preventative to reduce the risk of future human and environmental consequences of wildfire. ♦

BIBLIOGRAPHY

- Brenkert-Smith, Hannah, Patricia A. Champ, and Nicholas Flores. 2012. Trying Not to Get Burned: Understanding Homeowners' Wildfire Risk-Mitigation Behaviors. *Environmental Management* 50:1139-1151.
- Colorado State Emergency Operations Plan. 2013. Evacuation Supporting Annex. <http://dhsem.state.co.us/sites/default/files/23%20SA%20Evacuation%20%20DONE.pdf> (consulted on 20 August 2014).
- Colorado Emergency Management. <http://www.coemergency.com/> (consulted on 25 April 2014).
- Colorado State Forest Service. Colorado's Wildland-Urban Interface. <http://csfs.colostate.edu/pages/wf-wildland-map.html> (consulted on 25 April 2014).
- Colorado State Forest Service. Interface Areas of High Wildfire Risk in Colorado Map. September 2004. http://csfs.colostate.edu/pages/documents/Redzone_11x17_flat.pdf (consulted on 25 April 2014).
- Cova, Thomas J., David M. Theobald, John B. Norman III, and Laura K. Siebenack. 2013. Mapping wildfire evacuation vulnerability in the western US: the limits of infrastructure. *GeoJournal* 78: 273-285.
- Creating a Prescribed Burn Program under the Division of Fire Prevention and Control. 2013. General Assembly of the State of Colorado. http://www.leg.state.co.us/CLICS/CLICS2013A/csl.nsf/fsbillcont3/5F5B370100DCF8DC87257A8C00507309?Open&file=083_enr.pdf
- Dash, Nicole, and Hugh Gladwin. 2007. Evacuation decision making and behavioral responses: Individual and household. *Nat. Hazards Rev.* 8(3): 69-77.
- Extend Wildfire Mitigation Financial Incentive. 4 April 2013. General Assembly of the State of Colorado. http://www.leg.state.co.us/CLICS/CLICS2013A/csl.nsf/fsbillcont3/1384C4AC0C3740D287257A8E0073CB66?Open&file=1012_enr.pdf
- Flannigan, M. D., B. D. Amiro, K. A. Logan, B. J. Stocks, Wotton, B. M. 2006. Forest Fires and Climate Change in the 21st Century. Mitigation & Adaptation Strategies for Global Change. 11(4): 847-859
- Healthy Forests Restoration Act of 2003. Pub. L. 108-148. 117 Stat. 1887. 7 January 2003.
- <http://www.gpo.gov/fdsys/pkg/BILLS-108hr1904enr/pdf/BILLS-108hr1904enr.pdf> (accessed 30 August 2014).
- Nawrotzki, Raphael J., Hannah Brenkert-Smith, Lori M. Hunter and Patricia A.
- Champ. 2014. Wildfire-Migration Dynamics: Lessons from Colorado's Fourmile Canyon Fire, Society & Natural Resources: An International Journal, 27 (2): 215-225.
- Schneider, Daniel J., Laura Keeney, and Leo Postvoit. 2013. "Timeline: 2013 Colorado Wildfires." In Denver Post. Denver, Colorado.
- Wildfire Insurance and Forest Health Task Force. 2013. Report to The Governor of Colorado, The Speaker of the House of Representatives and the President of the Senate. Prepared by Catherine M. van Heuven, Kaplan, Kirsch & Rockwell, LLP. 1-80.

Floods and displacement in Bolivia

In Bolivia, floods are not a new phenomenon. Nearly every year, this type of disaster occurs during the rainy season. Despite this seasonality, the socio-economic consequences are still impressive. To make matters worse, the effects of climate change are expected to increase further the intensity and frequency of extreme weather events in the poorest country of South America.

In late 2013, torrential rains started earlier than usual and became a matter of national concern in January 2014, after several casualties and increasing displacement. The high precipitation induced landslides and led rivers to overflow, causing widespread flooding in the country's low lands and plains. By late April 2014 the floods had almost ended. According to national authorities, the floods were the worst disaster in 40 years, killing at least 59 people and affecting more than 60,000 households. The departments of Beni, in Amazon's region, La Paz, Cochabamba and Santa Cruz were the most affected.

Apart from higher rainfall, there are allegations that dams built in the Amazon basin on the Brazilian territory contributed to amplifying the disaster, especially in Beni. The topic is controversial and refused by Brazilian authorities and experts. However, both countries have agreed to investigate the impacts of the dams in Bolivia.

Disaster management, amid an electoral year, was highly marked by political interests, compromising evacuation processes and humanitarian aid.

This paper will assess the causes of the recent disaster, the consequent displacement and the related policy responses. Particular attention will be given to Beni, the most affected department, which concentrates the most significant portion of internally displaced persons (IDPs), here understood as the people who were forced to flee from their homes due to the floods but remained in Bolivian territory. Finally, the paper will be concluded with policy recommendations aimed at reducing the vulnerability of Bolivian local communities to floods.

1. CAUSES AND CONSEQUENCES OF NATURAL DISASTERS IN BOLIVIA

1.1. Socio-economic and environmental issues

Located in a region with climate extremes and diverse ecosystems, ranging from Andean mountains to the lowlands plains of Amazon Basin, Bolivia is highly exposed to natural hazards (Oxfam, 2009). This condition is exacerbated by socio-economic vulnerabilities, as Bolivia is one of the least developed countries in Latin America, with high levels of inequality (Central Intelligence Agency, 2014). About half of the

population (49.6%) of the 10.6 million inhabitants live below the poverty line, which means with less than the international standard of \$2 per day (Central Intelligence Agency, 2014). Poverty affects mainly indigenous people, which represent roughly 66% of Bolivia's population (Oxfam, 2009).

Bolivia is one of the most affected countries by extreme weather events in the world, ranking 39th in the Global Climate Risk Index for 1993–2012 (Kreft et al., 2013). Since 2006, when President Evo Morales was elected, the country has declared at least eight national states of emergency due to natural disasters, especially floods (World Bank, 2013 and El Diario, 2014a).

The inauguration of President Morales brought dramatic changes to the Bolivian political landscape. The left-wing head of state raised minimum wage, promoted land reform and increased state control over companies acting on hydrocarbons, mining and energy sectors (World Bank, 2014). These measures succeeded in improving living standards of the poor but at same time increased tensions among social and political groups (World Bank, 2014). In 2009, a new Constitution was approved, establishing the Plurinational State of Bolivia. In the same year, Morales was reelected and his party, Movement for Socialism (MAS), held, and still hold, the majority in the Congress (Central Intelligence Agency, 2014). In 2013, the legislative branch of the government passed a law modifying the Constitution and allowing Morales to run for a third term in the next presidential elections, which will be held at the end of 2014 (Folha de S.Paulo, 2013).

Throughout the past five years, Bolivia has sustained rapid economic growth mainly due to high commodity prices (Central Intelligence Agency, 2014). A historically high level of gas production and a rise of consumption drove an economic growth of 6.4% in 2013 (Cepalstat, 2014).

1.2. Higher precipitation

In 2013, the torrential rains are considered to have started earlier than usual. The starting date varies in the press; with some articles stating that the rains began in late September while others affirm that the beginning was in October (AFP, 2014 and Aljazeera, 2014). However, normally, the rainy season starts in November. The National Meteorology and Hydrology Service (SENAMHI) of Bolivia was contacted both by phone and email but did not provide any information. According to an assessment conducted by a Bolivian institution on SENAMHI data, from December 2013 to February 2014, in Beni it rained twice as much as it rained in the previous period (Fundación Milenio, 2014).

The alteration on precipitation patterns could be a consequence of climate change. Indeed, global warming impacts are expected to highly affect Bolivia, with changes in the water cycle and more frequent and intense floods being projected to have major consequences for the country (World Bank, 2013 and Oxfam, 2009).

The diversity of Bolivia's biomes also implies that the country is exposed to different climate change impacts, including more frequent droughts, diminishing water availability due to the melting of glaciers, food insecurity, higher incidence of rainforest fires and mosquito-borne diseases (Oxfam, 2009).

The torrential rains led many rivers to overflow causing widespread flooding in the country's low lands. The socio-economic consequences of the disaster, including several casualties and high displacements, led President Morales to declare a national state of emergency in late January. Such an instrument allows local authorities at different levels to make budget reallocations in order to assist the disaster's victims (Al Jazeera, 2014).

More than 140 municipalities, or about one third of the country, were affected by the large-scale floods, which in some areas persisted until April (Bolivia 2014). Even towns that had not been hit by the rains were inundated by the overrun of rivers (interview conducted on 4 April 2014).

Map 1. Bolivia's departments and rivers.



Map No. 3875 Rev. 3 UNITED NATIONS
August 2004

Department of Peacekeeping Operations
Cartographic Section

Source: UN

The heavy rains and flooding destroyed houses and undermined agriculture and livestock activities, hampering the livelihoods of thousands of households. The disaster also damaged infrastructure, including bridges and roads, cutting off several communities from the rest of the country and compromising their access to food and drinking water (Gouel, 2014).

According to official data, the recent floods killed at least 59 people and have affected more than 60,000 households (EFE, 2014). In Beni, seven out of eight provinces were largely flooded due to the overflow of the Mamore and Beni rivers, affecting more than 22,000 households (El Dia, 2014).

The resulting damages and losses are still being estimated. According to the General Secretary of the government, Raúl Roca, the total number of cattle killed in the country could reach 900,000 (Azcuí, 2014c). Preliminary data suggests that only in Beni more than 450,000 heads of cattle were killed or about 14 percent of the total cattle population of this region. Overall, Beni's economic losses could reach higher than 270 million dollars (Acevedo Luna, 2014).

National authorities have classified the recent disaster as the worst in the past 40 years (Infobae, 2014). Morales stated that the recent rains were much more intense than those in the first three years of his mandate and the consequences, especially in Beni, were without precedent in Bolivia's history (EFE, 2014).

In Morales' first term, Bolivia faced exceptional precipitation due to the phenomena of El Niño in 2006/2007 and La Niña in 2007/2008. Coupled with inappropriate infrastructure, the extreme weather events led to catastrophic floods and landslides. It is estimated that El Niño affected 258,460 persons and resulted in an economic impact equivalent to 443 million dollars or 4 percent of Bolivia's GDP in 2007 (ECLAC/World Bank, 2014). The consequences of La Niña in the following year were considered even worse: 618,740 individuals affected and economic damages and losses equivalent to 511 million dollars (ECLAC/World Bank, 2014). Bolivian economists believe that the aggregated economic losses and damages of the recent floods could overpass the 2008 impacts, especially due to impacts on the livestock sector (Acevedo Luna, 2014).

1.3. Human-induced environmental changes

Bolivia has high rates of deforestation, which increases the intensity of floods due to the removal of the natural protection of the soil. It is estimated that deforestation reaches about 300,000 hectares per year in the country, mainly driven by the expansion of soybean crops and cattle livestock in Santa Cruz and Beni departments (Oxfam, 2009). Furthermore agricultural activities in Beni rely on slash and burn techniques that also reinforce the risk and intensity of floods (Acevedo Luna, 2014).

Another factor that Bolivian experts affirm to have contributed to the floods' intensity in Beni is the building of two Brazilian dams in Madeira River, the latter being the border between both countries. The hydroelectric power plants of Santo Antonio and Jirau, which are under construction, are said to have slowed down the river flow upstream, increasing the deposit of sediments into the river and thus augmenting the level of overflow during the rainy season (Azcuí, 2014b and Chávez, 2014).

Brazilian authorities and experts reject such allegations. They state that the reservoirs are small and that the dams are located far from the border (Chávez, 2014). It is worth noting that on the Brazilian side of the Amazon basin, the states of Rondonia and Acre have faced intense floods due to the unprecedented level of Madeira River – the river rose more than 17.5 meters, the historical record. At least 12,500 Brazilians have been displaced (Damasceno, 2014). Currently there are no conclusive studies showing that the dams are responsible for the floods in the Amazon region. In March 2014, the governments of both countries agreed to start investigations on the possible link between the dam construction and the resulting floods (Azcuí, 2014b).

2. ANALYSIS OF THE DISPLACEMENT

2.1. Patterns of displacement

The recent torrential rains and long lasting floods played a crucial role in the displacements incurred in Bolivia. Socio-economic issues were also significant drivers of such forced displacement. According to Walter Arce, IOM Chief of Mission in Bolivia, the most affected households by the natural disaster were the low-income population, highly dependent on subsistence agricultural activities (interview conducted on 4 April 2014). The majority of victims lived in lowlands situated in riverbanks and thus flood-prone zones. Arce affirms that 250 households which were resettled in highland zones in the wake of the 2008 catastrophic floods were not affected by the 2013/2014 inundations. This suggests that broader resettlement programs could enhance the Bolivian communities' resilience in the event of future floods.

In 2014, the displacement triggered by the floods occurred in various ways; mainly within Bolivia's borders. In most cases people were forced to flee, sometimes without governmental assistance (AFP, 2014). When the assisted evacuation occurred, it was typically made post-disaster. Both temporary and permanent displacement occurred as a result of floods. The IOM Chief of Mission in Bolivia affirmed that some families would be able to return to their homes within two or three months (interview conducted on 4 April 2014). Other households would need to be resettled.

At the onset of the floods, the communities were unprepared; without options of temporary housing, stocks of food and adequate drinking water (Huañapaco, 2014).

The intermittent rain complicated the rescue and humanitarian aid distribution, which in many cases could only be made through the use of helicopters, airplanes or boats. In Beni, for instance, a joint effort of navy and army officials took a 39-hour journey by boat to reach isolated communities in Santa Maria in late January. According to the Presidency Minister Juan Ramon Quintana, the boat would provide the local population with staple food, drinking water, medical care and evacuate people voluntarily if they wanted to go to the city of Trinidad, capital of Beni, or other locations in safer conditions. In these cases, the dwellers had the option of taking a ride on the boat in its journey back (Sanchez, 2014).

Unlike the case of Santa Maria, in many communities people were forced to move to high lands, as houses were destroyed or submerged. In Puerto Ballivian, an isolated community near Trinidad, the only dry place was near the village school. When the first humanitarian teams arrived, families were sheltered in the building's patio (Samaritan's Purse, 2014).

According to Bolivia's human rights Ombudsman Rolando Villena, in the Isiboro Secure National Park and Indigenous Territory (TIPNIS), a community-owned land located between the north of Cochabamba and the south of Beni, several indigenous families have left their homes without any type of assistance. In late February, Villena stated that the conditions of isolated indigenous populations were critical, as humanitarian aid was not reaching them. Moreover, there was not adequate information on their living conditions (Erbol, 2014). Morales' second term has been marked by conflicts with TIPNIS communities who oppose the building of a controversial highway, which would divide their territory (Usi, 2013).

In late February, the Mayor of Santa Ana (a municipality of Beni), Gustavo Antelo, affirmed that all the local communities of Santa Ana were underwater and the population had been evacuated to disaster shelters. The local authorities also launched a health warning aimed at avoiding fish consumption after floods reached the sewage treatment pounds (Azcuí, 2014a).

In early March 2014, populations in vulnerable neighborhoods of Guayaramerín, one of the most affected municipalities in Beni, were evacuated to camps, as the mounting level of Mamore River, the largest in Bolivia, became an increasing threat to a structure aimed at detaining the river's overflow (Cartagena 2014). On the border

with Brazil, Guayaramerín is located in a region where all the accumulated water of Bolivia's rivers flows towards them from the Andes towards the Atlantic Ocean. Mamore unites with Beni River to form the Madeira River.

In early April 2014, Mamore flows continued to increase, flooding both urban and rural areas of Guayaramerín. By that time, the evacuation process was still ongoing and some displaced people had to cross international borders. Approximately 120 families had to be sheltered in Brazil, as the level of Mamore River hindered their transfer to Bolivian shelters. Preliminary data estimated more than 2,500 households affected. In the city of Guayaramerín, although the inundation hampered the access to houses, some owners resisted to go to shelters trying to protect the remainder of their belongings (*El Diario*, 2014e).

According to the Emergency Operations Center (COE), nearly all the public facilities in Guayaramerín were used as shelters and school classes were suspended until mid-April, when the water level started to decline, in order to accommodate the displaced people (*El Diario*, 2014d).

2.2. Disaster shelters and camps

Internally displaced persons - henceforth referred to as "IDPs" - were sheltered in educational and sport facilities, exhibition venues and improvised camps. The federal and local governments, with support of international organizations, such as the United Nations, distributed tents for thousands of households. Governments of other countries such as Italy, Argentina, Brazil, Venezuela and the United States also assisted with humanitarian aid (*Economía Bolivia*, 2014b).

In Trinidad, Beni's capital, three generations inhabited the same tent. Rosa, Graciela and Cibeles, grandmother, mother and daughter, shared a 16-square-meter tent with five other members of their family (*World Food Program*, 2014). One of the evacuees, Cristina Moye, from Puerto Geralda, stated that in her shelter the food provided consisted only of rice, noodles and chicken innards (*Pérez*, 2014).

Besides food issues and poor water and sanitation services, IDPs also faced the risk of disease exposure. By the beginning of April, there were more than 100 thousands registered cases of health problems among the affected population in approximately 150 disaster shelters, including respiratory infection, mycosis and acute diarrheal disease. In Riberalta, at least two cases of dengue were recorded in shelters. In this municipality, located in Beni, at least 90 communities were affected by the floods and 29 shelters were set (*Agencia Boliviana de Información*, 2014).

The International Organization for Migration (IOM) in Bolivia has worked to transform improvised shelters into "model camps" aimed at improving the living conditions of the displaced persons. In these camps the families were sheltered in tents and had access to electricity. In addition, the organization has worked jointly with the NGO 'Action Against Hunger' to provide water and sewage treatment for the camps as well as transportation for displaced children to attend school. In partnership with the federal and local governments and supported by the Spanish Agency for International Cooperation and Development (AECID), IOM established a camp with 250 family-size tents in Trinidad, where even the shelters had been flooded (*IOM*, 2014; *Economía Bolivia*, 2014b). Another camp with tents for 500 families was set-up in Guayaramerín (*IOM*, 2014).

2.3. Divergent numbers

As common in many cases of internal displacement, it is difficult to obtain a reliable total figure of IDPs in Bolivia. Bolivian official data from late February 2014 reports that approximately 60,000 households were affected by the flooding (*EFE*, 2014). This number is probably higher as floods lasted until April 2014 and there is no data on isolated communities. Official reports only inform aggregated data regards to the number of IDPs, meaning that it is not possible to determine the total number of

people affected or displaced. This could be regarded as a way of reducing public perception with regards to the social consequences of the flooding. The World Food Program, in turn, estimates that floods have affected 325,000 people (El Diario, 2014j).

Press coverage, especially foreign reported articles, use the Figure for families affected as the number of households displaced. This also seems to be the case in IOM reports, which mention 68,000 homeless families (IOM, 2014). The Spanish newspaper El País reported that there were some 200,000 people displaced and 75,000 households affected (Azcuí, 2014c) without providing the data source. The IOM Chief of Mission in Bolivia, Walter Arce, however, highlights that the official Figure of households affected by the floods does not only refer to IDPs but also, for instance, to families who lost agricultural production and remained in their lands (interview conducted on 4 April 2014). According to Arce the number of displaced households by early April was 7,000. This estimation does not take into account the indigenous communities of TIPINIS, from which there is a lack of accurate data.

In Beni, floods affected more than 22,000 households in several municipalities and indigenous communities according to the governor of this region, Carmelo Lens (El Diario, 2014i).

3. DISASTER RISK MANAGEMENT AND POLICY RESPONSES

3.1. Lack of disaster prevention

Socio-economic damages due to the recent floods can be considered, at least to some extent, as a consequence of the lack of appropriate disaster risk management at both the local and national level. Precipitation in the last season have exceeded records of past years and floods are expected to occur in Bolivia on a yearly basis and are becoming increasingly severe. The rise of floods intensity can be perceived, for instance, by reading news from the past seven years. Press articles from 2007/2008, for example, considered the floods at that time the worst in Bolivia. Four years later, national authorities classified the 2012 floods as the worst. In 2014, the floods reached a new record, being considered even more severe (Stephanes, 2012).

In spite of past disasters and the projections that floods might become more frequent due to climate change, little has been done to reduce the vulnerability of communities. Many affected households were living in flood-prone zones and the authorities do not rely on early warning systems or a logistic instrument for risk management (Acevedo Luna, 2014). In addition, deforestation and some agricultural practices increased the intensity of floods (Acevedo Luna, 2014).

Marcelo Higuera, a Bolivian expert in natural resources, states that although Bolivia has several laws in place concerning the environment and risk management, they are often not effective in practice. An example of this is the 2000 law for risk reduction and disaster response aimed at establishing a legal landscape to encourage a reduction of socio-economic vulnerabilities of Bolivia and an appropriate management of natural, technological and man-made disasters. Higuera affirms that Bolivian policies concerning disaster management adopt a post-event approach rather than a prevention perspective. The expert points out, however, that the government of Santa Cruz as well as some municipal governments, including the city of La Paz, has been implementing climate change adaptation programs (Acevedo Luna, 2014).

Moreover, public investments on disaster risk management are low and are not encouraged by Bolivian law. According to the public spending specialist economist Jimmy Osorio, the public expenditure from the departments and municipal governments on disaster risk management is less than 2% of total investment as such expenditure is optional (Acevedo Luna, 2014). Furthermore, he highlights that the spending on risk management is related to rehabilitation and rebuilding, confirming the small investment in prevention.

Economist Armando Méndez, economic policy specialist and former president of Bolivia's Central Bank, considers that the Bolivian government could have carried out infrastructure work, such as the channeling of rivers and the building of retaining walls during the dry seasons in order to avoid socio-economic damages (El Diario, 2014b). These types of initiatives would have possibly spared authorities from urgent measures such as to build retaining walls in the face of rivers' overflows. This can be illustrated by the case of Santa Ana, in Beni, where the federal and local governments with Venezuela's support, worked to build a retaining wall to protect the urban center as the level of Mamore River was dramatically increasing. According to official reports, helicopters had to transport the sand required for this civil work (Azcui, 2014a). A similar situation occurred in San Joaquin, also in Beni, where municipal authorities attempted to build a structure to detain the flooding after 70 percent of the town's population had been already affected by the flood and 70 households were evacuated (Peredo, 2014).

It is worth noting that in 2007 the World Bank approved a 12.5 million dollar project aimed at helping Bolivia to implement its National Plan for Sustainable Rehabilitation and Reconstruction, launched in the wake of the natural disaster due to El Niño 2006/2007. The project was also aimed at strengthening Bolivia's ability to respond to future adverse natural hazards (World Bank, 2014). In 2008, following La Niña, the budget of the Emergency Recovery and Disaster Management Project was increased to 16.5 million dollars (World Bank, 2014).

The World Bank's project focused on rebuilding infrastructure including roads, bridges and river flood walls, as well as on fostering instruments and tools to be incorporated in disaster risk management (World Bank, 2013). For example, the initiative encouraged the improvement of SENAMHI's forecasting capability and carried out institutional capacity building trainings on risk management (World Bank, 2014). The Bank considered the project's results, which ended on September 2013, as satisfactory, despite several difficulties regarding its implementation. The volatile political situation, high turnover of government officers and disagreement between national and departments governments over responsibility for prevention efforts are among the main challenges identified against the project's effectiveness (World Bank, 2014). The World Bank considers that, in spite of recent progress on Bolivia's legislative framework, there are currently still significant legislative gaps and lack of operational capability with regard to disaster risk management (World Bank, 2014).

3.2. Political schisms and consequences on humanitarian efforts

The assistance to the victims of floods was highly poisoned by political schisms. Tensions, disagreements and exchanged accusations between the federal and departments government resulted in a lack of coordination, duplication of efforts and inequality in the distribution of humanitarian aid. There are also allegations that public assistance was politically driven at different levels, leading to an unequal assistance between communities that supported the governments and their opponents.

According to Bolivia's human rights Ombudsman Rolando Villena, certain areas were provided with food and drinking water more frequently than others. Certain households received support from the federal, state and municipal governments while others received no assistance whatsoever (Pérez, 2014). The situation is said to be particularly prevalent in Beni, where Morales's MAS party never won elections. Indigenous populations in TIPINIS have also been considered as the least assisted groups (El Diario, 2014c). The Ombudsman Villena was elected in 2010 by the Plurinational Legislative Assembly for representing the interests of the Bolivian people through investigating and addressing complaints of human rights violation.

However, federal authorities refused these allegations. The Ministry of Defense Rubén Saavedra, for example, accused the Ombudsman Rolando Villena of allowing politics to influence his statements following the natural disaster and affected

households. Saavedra stated that the federal government provided more than 900 tons of humanitarian aid (Pérez, 2014).

On the other hand Bolivia's human rights Ombudsman, the governor of Beni and representatives of the Catholic Church affirmed that humanitarian aid was insufficient to meet the affected households' needs. They insisted that the federal government should have declared a state of disaster in the departments of Beni, Pando and La Paz (Economía Bolivia, 2014a). According to Bolivian Law 2140 on emergencies and disasters, this mechanism facilitates the receiving of international aid (Pérez, 2014).

President Morales refused to declare a state of disaster affirming that the government had sufficient conditions to help Bolivians (Agencia Boliviana de Información, 2014). The opposition accused the President of taking this stance due to political motivations (El Diario, 2014h).

Members of the government, in turn, alleged that Beni's request of declaring a state of disaster had political motivations. The Bolivian Vice President, Álvaro García Linera, said that the governor of Beni and the mayors of such department wanted to save money for electoral campaigns (Pérez, 2014).

3.3. Rebuilding plan and recommendations

In the wake of the 2014 natural disasters, the Morales government presented the Plan Patujú, aimed at rebuilding and rehabilitating the zones impacted by the rains and floods as well as preventing future disasters. According to Morales, 476 million dollars will be invested in disaster risk management, both in rehabilitation and prevention (Los Tiempos, 2014).

The Bolivian president states that the Plan will focus on enhancing infrastructure, including road rehabilitation, the building of dikes and rebuilding of damaged houses. The strategy focuses on investments in sanitation, cash transfers for small farmers and a program to foster cattle herd repopulation. In addition, Morales pledged to allocate 2.6 million dollars in new resettlement programs (Los Tiempos, 2014). A policy to assist the affected households to overcome economic losses is essential and could help to reduce the risk of migration to urban areas as a mean to escape poverty.

Before the announcement of the Plan Patujú, federal authorities affirmed that 30,000 hectares of state owned lands would be used for the resettlement of 600 affected households in the province of Santa Cruz (Agencia Boliviana de Información, 2014). According to the Vice Minister of Land Jorge Barahona, the resettlement process would be voluntary, meaning that the families would choose whether to move or not. (Agencia Boliviana de Información, 2014).

In order to prevent further displacement and other severe consequences due to floods, Bolivia has to implement measures to reduce communities' vulnerability. High priority should be given to improving the livelihoods of those affected, enabling them to escape poverty and move to safer areas with increased job opportunities. Resettlement programs should aim at significantly reducing the number of people living in flood-prone zones. This could also be an important adaptation strategy against the impacts of climate change. Apart from reducing environmental vulnerabilities, it is essential to foster the economic inclusion of the resettled people, since with the resettlement they tend to lose their means of livelihood thus increasing their economic vulnerability. However, in order for these programs to succeed, they have to be based on sound science data and to be designed jointly with communities.

Another crucial measure is to build appropriate infrastructure aimed at diminishing the risk of inundation, such as the channeling of rivers and retaining walls. It is also necessary to put in place effective early warning systems to enable people to evacuate before a natural disaster strikes. This could reduce the number of victims and cases in which people are cut off geographically from the rest of the country, losing access to essential provisions. Moreover, the communities have to

be educated on how to react in emergency situations. Policies should also target the reduction of deforestation rates and agriculture practices that increase the risk of floods as well as to foster reforestation programs.

In addition, disaster risk management in Bolivia should focus on prevention and be carried out in coordination with different levels of the government. The views of various stakeholders, including the local communities, should be taken into account during the design of these policies. It could be made, for instance, through public consultations.

4. CONCLUSION

The recent natural disasters in Bolivia can be considered partially as man-made disasters. Human activities have not only contributed to increasing the communities' vulnerability to natural hazards but are also likely to have augmented their intensity. A large portion of the population affected were socially vulnerable and lived in flood-prone zones, being forced to flee when the disaster occurred.

Besides the lack of risk prevention, crisis management, including the distribution of humanitarian aid and the evacuation process, was negatively affected by political rivalries. As a result, many families were forced to flee without assistance. Even those families relying on public support were accommodated in improvised shelters, with poor services.

Climate change is expected to further increase the frequency and intensity of extreme weather events in Bolivia. In order to cope with these impacts, disaster risk management is needed. Such strategies should focus on prevention, reducing the population's exposure to disasters and the resulting effects. Resettlement programs may be a crucial strategy to adapt to climate change, if well designed.

At the same time, it is necessary to take appropriate measures to reduce the factors that increase the risk and intensity of floods. The impacts of Brazilian dams in Bolivia have yet to be investigated, and if proven, appropriate actions would be required to lower their effects.

As natural hazards are likely to continue to take place in Bolivia, the government should take advantage of the recent economic growth and implement comprehensive policies in order to prevent the country from facing major disasters and consequent displacement on a yearly basis. Better coordination among the different levels of government is also needed to guarantee that the country's population will be equally and more efficiently assisted in the event of natural disasters. ♦

BIBLIOGRAPHY

ARTICLES

- Boano, Camillo, Zetter, Roger and Morris, Tim. 2007. *Environmentally displaced people: Understanding the linkages between environmental change, livelihoods and forced migration*. Oxford: Refugee Studies Centre
- Brown, Oli. 2008. *Climate Change and Migration*, International Organization for Migration (IOM)

BOLIVIAN GOVERNMENT'S RELEASES

- Agencia Boliviana de Información. 14 February 2014. *Gobierno Asegura que Tiene Fortaleza Suficiente para Expandir Presencia en Zonas de Desastres*. In Ministry of Defense. Retrieved from www.mindef.gob.bo/mindef/node/1249
- Agencia Boliviana de Información. 26 March 2014. *Otorgarán tierras fiscales en Santa Cruz para reubicación de 600 familias damnificadas por lluvias*. Retrieved from <http://www3.abi.bo/nucleo/noticias.php?i=2&j=20140326145202>

BOOKS AND REPORTS

- Oxfam International. 2009. *Bolivia: cambio climático, pobreza y adaptación*. La Paz, Bolivia
- World Bank. 2014. *Bolivia - Emergency Recovery and Disaster Management Project*. Washington, DC : World Bank Group. <http://documents.worldbank.org/curated/en/2014/03/19377603/bolivia-emergency-recovery-disaster-management-project>
- Kreft, Sönke and Eckstein, David. 2013. *Global Climate Risk Index 2014 Who Suffers Most from Extreme Weather Events? Weather-Related Loss Events in 2012 and 1993 to 2012*. Germanwatch e.V.

INTERNATIONAL ORGANIZATIONS AND NGOS ARTICLES AND REPORTS

- Fundación Milenio. 2014. *Lluvias excesivas y desbosques*. Retrieved from <http://www.fundacion-milenio.org/Informe-Nacional-de-Coyuntura/coy-232-perdidas-economicas-por-inundaciones-enero-febrero-de-2014.html>
- Gouel, Elisabeth. 2014. *Assistance to survivors of long lasting floods, Bolivia*. ACT Alliance, Switzerland.

Retrieved from <http://www.trust.org/item/20140317143623-min2r/?source=hppartner>

- International Organization for Migration (IOM), 18 March 2014. *Bolivia: IOM builds model camps after floods displace 68,000 families*. Retrieved from www.iom.int/cms/en/sites/iom/home/news-and-views/press-briefing-notes/pbn-2014/pbn-listing/iom-builds-model-camps-after-flo.html
- Samaritan's Purse International Relief. 2014. *Aid for Bolivia Flood Victims*. Retrieved from <http://www.samaritan.org/article/helping-bolivia-flood-victims/>
- United Nations Office for the Coordination of Humanitarian Affairs (OCHA). 2004. *Guiding principles on internal displacement*.
- World Bank, 25 April 2013. *Bolivia faces the force of nature*. Retrieved from <http://www.worldbank.org/en/news/feature/2013/04/25/Bolivia-faces-the-force-of-nature>
- World Food Program. 2014. *Bolivia: un techo, el cobijo para no zozobrar*. 28 February retrieved from <http://es.wfp.org/Bolivia-un-techo-el-cobijo-para-no-zozobrar>

INTERVIEW

- Interview with Walter Arce, IOM Chief of Mission in Bolivia, conducted by phone on 4 April 2014

PRESS ARTICLES

- Acevedo Luna, Ismael. 30 March 2014. *Pérdidas por el clima pasarán a las del 2008*. In El Dia, retrieved from http://www.eldia.com.bo/index.php?c=Portada&articulo=Perdidas-por-el-clima-pasaran-a-las-del-2008&cat=1&pla=3&id_articulo=141885
- AFP, 15 February 2014. *Bolivia comienza a recibir la ayuda internacional por las inundaciones*. In Infobae. Retrieved from <http://www.infobae.com/2014/02/15/1543891-bolivia-comienza-recibir-la-ayuda-internacional-las-inundaciones>
- Aljazeera, 8 February 2014. *Deadly floods drown swathes of Bolivian land*. Retrieved from <http://www.aljazeera.com/video/americas/2014/02/deadly->

[floods-drown-swathes-bolivian-land-201428264949462.html](http://www.aljazeera.com/video/americas/2014/02/deadly-floods-drown-swathes-bolivian-land-201428264949462.html)

- Azcui, Mabel. 25 February 2014a. *El anuncio de lluvias en Bolivia causa zozobra entre la población*. In El País, La Paz. Retrieved from http://internacional.elpais.com/internacional/2014/02/25/actualidad/1393351882_457978.html
- Azcui, Mabel. 8 March 2014b. *Brasil e Bolivia dispostos a reavaliar os efeitos das inundações nas duas represas*. In El País, La Paz. Retrieved from http://brasil.elpais.com/brasil/2014/03/08/internacional/1394247277_205721.html
- Azcui, Mabel. 12 March 2014 c. *Na Bolívia, cheia afetou 75.000 famílias e pode ter matado 900.000 gados*. In El País, La Paz. Retrieved from http://brasil.elpais.com/brasil/2014/03/12/internacional/1394652388_186847.html
- Bolivia. 17 February 2014. *58.691 familias afectadas, 56 personas fallecidas y 11 desaparecidas por lluvias*. Retrieved from <http://www.bolivia.com/actualidad/nacional/sdi/81810/58691-familias-afectadas-56-personas-fallecidas-y-11-desaparecidas-por-lluvias>
- Cartagena, Jenny. 9 March 2014. *San Joaquín inicia evacuación en zonas riesgosas*. In Los Tiempos. Retrieved from http://www.lostiempos.com/diario/actualidad/nacional/20140309/san-joaquin-inicia-evacuacion-en-zonas-riesgosas-247378_539810.html
- Chávez, Franz. 4 April 2014. *Brazilian Dams Accused of Aggravating Floods in Bolivia*. In Inter Press Service. Retrieved from <http://www.ipsnews.net/2014/04/brazilian-dams-accused-aggravating-floods-bolivia/>
- Damasceno, Ivanete. 18 March 2014. *Maior cheia do Rio Madeira completa um mês, e rio continua a subir em RO*. In G1. Retrieved from <http://g1.globo.com/ro/rondonia/noticia/2014/03/maior-cheia-do-rio-madeira-completa-um-mes-e-rio-continua-subir-em-ro.html>
- EFE. 22 February 2014. *Ascienden a 59 los fallecidos por inundaciones en Bolivia*. In El Deber, retrieved from <http://www.eldeber.com.bo/ascienden-a-59-los-fallecidos-por-inundaciones-en->

- bolivia-/140222143514
- Economía Bolivia. 27 February 2014a. *Iglesia Católica y Defensor del Pueblo piden declarar zona de desastre a Beni*. Retrieved from <http://www.economiabolivia.net/2014/02/27/iglesia-catolica-y-defensor-del-pueblo-piden-declarar-zona-de-desastre-a-beni/>
 - Economía Bolivia. 18 April 2014b. *Pese a no declarar "zona de desastre", fluye la ayuda internacional*. Retrieved from <http://www.economiabolivia.net/2014/02/18/pese-a-no-declarar-zona-de-desastre-fluye-la-ayuda-internacional/>
 - EL Día. 10 March 2014. *Son 22 mil las familias afectadas por las lluvias en el Beni*. Retrieved from http://www.eldia.com.bo/index.php?cat=1&pla=3&id_articulo=140374
 - El Diario. 28 January 2014a. *Gobierno decreta emergencia nacional para socorrer a damnificados*. Retrieved from http://www.eldiario.net/noticias/2014/2014_01/nt140128/sociedad.php?n=56&gobierno-decreta-emergencia-nacional-para-socorrer-a-damnificados
 - El Diario. 3 February 2014b. *Gobierno debería tomar medidas preventivas en época de lluvias*. Retrieved from <http://www.economiabolivia.net/2014/02/03/gobierno-deberia-tomar-medidas-preventivas-en-epoca-de-lluvias/>
 - El Diario. 1 March 2014c. *Esfuerzos divididos no garantizan alimentos para los damnificados*. In FM Bolivia. Retrieved from <http://www.fmbolivia.com.bo/noticia137764-esfuerzos-divididos-no-garantiza-alimentos-para-los-damnificados.html>
 - El Diario. 3 April 2014d. *Guayaramerín en su peor momento por inundaciones*. Retrieved from http://www.eldiario.net/noticias/2014/2014_04/nt140403/nacional.php?n=96&guayaramerin-en-su-peor-momento-por-inundaciones
 - El Diario. 4 April 2014e. *Familias son evacuadas a región fronteriza brasileña*. Retrieved from http://www.eldiario.net/noticias/2014/2014_04/nt140404/sociedad.php?n=65&familias-son-evacuadas-a-region-fronteriza-brasilenia
 - El Diario. 4 April 2014f. *Evacuación*
 - *decenas de familias a región fronteriza de Brasil*. Retrieved from http://www.eldiario.net/noticias/2014/2014_04/nt140404/principal.php?n=104&evacuan-decenas-de-familias-a-region-fronteriza-de-brasil
 - El Diario. 5 April 2014g. *Evaluación de daños continúa en el Beni*. Retrieved from http://www.eldiario.net/noticias/2014/2014_04/nt140405/sociedad.php?n=39&
 - El Diario. 8 April 2014h. *Consignas políticas perjudican asistencia a familias benianas*. Retrieved from http://www.eldiario.net/noticias/2014/2014_04/nt140408/sociedad.php?n=88&consignas-politicas-perjudican-asistencia-a-familias-benianas
 - El Diario. 9 April 2014i. *Comenzarán a reconstruir Beni y preocupa las próximas lluvias*. Retrieved from http://www.eldiario.net/noticias/2014/2014_04/nt140409/sociedad.php?n=75&comenzaran-a-reconstruir-beni-y-preocupa-las-proximas-lluvias
 - El Diario. 11 April 2014j. *Programa Mundial de Alimentos reporta 325 mil afectados en el país*. Retrieved from www.eldiario.net/noticias/2014/2014_04/nt140411/sociedad.php?n=57&programa-mundial-de-alimentos-reporta-325-mil-afectados-en-el-pais
 - El Diario. 16 April 2014k. *Personas damnificadas*. Retrieved from http://www.eldiario.net/noticias/2014/2014_04/nt140416/sociedad.php?n=98&personas-damnificadas
 - Erbol. 26 February 2014. *TIPNIS: Sólo 23 de 64 comunidades fueron asistidas*. Retrieved from http://www.erbol.com.bo/noticia/indigenas/26022014/tipnis_solo_23_de_64_comunidades_fueron_asistidas
 - Folha de S. Paulo. 22 May 2013. *A Nova de Evo Morales*. Retrieved from <http://www1.folha.uol.com.br/fsp/opinia0/110104-a-nova-de-evo-morales.shtml>
 - Huañapaco, Felipe Coarite. 11 February 2014. *Bolivia es vulnerable a los efectos de fenómenos naturales adversos*. In El Diario. Retrieved from http://www.eldiario.net/noticias/2014/2014_02/nt140211/opinion.php?n=28&bolivia-es-vulnerable-a-los-efectos-de-fenomenos-naturales-adversos
 - Infobae. 25 February 2014. *Denuncia en Bolivia: hay entrega selectiva de ayuda por las lluvias*. Retrieved from <http://www.infobae.com/2014/02/25/1546189-denuncia-bolivia-hay-entrega-selectiva-ayuda-las-lluvias>
 - Los Tiempos Digital. 2 April 2014. *Gobierno destina \$us 476 millones para reconstrucción de zonas afectadas*. Retrieved from http://www.lostiempos.com/diario/actualidad/economia/20140402/gobierno-destina-us-476millones-para-reconstruccion-de-zonas_250142_546300.html
 - Sanchez, Mariana. 8 February 2014. *Deadly Floods Drown Swathes of Bolivian Land*. In Al Jazeera, retrieved from www.aljazeera.com/video/americas/2014/02/deadly-floods-drown-swathes-bolivian-land-201428264949462.html
 - Stephanes, Giovanni Vera. 2 March 2012. *La Niña provoca chuvas nas Amazônia boliviana*. In O Eco. Retrieved from <http://www.oeco.org.br/noticias/25768-la-nina-ameaca-amazonia-boliviana>
 - Peredo, Nelson. 7 March 2014. *Agua cubre el 70 % de San Joaquín y evacúan 70 familias en Cobija*. In Los Tiempos Digital. Retrieved from www.lostiempos.com/diario/actualidad/nacional/20140307/agua-cubre-el-70-de-san-joaquin-y-evacuan-70-familias-en-247179_539306.html
 - Pérez, Wilma. 2014. *El Defensor observa inequidad y duplicidad en la entrega de ayuda*. In La Razon, La Paz, 27 February. Retrieved from http://www.la-razon.com/sociedad/Defensor-observa-inequidad-duplicidad-entrega_o_2006199366.html
 - Usi, Eva. 8 January 2013. *TIPNIS: más que un conflicto por una carretera*. In Deutsche Welle. Retrieved from <http://www.dw.de/tipnis-m%C3%A1s-que-un-conflicto-por-una-carretera/a-16506622>

SITES

- Central Intelligence Agency. *The World Factbook, Bolivia*
- <https://www.cia.gov/library/publications/the-world-factbook/>

- geos/bl.html (consulted on 28 April 2014)
- Comisión Económica para América Latina y el Caribe. *Cepalstat, Bolivia* http://estadisticas.cepal.org/cepalstat/WEB_CEPALSTAT/perfilesNacionales.asp?idioma=e (consulted on 28 April 2014)

VISUALS

- Map - United Nations, retrieved from <http://www.un.org/Depts/Cartographic/map/profile/bolivia.pdf>
- Pictures - Augustin Zambrana Arze - Reproduction/Soy Beniano/Air Force/Government of Bolivia/ De Olho No Tempo Meteorologia, retrieved from <http://deolhonotempo.com.br/>

[site/por-questoes-politicas-midia-brasileira-ignora-tragedia-climatica-na-bolivia/](http://www.globo.com/brasil/politica/por-questoes-politicas-midia-brasileira-ignora-tragedia-climatica-na-bolivia/)

Europe

SOPHIE BROWN

The Impact of Displacement in the 2013/2014 Southern England Winter Floods

Resilient Communities or “Re-traumatisation by bureaucracy”?

The winter floods in the United Kingdom were some of the worst on record, with an estimated 7,800 homes flooded (UK Government, 2014). According to the Association of British Insurers, the winter floods will cost the United Kingdom insurance industry £1.1 billion (ABI, 2014). The South of England, experiencing record-breaking rainfall, was particularly severely hit, both inland, from surface run-off and river overflow, as well as in coastal regions from storm surges. Therefore, although flooding took place throughout the country, this case study will focus on displacement in Southern England, in the counties of Somerset and Cornwall in particular. The interplay of administrative bodies at different regional levels has been particularly important. Whilst flood response is organised at a regional-local (county) level, national political and local community forces have been highly influential in shaping both direct response as well as policy impacts.

Photo 1. Flooding on the Somerset Levels (taken by P.Hipwell, Feb 2014)



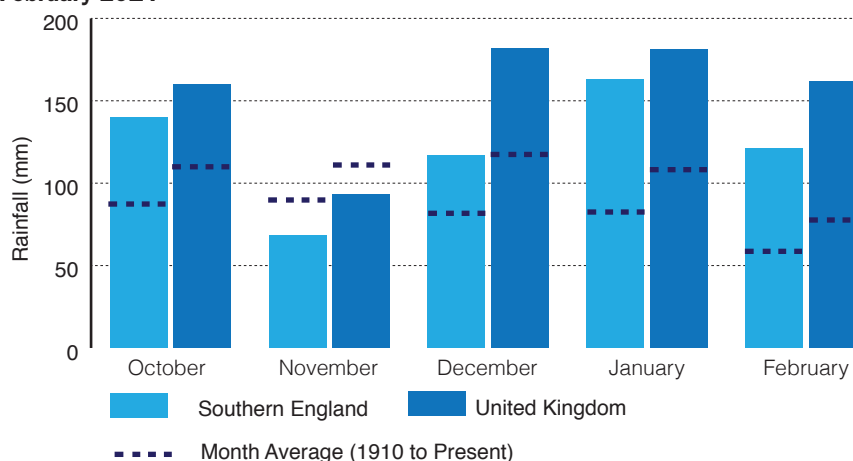
As a developed country, the United Kingdom is seen, almost automatically, to be high on resistance and low on vulnerability. The relationship between income and vulnerability is not linear, however, and “rich” people can be vulnerable too. The widespread winter flooding in the United Kingdom has seriously thrown into question the preconception that those in developed countries are able to cope. Within the United Kingdom there is a lack of understanding of the impact on individuals and communities of displacement on various timescales. There are little discussed but nonetheless important problems with insurance, and a strong reliance on social capital and communities when displacement occurs. Flood groups and community level action groups (such as FLAG, the Flooding on the Levels Action Group) are increasingly being formed.

This paper addresses flood-related displacement on three different timescales: the process of leaving and short-term displacement (via evacuation or rescue), moving out and implications for daily life (“mid-term” displacement), and the long-term impacts of displacement on both communities and individuals. Support mechanisms available for those displaced by flooding will be discussed, as well as planning policy and issues surrounding insurance, both of which will affect the longer-term trends of flood-related displacement. Six interviews were conducted for the study, a full list of which can be found in the bibliography. As nearly all interviewees noted the lack of research and dialogue on flood-related displacement in the United Kingdom, it is hoped that this paper can go some way towards addressing this research gap.

1. THE ENVIRONMENTAL CONTEXT

Figure 1 below shows rainfall values for Southern England from October 2013 to February 2014, the period of the winter flooding. As floods take time to recede, some areas were still underwater into March and early April 2014. Rainfall for October and December was above average, as shown, leading to saturated ground and, subsequently, groundwater flooding. Rainfall for January was the highest on record (since 1910) and in February rainfall almost reached the maximum value dating back to 1923. For the United Kingdom in general, Figure 2 shows the extent of the winter rainfall. In the Government’s words, “the winter of 2013 to 2014 was the wettest on record” (UK Government website, 2014).

Figure 1. Southern England and United Kingdom Rainfall Data for October 2013 to February 2014



(Data source: Met Office, 2014)

The United Kingdom's Centre for Ecology and Hydrology noted that all four types of flooding occurred: tidal, pluvial (flash), fluvial (from river overflow) and ground-water (runoff from saturated land) (Met Office & CEH report, 2014). This demonstrates the extent of the flooding in a wide variety of different geographical contexts and landscapes. While the type of flooding strongly influences the type and nature of displacement, for example pluvial flooding will often lead to sudden evacuations and rescue, it is rarely the determining factor.¹

1.1. Focus: Southern England

This paper focuses on Somerset and Cornwall, in the South-west of England. The local institutional specificities of these two counties affect how displacement caused by flooding is managed and approached.

Somerset Levels

The case of the Somerset Levels was highly mediatised, making it a major political issue at the national level in the context of spending cuts for flood defences and maintenance. Somerset has a relatively fragmented regional organisation, containing District and Borough Councils as well as an overarching County Council, which has received some criticism. In the United Kingdom, County Councils have overall responsibility for flood response (and to some extent risk) management.

Although most residents were aware of the flood risk days in advance, incomplete analysis of this risk and inappropriate responses led to many newsworthy and dramatic evacuations, including of livestock of the many farms. The rural and dispersed population means that information about displacement is generally poor and flood response has proven itself to be bottom-up driven.

Cornwall

300 properties were affected in Cornwall during the winter floods through tidal and surface water flooding in the context of severe storms.² There is no official data regarding the number of people displaced from these properties. Martyn Alvey, Community Flood Resilience Manager at Cornwall County Council, works hand in hand with the community-level "Cornwall Community Flood Forum" (CCFF) aiming to increase resilience of communities in Cornwall to flooding. Since the 2007 flooding, Cornwall has worked heavily on community resilience, and is participating in Defra's pathfinder scheme in order to further share best practices nationally.

The relative success story of Cornwall is due in part to its unitary authority, which avoids some of the challenges related to fragmented responsibilities experienced by other counties. Local scale characteristics are also very important in reducing the likelihood of large-scale displacement caused by flooding; in Cornwall the settlements are relatively dispersed and there is high availability of accommodation in winter months (due to the importance of summer tourism), these factors attenuate the challenges of flood-related displacement.

1.2. Displacement Data

There is almost no data on the numbers of people displaced by flooding in the United Kingdom, either through evacuations, rescue or longer-term displacement. Government Figures, aforementioned 7,800 homes flooded (UK Government, 2014), pertain to the homes themselves. The press and media frequently cite Figure

1. Discussed in more detail in Chapter 2.1 of this paper.

2. Martyn Alvey, Community Flood Resilience Manager, 08/04/14.

ures about evacuations,³ although it is unclear where these numbers come from. The most likely hypothesis is that they are estimations from on-the-ground sources or emergency services in the case of rescue. Government data seems to be very approximate. Displacement, therefore, whilst being the most extreme and long-term impact of flooding, is receiving little more than initial, spontaneous, “blue light” attention. There is almost no follow-up despite intense attention given to communities over short periods of time. The implications of such media attention for policy response seem to be significant and will be discussed further later in this paper.

As mentioned, County Councils collect data about the numbers of properties flooded, and in Cornwall regarding “near misses” (where the garden or garage has flooded), however no information is collected about the people who have left (or, indeed, remain) and their current location.⁴ Furthermore, the council is unaware of some properties that flooded. For the most part these are owners who have chosen to “go under the radar” for insurance purposes. Procedures seem to be different in Somerset, however. In an interview, Gill Slattery, Councillor for North Curry & Stoke St Gregory, indicated that they keep track of who is able to remain in their homes (or not), their current location, as well as if they have house insurance.⁵

Estimates for the number of properties without flood insurance are often “less than 20%”.⁶ According to government figures, available on their website, over 6,500 visits were made by insurers for over 7,800 properties flooded. These figures would therefore indicate that around 17% of the properties in the winter floods were not insured against flood risk. Information from insurance companies can, however, shed some light on flood displacement.

Nationally, it is estimated that temporary accommodation was arranged (by insurers) for 2,100 households (UK Government, 2014). The vast majority of those who are displaced, however, use their social networks to find alternative accommodation, staying with friends, relatives or neighbours (at least in the short term). Government figures, based on council tax payments, estimate that just over 1,000 households are still hoping to return to their homes. Statistics from floods in 2007, released as part of the Government’s “Pitt Review”, show that within three months 50% of households had returned and within 6 months 82% had gone back (Pitt Review, 2008). However, there are still people today who have been unable to return to their homes. A quick calculation based on the Government figures cited above suggests that the rate of return for the 2013 winter floods is higher than in 2007, indicating that, at the time of writing (April 2014), 87% of households had already returned⁷(UK Government website, 2014). It would however be expected that insurance companies already have this information for all properties whose insurance covers flood risk (i.e. around 83% of households).

2. EVACUATION & RESCUE

Evacuation (before the flood) and rescue (during the flood) are the most immediate, short-term forms of displacement caused by flooding, generally receiving the most attention, both on the part of authorities and the media. During the 2013 winter

3.. For example “Floods: Hundreds evacuated and thousands more at risk” (BBC News England, 2014).

4. Martyn Alvey, op cit

5. Gill Slattery, Councillor for North Curry & Stoke St Gregory, 11/04/14

6. Martyn Alvey, op cit

7. Government figures indicated that 1000 households of the 7800 flooded had not returned home, so 12.8% of the properties flooded. The rate of return can therefore be estimated at around 87.2%.

floods, there were many media reports about evacuations and rescue missions. On the Somerset Levels, for example, water levels rose so quickly around Moorland that a lack of access led emergency services to announce evacuation orders out of a helicopter⁸ (Western Daily Press, 2014). Other evacuations were likened to World War Two, with people coming in their nightclothes and a hotel being used as a “control centre” by police and emergency services (BBC News Devon, 2014). Thousands of homes were evacuated on the river Thames and 350 people were rescued (BBC England, 2014). The evacuations were portrayed as disorderly and panicked. In most cases, however, several days’ notice of the impending floods was given, but people were very reluctant to evacuate their homes.

Photo 2. Flooding on the Somerset Levels (Taken by P. Hipwell, Feb 2014)



2.1 How do people decide whether to evacuate?

There are many elements that make up the decision whether to stay or evacuate, depending largely on individual circumstances. When asked what drives the decision to stay or go, Heather Shepherd, from the National Flood Forum, came up with a number of factors. The emotional factor would appear to be the biggest reason why people delay evacuation from their homes once a flood has occurred. “People feel safer in their homes”, she notes, “home represents a sanctuary, a private space”⁹. Emotional attachment is an important dimension of evacuation, and undoubtedly affects the long-term implications of displacement related to flooding in the United Kingdom, to be discussed further in section 4.

Doubt about the security of an evacuated home is also an issue for homeowners. Despite the fact that crime is actually reduced during a flood, the notion that homes

8. The message said: “Flood danger imminent. Please evacuate to [North Petherton]”.

9. Heather Shepherd, Community and Recovery Support, National Flood Forum, 08/04/14.

become vulnerable to thieves when streets are empty plays an important role in the decision to stay or delay evacuation.¹⁰ This was reflected in the widespread dissatisfaction when the end to the roadblocks was announced in Somerset.¹¹ Roadblocks are often put in place during extensive flooding. In Somerset when the end of these was widely advertised, however, people were angry. As a large number of homes had been evacuated and were left unoccupied, it seemed like an advertisement for easy access to empty houses. This reflects the concern that homeowners have for the security of their houses when they are not there.

The important role of animals and pets was also mentioned.¹² In Somerset, some were forward thinking in evacuating their animals beforehand but for many this proved impossible. Moreover, as Somerset is a rural area, many people have large animals such as ponies, donkeys, or dogs. The role of animals is especially important for the elderly or vulnerable where a pet is particularly significant. For instance, a couple with mobility problems had 12 large dogs and were very reluctant to evacuate. As such, they were putting their animals'¹³ needs before their own; a decision that was also in part influenced by a poor understanding of the way authorities would handle the animals. Rather than informing themselves, they believed the fire brigade would deem the animals dangerous and euthanize them.

Indeed, thinking that the water "probably won't get any higher"¹⁴ is a key reason that people wait until the last minute and evacuation becomes rescue. "People went into paralysis, they weren't thinking rationally and practically, they were just telling themselves 'it is not happening'".¹⁵ In Somerset many people were not convinced of the severity of the flood and delayed leaving, despite warnings being given days in advance in some areas. One well-publicised case included lorries full of cows that had to be evacuated in very bad conditions, causing the lorries to fall off the road. Though the farmer had been made aware several days earlier of the need to evacuate, his refusal to do so caused an emergency evacuation. Homeowners are far more likely to leave where children are involved though.¹⁶ This is most likely due to the danger for children of being around contaminated water and other flood-related hazards, such as short-circuits.

The nature of the flood can also lead to different types of displacement, as previously mentioned. It is interesting to note, however, that only one of the interviewees referred to this directly.¹⁷ Other factors, such as anxiety, children, or an underestimation of the risk, were generally considered to be of greater importance when there is a decision to be made. A "wash through", for example, is a flood that enters a house for only a few hours. The occupants generally leave while it happens and return when the water recedes. In other types of floods, the water may seep slowly into houses, damaging floors, carpets and furniture. Dehumidifiers are required in these situations, but an individual's decision to leave, or not, will largely depend on individual circumstances, as discussed. Although there are negative health consequences of living in a damp space, moving upstairs is an option. Financial resources and insurance are likely to be significant in these situations. Deep-water floods, however, last several weeks causing long-term destruction. In addition, a lack of sanitation

10. Heather Shepherd, *op cit*.

11. Gill Slattery, *op cit*.

12. Heather Shepherd and Gill Slattery, *op cit*.

13. Gill Slattery, *op cit*.

14. Heather Shepherd, *op cit*.

15. Gill Slattery, *op cit*.

16. Heather Shepherd, *op cit*.

17. Gill Slattery, *op cit*.

resulting from deep-water floods makes houses impossible to stay in. As FLAG (Flooding on the Levels Action Group) representative Rebecca Horsington noted, the flooding in Somerset has been relatively prolonged, with floodwaters still receding at the time of the interview, in the beginning of April.

The flood itself can therefore be considered a necessary but not sufficient factor for evacuation: without a flood risk evacuation will not take place, however flooding itself is not sufficient to lead to evacuation. Factors affecting the decision to evacuate include emotional attachment to property and belongings, children, animals and pets, worries about crime and further damage, underestimation of the risk and thinking “it won’t get worse”, and the nature of the flood itself. Once the decision to leave is made, either through evacuation or rescue, the next consideration is where to go.

2.2 Where do people go?

Every County Council in the United Kingdom has an emergency plan and will set up emergency evacuation centres in the case of a flood. The centres are “some-where immediate to go to, which is warm, dry and where you can have a cup of tea”.¹⁸ However, some evacuation centres are used for all emergency situations rather than floods in particular, which means that they may become inaccessible or flood themselves. Churches consequently play a significant role as they are often built on higher land and therefore tend not to flood. “Churches together” is a group of volunteers that was particularly active during the winter floods. Westfield United Reform Church in Somerset, for example, turned the church into a rest centre for local people evacuated because of the flooding (Churches Together, 2014). These reception centres are an important part of the evacuation response, both officially, where people can get support, grants and advice, and as an unofficial first port of call.

Local authorities also have statutory housing responsibilities. In most cases, accommodation is paid for by insurers when a property is affected by a flood. Indeed one of the first things those displaced by flooding have to do is ring their insurance company, something that Whittle *et al.* (2010) note can itself become traumatic in a time of distress. This winter around 17% of properties were affected by a lack of flood insurance though, which means that accommodation costs for those displaced would not be covered. The majority of those uncovered stay with friends or relatives. County councils step in only for a very small percentage of cases, for example with vulnerable groups who have no alternative.¹⁹ The situation is exacerbated when whole communities are affected.

Neighbours and social capital within local communities are extremely important for initial evacuations and flood response, particularly where access routes are closed or alternative accommodation is unavailable. In Heather Shepherd’s own experience, she and her family were taken in by their neighbours (whose house was built on slightly higher land), as they were unable to get out of the village immediately. In Somerset, FLAG evacuates local farm animals and finds alternative lodging on a purely voluntary basis.²⁰

Whilst no data exists on the usage of emergency evacuation centres (except sporadically where residents are forced to stay overnight), it is hard to quantify their importance in situations of flood-related displacement. They appear to be a point of reference or a first port of call before finding friends and family to go to, and then

18. Martyn Avey, *op cit.*

19. Martyn Avey, *op cit.*

20. Rebecca Horsington, Flooding on the Levels Action Group (FLAG) Representative – Volunteer Press Officer and Member, 11/04/14.

potentially longer-term private accommodation paid for by insurers.

2.3 Do people know what to do?

Cornwall County Council found that 40% of people living in high-risk properties did not know who to contact in the event of a flood.²¹ Indeed, in many cases it is unclear which agency or individual is responsible for what. The Pitt Review clarified these responsibilities at a national and regional level, however they are still unclear at the household level. Councillor Slattery, however, when asked if residents were aware of the reception centres, felt that generally most were aware of them. For many people, help simply comes to them.

Taunton Deane Borough Council,²² in Somerset, called and visited every person identified by the police as being affected by the flood.²³ Each village has a flood sub-committee that identified the most vulnerable people in the community in order to help them with evacuation and flood response. At times, however, this led to “inexperienced people giving bad advice”.²⁴ Rather than evacuating everyone, those residents who expressed a desire to stay were helped to sandbag their properties even in inappropriate situations. In addition, Parish Councils are made up of residents and as such have variable skills. This could lead to some people being missed by Parish Council led initiatives.

Photo 3. Flooding in Henfield, West Sussex (Taken by J. Brown, Feb 2014)



21. Martyn Alvey, *op cit*.

22. Borough Council: an administrative unit of English local government, smaller than that of a County Council. Exact functions vary depending on the local context.

23. Gill Slattery, *op cit*.

24. Gill Slattery, *op cit*.

3. MOVING-OUT – MID-TERM DISPLACEMENT

3.1 Implications for individuals and daily life

The words used by the interviewees when asked to describe the impact of moving out included: “devastating”,²⁵ “confusing when you realise you can’t go back”,²⁶ “a huge disruption”,²⁷ and “it has big psychological impact”.²⁸ Displacement caused by flooding clearly has a profound impact on every aspect of people’s lives. Interviewees talk about “not knowing if you’re coming or going” and the sense of uncertainty about the future. The flooding in Somerset has been relatively prolonged, with water still receding or being pumped out of many places at the beginning of April 2014. Nearly everyone in the community is affected, although as Cllr Slattery noted, to different degrees. The impact of displacement depends to a great extent on individual circumstances and factors such as age. Some believe that although the elderly are more vulnerable physically, they are often better equipped to cope emotionally.²⁹

Indeed, the negative health effects are not only limited to the physical aspects of the flood itself. Although there are flood support workers in reception centres, many people find being displaced by flooding difficult to talk about. Many are reluctant to admit that they are stressed and seek out a counsellor. In her flood recovery work, Heather Shepherd, has met people who have suffered nervous breakdowns due to the stress and trauma of flood related displacement. These individuals may have felt they couldn’t tell anyone because they felt that “everyone else was dealing with it so well”.³⁰ Pride is also an important factor to take into account, particularly in relation to insurance. Many households may have insurance that does not cover floods, however this is often difficult to admit to.

Flood related displacement has a profound impact on the daily lives of displaced persons. Getting settled and back into a routine is a major hurdle that needs to be overcome. In Heather Shepherd’s experience of flood displacement, for example, she was unable to live at home for a year. It was winter at the time of the flood and, as all the family’s belonging had been packed away, when summer arrived they were left with no summer clothes. Living in temporary accommodation, such as a caravan, raises many practical issues with distressing implications. Although seemingly simple, for example having no kitchen utensils means repurchasing many items, and the cumulative effects can be significant (financial as well as practical). Even small journeys (such as taking the children to school), and washing clothes can become very complicated. Family pets, mentioned earlier, often require long-term kennels, for example. Although insurance companies usually pay these for, many pet owners naturally choose to opt out of this service.

As mentioned, contacting insurance companies is one of the first actions taken by displaced persons. Insurers will often pay for accommodation however they can require complicated paperwork and approvals, such as for the rent amount. It is often difficult to find accommodation near your residence as any available accommodation is taken quickly, and rent prices sharply increase as a result of the unexpected and abrupt demand. The situation is even more complicated for those who are not covered by flood insurance. Councils have to be careful about setting precedents for

25. Somerset Resident, 05/03/14.

26. Heather Shepherd, *op cit*.

27. Heather Shepherd, *op cit*.

28. Rebecca Horsington, *op cit*.

29. Heather Shepherd, *op cit*.

30. Heather Shepherd, *op cit*.

future flood responses.³¹ In light of this, those not covered by insurance tend to receive support from local charities. One uncertainty, which will be discussed further, is whether a resident will be able to afford flood insurance once a property is determined to be susceptible to flooding. The cost of the flood risk element of insurance can be very high; one family would have had to pay £2100 per year to have flood risk included in their house insurance as opposed to £700 without.³²

Photo 4. Flooding in Henfield, West Sussex (Taken by J. Brown, Feb 2014)



4. LONGER-TERM DISPLACEMENT

4.1 Impact on communities

Flooding and subsequent displacement can have mixed impacts on communities, leading to both positive and negative long-term consequences.

“Flooding is one of many scenarios that strengthens a sense of community lost over recent years”.³³ For Mr Alvey, the winter floods have put “wartime spirit back into the community”.³⁴ This comparison was mentioned numerous times in interviews and articles about the winter floods, referring to the period both during and after the floods as being “like the war years” (Western Daily Press, 2014; BBC, 2014). Perhaps this was due to the sense of community in the face of adversity, and of collective hardship, relating to the way communities pulled together during the world wars. Indeed, there is an increasing awareness that events such as flooding can lead to previously unseen unity within a community. Those who took people in during the flooding (for example neighbours or community groups) may have strengthened links within the community. For FLAG representative Rebecca Horsington, the efforts of volunteers also supported the community and have “given

31. Gill Slattery, *op cit* and Martyn Alvey, *op cit*.

32. Gill Slattery, *op cit*.

33. Martyn Alvey, *op cit*.

34. Martyn Alvey, *op cit*.

people a lift”.³⁵ Mr Alvey’s comment reflects the feeling of many: “the floods this winter have demonstrated the strength of community across the country”.³⁶ Indeed, diverse national and regional associations went to Somerset to assist the recovery effort, such as the Sikh community (represented by Khalsa Aid) and a Muslim youth group.³⁷

Whilst short-term displacement can have positive effects, displacement, particularly when it is longer-lasting, can also have negative effects on communities. Interviewees spoke of the distress of not knowing about the state of their neighbours and friends.³⁸ Ms Horsington described the community as being “scattered” and “fragmented” because of flood-induced displacement, although Ms Shepherd noted the advantage for families of children continuing to meet at school in order to exchange news. It would seem that displacement caused by flooding can strengthen community links whilst making the community more vulnerable as a whole.³⁹ In light of this, the impact of displacement is likely to vary depending on the proportion of the community actually displaced.

Livelihoods also need to be considered in the context of any analysis on flood displacement, and this has been an issue in Somerset for those left behind. Many pubs that remained open are now struggling to survive, both because of displaced local residents and the decrease in tourism to flooded areas. In addition, in many rural areas people are unable to get to work, as key roads have been flooded, leaving them isolated. More workers are then forced to use the same routes, making journeys longer and more difficult. Cllr Slattery gave the example of a journey that used to take 20 minutes and now takes 2 hours since the floods. This has a knock-on effect for jobs. One local company, Airtech, a relatively large employer in the area, has been paying its employees’ extra fuel costs to assist with their out-of-pocket expenses due to the floods.

4.2 Longer-term impacts on individuals

Many of the impacts on individuals discussed in the previous chapter can be long lasting or permanent. There are no concrete figures on the length of time that people are away from their homes. As noted in the introduction, data from the 2007 floods, included in the Pitt Review, reported that 50% of households had returned home within 3 months and 82% had returned within 6 months. However, both Dr Deeming and Ms Shepherd mentioned the example of the Hull, where after the flooding in 2007 and 2008, people have still not returned to their homes. Estimations vary as to the length of time people are away from home, in some cases displacement can last up to 2 years⁴⁰ but an average of between 6 to 18 months was suggested.⁴¹ Longer displacements may be due to poor workmanship in home repairs or the time taken to put in resilience measures against future flooding.

There are much better take-up rates for resilience measures by the chronically affected, where there has been a flood at least twice in the same place.⁴² However, insurance usually only covers “like for like”, replacing or repairing what has been

35. Rebecca Horsington, , *op cit.*

36. Martyn Alvey, *op cit.*

37. Gill Slattery, *op cit.*

38. Rebecca Horsington, , *op cit.*, and Heather Shepherd, *op cit.*

39. Heather Shepherd, *op cit.*

40. Dr Hugh Deeming, Senior Research Assistance (Community Resilience Expert), University of Northumbria, 04/03/14.

41. Heather Shepherd, *op cit.*

42. Dr Deeming, *op cit.*

damaged. Flood resilience measures, such as raising plugs, installing flood barriers, or substituting plaster to use a water-resistant version, often require a large amount of additional investment. Following the winter floods the government has made a £5000 grant available but resilience measures can cost as much as £30,000. Without these measures, and even sometimes with them, susceptible properties often re-flood the following year or a few years later. There can be damp patches, causing people to move out while options for drying can be tried. Landlords often prefer not to move tenants out because of the loss of income. Therefore these properties are inadequately dried out. Additionally, living in a damp property can have negative health implications, however the impacts of displacement are such that many choose to remain.

Two interviewees mentioned suicide as the most extreme impact of flood related displacement. Explaining this, Ms Shepherd said that where there are pre-existing issues it's hard to cope. Indeed, since the winter floods "half a dozen farmers are on suicide watch"⁴³ following the cumulative impacts of the 2012 summer floods in Somerset, followed by the 2013 winter floods. The psychological impact of flooding cannot be underestimated. Some families have lived in in their communities for generations and have profound links to the physical space, for example by having loved ones buried in a local graveyard. For them, leaving can be a highly traumatic. On the contrary, Heather Shepherd met someone in 2005 who was so devastated by the flooding that he moved to the Canary Islands simply to get away. Whatever the response, some people never get over the experience and every rain event can bring back the trauma of having their houses flooded and having to leave.⁴⁴

A comprehensive study by the University of Lancaster, in which Dr Deeming (now at Northumbria University) participated, included interviews with those displaced by flooding, as well as diaries and focus groups, to gauge the long-term impacts of the 2007/2008 Hull Flood event. This study, by Whittle *et al.* (2010), raised the profile of what the authors term 're-traumatisation by bureaucracy', demonstrating that, while the flood and subsequent displacement are often traumatic experiences, the bureaucracy surrounding the displacement can be too. This can vary from the administrative complexities of living in temporary accommodation to having to project manage home repairs. The study also highlights the 'recovery gap' that emerges: "where the legally-defined contingency arrangements provided to the community by its local authority diminish and where the less well-defined services provided by the private sector (e.g. insurance, builders etc.) start" (Whittle *et al.*, 2010). As Dr Deeming said, "the bureaucracy that people have to deal with is very traumatising".⁴⁵

4.3. Moving towards flood risk areas – planning policy, insurance and property values

In light of the widespread flooding of properties, there is a question of what the pattern of new settlements should look like in the United Kingdom. One such question is why properties are still being built on flood plains. In England, County Councils have to ask for Environment Agency approval for developments on flood plains. Since 1996 the Environment Agency have approved the building of "almost 200,000 new homes on flood plains" (Martin, 2014). Thirteen per cent of new developments are built on flood plains (Bawden & Clark, 2014) and demand for housing is continuing to increase. Furthermore, increasing numbers of homes are being built even when the Environment Agency opposed the development (Bawden & Clark, 2014).

43. Gill Slattery, *op cit.*

44. Heather Shepherd, *op cit.*

45. Dr Deeming, *op cit.*

Given the high population density in large parts of the United Kingdom, land for development is scarce. Another key issue in terms of long-term trends in the United Kingdom is legacy. People have been building properties on floodplains for centuries and this trend is unlikely to stop if left solely to economic forces.

There seems to be a mismatch between knowledge and action. Despite the increasing quantity of information published by the Environment Agency, such as detailed flood risk maps, investment is still going into flood prone areas. Local planning authorities have no incentive to discourage development in flood risk areas where this is a large proportion of the land available, not allowing building would affect their tax income.⁴⁶ In addition, developers building on floodplains are rarely affected by floods and never by the impacts of displacement so, for them, the economic incentive remains. Economic and social factors are therefore increasing the risk of flood related displacement. At the same time there is little knowledge about the long-term trends of migration related to flooding in the United Kingdom.

One of the key concerns of those displaced by flooding mentioned by the interviewees, was how to maintain the resell value of their properties. There are relatively high levels of home ownership in the United Kingdom. In 2007 the rate of home ownership reached 73.3% and is currently estimated at around 67% (Eurostat, 2014). There is some uncertainty around obligations to divulge flood related information concerning a property. In one case, previous owners were sued for not declaring to the new owner that the property had flooded in the past. In addition, those who have never experienced flooding are sometimes unaware of the huge impact that flood related displacement can have and may not take flood risk seriously.⁴⁷ Given the lack of statistical information on flood related displacement, it remains to be seen whether all those who were forced to leave their homes by flooding actually return. This is often a false choice, however. As the value of properties susceptible to flooding decreases, such homeowners are increasingly trapped in flood risk areas.⁴⁸

Photo 5. Pumping on the Somerset Levels (Taken by P. Hipwell, Feb 2014)



46. Dr Deeming, *op cit.*

47. Heather Shepherd, *op cit.*

48. Dr Deeming, *op cit.*

The paradox is that the Government is making it easier to get insurance to live in flood risk areas, further encouraging the trend of development in flood risk areas. In the past there was a gentleman's agreement that as long as the government put sufficient funds into flood defences with less than 1 in 75 year floods, insurance companies would cover homes vulnerable to flood risk.⁴⁹ This agreement has now expired and there is a new pooling system called FloodRe, projected to last 20-25 years, which sets the price for the flood risk element of home insurance. It is, however, unaffordable in some areas, and this strategy does not factor in increasing flood risks due to climate change. Flood insurance is an important way of decreasing vulnerability to flood risk, however increasing the availability of insurance is sending the wrong message to councils and property developers.

For Dr Deeming there will inevitably be some residents who will have to leave their properties in the long term, particularly in times of austerity when less public money is available for flood defences, but this is a highly controversial subject. He cited the example on the East Coast of England where some houses, which were part of the Defra's Pathfinder project, were washed into the sea. Years of erosion took place almost overnight. In one situation of 'managed retreat'⁵⁰ in Wales, Heather Shepherd described the decision regarding the future of the area as being made without the community. As she pointed out: "when you allow water to encroach on homes, they become worthless".⁵¹ Government compensation seems to be a major taboo. As people have been building on flood plains since the industrial revolution, there is currently no resettlement policy on the table given the major issue of legacy in the United Kingdom.⁵²

5. FLOOD POLICY IN THE UNITED KINGDOM – LESSONS LEARNED

5.1. Are the current support mechanisms adequate?

Those interviewed for this case study had widely differing views regarding the adequacy of support mechanisms available for those displaced by flooding. This is not surprising, given the different institutions they are representing, yet there is a growing consensus for the future development of support systems.

"The post-flood recovery process is adequate for Cornwall".⁵³ For Mr Alvey, Cornwall's Community Flood Resilience Manager, available funds should be directed towards pre-emptive action and work on community resilience prior to a flood, rather than towards post-flood recovery. One key aspect of such resilience work is the formation of flood groups at community level. Cornwall has been a pioneer in developing these groups, such as the Cornwall Community Flood Forum, which brings together different actors to create a platform for supporting those at risk from flooding. During the winter floods, such community groups and associations have proven to be an important part of the support provided for short-term flood displacement. Though their current role in providing support for long to mid-term displacement is limited, it has great potential.

Support mechanisms are adequate in Somerset, according to Cllr Slattery, although she noted that there is an inappropriate understanding as to how quickly authorities and groups can be expected to respond: everywhere in Somerset needed

49. Dr Deeming, *op cit*.

50. The policy of not, or no longer, employing hard flood defences to protect an area.

51. Heather Shepherd, *op cit*.

52. Dr Deeming, *op cit*.

53. Martyn Alvey, *op cit*.

sandbags the same day, for example. Volunteers were the main helpers, trying to support many of those affected, but were limited in their practical capabilities. “There are things they [volunteers] can do that the authorities can’t and there are things that authorities can do that they [volunteers] can’t do as well”.⁵⁴ Both the limits and potential of volunteers and community groups therefore need to be recognised in any proposed policy measures.

The capacity of local councils is also highly variable. In her role with the National Flood Forum, Heather Shepherd works with many different local councils, some of which she recognized as being very good. She gave the example of Surrey County Council whose approach she summarised as being “hands up we don’t understand this but we want to help”.⁵⁵ Somerset Council, on the other hand, has proven to be a little harder to encourage: “we cannot get it to be active”.⁵⁶ Between councils there is a disparity in the way responsibilities are allocated between councils (public) and insurance (private). One council, for example, provided skips in order to quickly clear houses of debris and damaged items, something that insurers would normally provide. Another good example of unknown responsibility is the closure of roads. It is unclear who is responsible and who can give the final word to close a road in when the situation is ambiguous. In some situations communities do it themselves to avoid bow waves from cars driving on flooded roads, which can often cause flooding of houses next to roads. As one newspaper interviewee in Somerset noted, “Our neighbours have been wonderful but we just have not seen the Environment Agency” (Rowe, 2014). This organisational ambiguity exists in all aspects of flood response, including displacement.

Overall, interviewee Heather Shepherd feels that the current support mechanisms for flood related displacements are inadequate. There is clearly a need to share experiences between councils (something that the Defra pathfinder project is attempting to do). In addition, councils seem to be generally better at emergency plans than mid to long-term displacement support. Innovative methods, such as meeting in flooded people’s houses have been used to try to bring authorities and communities together in a non-contentious way. The community sets the agenda and venue, with the focus firmly on finding sustainable solutions for the future.⁵⁷ People displaced by flooding are often fearful of recurring floods, however at the same time, do not like plans for future pre-emptive action to be made top-down with no consultation. There is therefore a need for people to make a vision for their own community (such as the creation of a community flood group or a neighbourhood action plan), which could also act to mitigate future assignment of blame, an issue mentioned by several of the interviewees. For Ms Shepherd, the solution is to set up a core local group that would communicate with the wider community to identify the key issues at stake when a flood occurs. Furthermore, one of the strategic outcomes of the Pitt Review highlighted the need for collaboration of flood risk management communities, authorities, as well as different government departments. There is clearly room for improvement regarding the support mechanisms for those displaced by flooding, most notably for mid to long-term displacement.

5.2. Defra pathfinder

In his role as Community Flood Resilience Manager, Mr Alvey is employed by Cornwall County Council as part of a flood resilience pathfinder initiated by Defra

54. Gill Slattery, *op cit*.

55. Heather Shepherd, *op cit*.

56. Gill Slattery, *op cit*.

57. Heather Shepherd, *op cit*.

(Department of Environment, Food and Rural Affairs). This is a sharing process in which 13 case studies (or ‘pathfinders’) will be brought together by Collingwood Environmental Planning to share best practices, and ultimately give training to community flood wardens.⁵⁸ Policy therefore seems to concentrate on improving resilience to flooding rather than recovery, although work is being done to encourage active community engagement, which will undoubtedly help the post-flood recovery process indirectly. Mr Alvey talked about “helping people to help themselves” and “making themselves more resilient”. This reflects the views of other experts interviewed that future policy cannot be purely top-down in nature. It is only through a truly interactive process with local communities that real progress can be made. Part of the pathfinder will involve piloting ‘Household Action Plans’ for example, bringing resilience action right down to the household level. These may be a way to address the fact that 40% of the most at risk households didn’t know what to do or who to contact in the case of a flood.⁵⁹ Dr Deeming mentioned local resilience forums where the Environment Agency is directly engaging with communities. This is a long-term process that, as he put it, can be “quite bloody at the start”.

It is hoped that Defra’s pathfinder project can go some way towards addressing the concern of community engagement, while also possibly overcoming what Dr Deeming calls a glass floor and a glass ceiling. For him the barrier works both ways; both communities and authorities can see what the other is doing but neither can influence the other. It is essential to break down these existing barriers and promote cooperation between communities and authorities.

5.3. Looking forward

The Southern England winter floods are said to be the worst floods in the United Kingdom since 1947 (The Economist, 2014) but, as the interview with Dr Deeming revealed, there weren’t many floods in between then and 1998. Professor Stuart Lane has documented this pattern in his theory of flood-rich and flood-poor periods (Durham University, 2008). One consequence of such a ‘flood-poor’ period is that people simply forgot about flooding as an issue, reducing community resilience to flooding in the United Kingdom. In light of this, one positive result of the flooding over recent years is that this trend is being reversed and communities’ awareness of flood hazard is increasing. Indeed other interviewees mentioned the value of the widespread media coverage of the winter flooding in this respect.

Unfortunately, being displaced over the mid to long-term is often not a “sensational and dramatic story” for those who are not living it⁶⁰ and flood related displacement rarely receives media attention after evacuation or rescue. As Dr Deeming put it, the “media don’t *do* recovery”, recovery is not “blue lights and waders”.⁶¹ The media does have an important role to play in raising flood awareness more generally however. For Cornwall the dramatic Boscastle flash flood in 2004 was a turning point. Although this was a unique event, it was the worst flood in many had ever seen and was later confirmed to be one of the most extreme floods ever experienced in the United Kingdom. It served as a timely reminder of flood risk in Cornwall, and the United Kingdom more widely. This supports Dr Deeming’s theory about the loss of community resilience over the period of relatively fewer floods.

58. Community Flood Wardens are volunteers in the local community who help to prepare their community for flooding and are nominated to receive flood risk information and warnings from the Environment Agency. .

59. The message said: “Flood danger imminent. Please evacuate to [North Petherton]”.

60. Heather Shepherd, *op cit*.

61. Dr Deeming, *op cit*.

Photo 6. Flooding on the Somerset Levels (Taken by P. Hipwell, Feb 2014)



“Strong concentrated media attention means that the government starts throwing money at the area, which means that others tend to lose out and don’t get the help and support they need”.⁶² For the 2013/2014 winter floods the response was strongly focused on hard engineering solutions and pumping on the Somerset Levels. Indeed, of the £10 million pledged for Somerset, half has already been spent on pumping in the biggest-ever mobile pumping project in Europe.⁶³ The media holds politicians to account in the first instance, however Mr Alvey highlighted the challenge of announcements made by high-level (national) politicians keen to take the opportunity to enhance their political capital. The announcements made by Prime Minister David Cameron are an excellent example: “nothing is more important than dealing with these floods” and “in recovering from these floods money is no object” (Dunt, 2014a). However, “the devil is in the detail”⁶⁴ and County Councils rarely see the money promised in these instances.

Almost all interviewees mentioned the extent of the attention; however any attention can have mixed consequences. For FLAG the attention has been “on the whole pretty positive”, with the flooding exposing the budget cuts which had led to the lack of maintenance of flood defences. In Cornwall the 2014 Valentine’s Day flood in Porthleven raised yet another challenge. Having seen dramatic scenes on the news, sightseers flocked to the affected places, blocking roads for essential services as well as putting themselves in danger. For Somerset, the message went out that the area needed money to recover, particularly for dredging and flood defence reconstruction, but the negative media attention led people to believe that businesses were closed, impacting pubs and tourism related industries.

Finally, equity issues also need to be considered when looking at the impact of displacement, given the contention that, in the United Kingdom, “poor communities

62. Heather Shepherd, *op cit.*

63. Gill Slattery, *op cit.*

64. Martyn Alvey, *op cit.*

are 3.5 times more likely to be flooded than richer ones” (Dunt, 2014b). More research is needed as to whether such communities suffer from a greater than average lack of flood insurance. These issues of equity also extend to reporting and the winter floods would suggest a reporting difference between the North and South of England. At the beginning of December 400 properties were flooded in a deprived area (Boston in Lincolnshire) with 200 residents in temporary accommodation, according to a BBC news article (BBC England, 2014). There was very little media coverage; perhaps partly due to the death of Nelson Mandela which dominated the headlines, yet far fewer properties being flooded on the Somerset Levels received disproportionate media coverage. At the end of April 2014, only a few months later, the media has almost entirely stopped coverage of the floods, even though water is only now receding in many places. As Dr Deeming noted, although the floods in Hull (Northern England) affected 8,000 people, it has now been dubbed the “forgotten city”. It will be interesting to observe if the same occurs for Southern England, a relatively wealthy region compared to the rest of the country.

“Given the overall volume of run-off, the amount of property flooding at the national scale was relatively modest; a tribute to the general effectiveness of flood defences” (Met Office & CEH, 2014). This analysis would indicate that although flooding may increase in the future, the relationship between increased flooding and increased displacement is not necessarily linear. This finding is comforting given the conclusion, within the same report, that the floods were linked to climate change, and that flooding will likely increase in the United Kingdom in the context of climate change. This is important for considerations of displacement impacts, given that the cost of flood insurance will likely increase, even if the government continues to ensure its availability. Interestingly, however, the majority of the interviewees did not see climate change as an issue for future flooding; rather, they saw it as an opportunity for national politicians to shift blame away from themselves. This mind-set, which seems generally pervasive, will undoubtedly influence property investment decisions in the future.

6. CONCLUSION

Overall, policy has moved from reactionary to attempts to improve community resilience and limit future displacement by flooding through the reduction of both risk and vulnerability. A stalemate has been reached, however, with regards to longer-term solutions. The relatively high population density in the United Kingdom and continuing demand for housing, in a country with high rates of home ownership, means that the economic forces will continue to lead to construction on flood plains. Displacement as a result of floods will therefore continue to be an issue.

Whilst the focus on community resilience to floods will help reduce impacts overall, it is important that response mechanisms also be put in place to help people affected by the mid to long-term impacts of displacement. The greatest impact on displaced people is psychological given the huge implications for everyday life and the fast-paced busy style of modern living in the United Kingdom. Councils have shown themselves to be generally well prepared for emergency situations, but less so for the impacts of displacement beyond evacuation and rescue. Councils should actively maintain contact with those displaced by flooding up to a year following their reinstatement to ensure people are able to cope. The first step in this process would be to make sure that data is collected routinely by all councils as to the households who have been displaced and where they are. The lack of accurate data relating to flood displacement is somewhat surprising given that this is the biggest natural hazard the United Kingdom faces and the fact that the structures and institutions already exist to collect this data.

When framing this case study the question: “resilient communities or ‘re-traumatisation by bureaucracy’” was asked. In fact, this study has perhaps shown that one doesn’t exclude the other. Community resilience is increasing as United Kingdom flood policy seeks to implement resilience measures to enable better preparation prior to flood events and hence reduce the impact of displacement by flooding when it happens. Yet the longer-term challenges linked to flood-related displacement, symbolised by the concept of “re-traumatisation by bureaucracy”, are on-going and will not disappear without a concerted effort on the side of authorities to ensure that mechanisms are in place to ensure long-term support of those displaced. ♦

BIBLIOGRAPHY

ARTICLES AND REPORTS

- (The) Met Office and Centre for Ecology and Hydrology (CEH). 2014. *The Recent Storms and Floods in the UK*. Met Office and Centre for Ecology and Hydrology Report. London, United Kingdom.
- Pitt, M. 2008 *Learning the lessons from the 2007 floods. The Pitt Review*. United Kingdom Government Cabinet Office. London, United Kingdom.
- Whittle, R., Medd, W., Deeming, H., Kashefi, E., Mort, M., Twigger Ross, C., Walker, G., Watson, N. 2010. *After the Rain – learning the lessons from flood recovery in Hull*. Final project report for “Flood, Vulnerability and Urban Resilience: a real-time study of local recovery following the floods of June 2007 in Hull”, Lancaster University, Lancaster, United Kingdom.

CITIZENS' ADVICE

- Aviva (Accessed: 08/04/14) “After the flood. What you can do to protect your home in the future”
- <http://www.floodresilienthome.com/after-the-flood.html>
- Citizens Advice Bureau (Accessed: 27/02/14) “Help if you’ve been affected by flooding” http://www.adviceguide.org.uk/england/news/whats_new_dec13_help_if_you_ve_been_affected_by_flooding.htm
- Environment Agency (Accessed: 27/02/14) “What to do in a flood” <http://www.environment-agency.gov.uk/homeandleisure/floods/114720.aspx>
- Local Resilience Forum (Accessed: 27/02/14) http://localresilienceforum.org.uk/help_your_community/before_an_emergency/community_warden

INTERVIEWS

- Interview with Martyn Alvey, Community Flood Resilience Manager, Cornwall County Council, conducted by telephone on 8 April 2014.
- Interview with Dr Hugh Deeming, Community Resilience Expert, University of Northumbria, conducted by telephone on 4 March 2014.
- Interview with Rebecca Horsington, FLAG (Flooding on the Levels Action

Group) representative, conducted by telephone on 11 April 2014.

- Interview with Heather Shepherd, Community and Recovery Support, National Flood Forum, conducted by telephone on 8 April 2014.
- Interview with Gill Slattery, Councillor for North Curry & Stoke St Gregory, Taunton Dean Borough Council, conducted by telephone on 11 April 2014.
- Interview with Somerset Resident, conducted by telephone on 5 March 2014.

PRESS ARTICLES

- Bawden, T., and Clark, N. 2014. “Why do we insist on building on flood plains?” *The Independent*. London, United Kingdom
- BBC News Devon. 2014. “Storm-hit Dawlish evacuation likened to World War Two.” *British Broadcasting Corporation (BBC)*. London, United Kingdom.
- BBC News England. 2014. “Floods: Hundreds evacuated and thousands more at risk.” *British Broadcasting Corporation (BBC)*. London, United Kingdom.
- BBC News England. 2013 “Boston Flooding: Two hundred residents in temporary accommodation” *British Broadcasting Corporation (BBC)*. London, United Kingdom.
- BBC News UK. 2014. “Homes evacuated as swollen Thames keeps rising.” *British Broadcasting Corporation (BBC)*. London, United Kingdom.
- BBC News UK. 2014. “UK storms: Surrey flood recovery centres set up.” *British Broadcasting Corporation (BBC)*. London, United Kingdom.
- BBC News UK. 2014. “Police helicopter warns residents to evacuate.” *British Broadcasting Corporation (BBC)*. London, United Kingdom.
- BBC News UK Politics. 2014. “UK flooding: Environment Agency to cut hundreds of jobs.” *British Broadcasting Corporation (BBC)*. London, United Kingdom.
- Dunt, I. 2014 (a). “Cameron: Money is no object for flood relief”. *Politics.co.uk*. London, United Kingdom

- Dunt, I. 2014 (b). “The truth about flooding: Poor areas three times more likely to be hit than richer ones.” *Politics.co.uk*. London, United Kingdom
- (The) Economist. 2014. “High Water Everywhere.” *The Economist*. Shepperton, United Kingdom.
- Harrabin, R. 2014. “Have we learned our lessons on flooding?” *British Broadcasting Corporation (BBC)*. London, United Kingdom.
- Martin, D. 2014. “River quango has allowed 190,000 new homes on flood plains since 1996 despite concerns they could be uninsurable.” *The Daily Mail*. London, United Kingdom
- Mat, I. 2014. “Somerset Levels Flood Crisis: Moorland evacuated after water rises a metre overnight.” *Shepton Mallet Journal*. Shepton Mallet, Somerset, United Kingdom.
- Number Direct. 2014. “Thorpe Park provides Refuge for Flood Victims.” *Number Direct*. United Kingdom.
- Rowe, T. 2014. “Rising waters force villagers to move out.” *Western Daily Press*. Somerset, United Kingdom.
- The Telegraph. 2014. “Somerset Levels flooding crisis: scores evacuated as heavy rains overwhelms flood defences in village of Moorland.” *The Telegraph*. London, United Kingdom.
- Weaver, M. and Siddique, H. 2014. “More UK storms prompt new flooding fears.” *The Guardian*. London, United Kingdom.

PRESS RELEASES

- Durham University (07/05/08) “Professor Stuart Lane predicts that the UK is entering a ‘flood-rich’ period”
- Churches Together in England (27/02/14) “Churches aid flood victims”
- Government Press Release (11/04/14) “Council Tax bills waived until flood victims return home”
- Local Government Association (25/02/14) “Councils working tirelessly to protect communities from severe weather”
- Association of British Insurers (20/03/14) “£6.7 million a day in insurance claims from customers hit by the recent flooding”

WEBSITES

- Cornwall Community Flood Forum. <http://www.cornwallcommunityfloodforum.org.uk> (Accessed: 8 April 2014)
- (The) Environment Agency, (Accessed: 27 February 2014) <http://www.environment-agency.gov.uk>; Flood Risk Maps, <http://maps.environment-agency.gov.uk>
- Eurostat Website <http://appsso.eurostat.ec.europa.eu> (Accessed: 15 March 2014)
- (The) Met Office, <http://www.metoffice.gov.uk/climate/uk/summaries/datasets> (Accessed: 12 April 2014)
- National Flood Forum, <http://nationalfloodforum.org.uk> (Accessed: 27 February 2014)
- Somerset Drainage Board Consortium, <http://www.somersetdrainageboards.gov.uk> (Accessed: 27 February 2014)
- United Kingdom Government Website <https://www.gov.uk/government/news/uk-floods-2014-government-response#flood-insurance> (Accessed: 20 March 2014)

Special section

**Displacement
induced
by development
projects**

JONNY BEIRNE

Gilgel Gibe III: Dam-Induced Displacement in Ethiopia and Kenya

H ydropower developments have come to assume an important role within the Ethiopian government's overall development strategy for the country during the last ten years. The Gilgel Gibe III on the Omo river, due to become operational in September 2014, represents the most ambitious, and controversial, of these projects to date. Further aspects of the government's national development strategy include leasing vast areas of designated 'unused' land for large-scale commercial agricultural projects and 'voluntarily' villagizing¹ scattered, semi-nomadic agro-pastoralist groups to centralized settlements so as to use land and water more efficiently and to better provide essential social services such as education and healthcare. The Lower Omo valley, along the Omo River, is one of the sites of this villagization programme as well as of these large-scale commercial agricultural projects which are made possible owing to the regulation of the river's flow by Gibe III. Though the Ethiopian government cite many positive aspects of these agricultural and hydropower developments there are still expected to be serious regional and transnational effects, including on migration flows, in an area already characterized by increasing climatic vulnerability with attendant population movements and conflicts over scarce resources.

The following paper is an attempt to track actual and anticipated migration flows resulting from the construction of Gibe III in the immediate vicinity of the dam, downstream in the Lower Omo Valley and across the border in Kenya around Lake Turkana. In the case of those displaced in the Lower Omo Valley, this will be considered in view of the distinction between voluntary villagization and forced resettlement. The research presented is not primary-source material. Instead, it is drawn from the reports and assessments of the Ethiopian government, rights-based groups, and academic researchers as well as media articles. It is hoped that this will serve to draw greater attention to the issue and encourage further methodological research on the dynamics of dam constructions (and associated large-scale irrigation schemes) on migration flows and on the ultimate experience of displacement and resettlement for environmental migrants in the region.

¹ This is known as the Promoting Basic Services (PBS) scheme (previously called the Pastoralist Community Development Project) which is in its third five-year phase having been launched in 2001. The main donors for the program are the World Bank, the United Kingdom, the European Union, the Netherlands and Germany.

2. THE ENVIRONMENTAL THREAT: LARGE-SCALE DEVELOPMENTS ON THE OMO RIVER BASIN

2.1. The Omo River Basin and Lake Turkana

The Lower Omo valley is a semi-arid region of the South Omo Zone with extraordinary biodiversity and a large number of distinct, indigenous agro-pastoral and fishing communities living within it (Avery, 2013). Running through the woredas² of the Lower Omo valley is the Omo River which originates in the Shewan highlands of Ethiopia at an elevation of around 2400 metres.

Figure 1. Map of the Lower Omo valley, Ethiopia



Source: Antiquity Journal (2010)

The key hydrological feature of the Omo River to note is its annual flood cycle, which occurs during the wet season between May and September. As stated in the Environmental and Social Impact Assessment Summary commissioned by the Ethiopian Electrical Power Corporation (EEPCO), the government entity charged with the overall management of the project³, this process submerges the banks along the Omo river. This enables recessional cultivation and livestock grazing during the dry season, as well as replenishing lakes and swamps on the floodplain and allowing fish to breed (EEPCO, 2009a).

Not only does this process naturally irrigate the banks of the Omo in the semi-arid climate of the Lower Omo valley but it also replenishes the water and nutrient levels of Lake Turkana, a closed basin prone to accumulating minerals which makes its waters semi-saline (Avery, 2013). This process occurs when flood waters retreat from

² Administrative sub-divisions within zones. Zones themselves are sub-divisions of regions.

³ In January 2014, EEPCO was renamed and split into two separate entities; Ethiopian Electric Power Office (EEPO) and Ethiopian Electric Services Office (EESO). EEPO are charged with overseeing the country's power projects including hydroelectric dams and transmission lines whilst EESO is responsible for the operations, distribution and sale of electrical power. For the purposes of this paper, I will continue to refer to the entity in charge of Gibe III as EEPCO.

the river banks, taking organic materials that ultimately end up in Lake Turkana. This nutrient inflow allows the growth of plankton, thought to be vital to regulating the salinity concentration of the lake. The soil fertility and biodiversity, therefore, that is found along the banks of the Omo and within Lake Turkana is a direct result of this cycle. Owing to this flood-cycle and the vast flows of water and nutrients the river provides to Lake Turkana, the Omo has become an indispensable natural resource for, at a conservative estimate, 170,000 agro-pastoralists and fishermen in the Lower Omo and Turkana basins who have adapted their livelihood practices according to this cycle and the river's unregulated flow (Avery, 2012). However, the total population expected to be indirectly affected by any changes is much larger with several estimates in the literature putting the figure at 500,000 (International Rivers, 2011; Johnson, 2010; Turton, 2010).

2.2. Ethiopia's Hydropower Boom

Though Ethiopia has seen tremendous GDP growth over approximately the last ten years (Smith 2013) and encouraging signs of poverty reduction across the same period (UNDP, 2013), the country still faces huge challenges with regards to improving the standard of living for the majority of its population, particularly in the southern regions.⁴ As part of a response to these twin demands of sustaining impressive economic growth and reducing the high levels of poverty, the government has sought to harness Ethiopia's topography through a series of hydropower developments aimed at meeting national demands but also with a substantial excess that can be exported to neighbouring countries. As stated by Miheret Debebe, the Energy Advisor to Prime Minister Desalegn, Ethiopia's ambition is to be the "renewable energy hub of the region" (Manson, 2014). Hydropower projects now occupy an important role within the 2011-2015 Growth and Transformation Plan (GTP, 2010) whose objective, broadly speaking, is to bring about social and economic changes that will put Ethiopia on its way to becoming a middle-income country by 2025. As part of the GTP, the Ministry of Energy and Water is charged with the responsibility of increasing Ethiopia's hydropower output from 2,000 MW to 10,000 MW by the end of 2015.

The Gilgel Gibe III dam situated along the middle basin of the Omo river in the South Omo zone of the Southern Nations and Nationalities People's Region (SNNPR) is the third in a planned series of five hydropower projects along the river. So far, two of these hydropower projects, Gibe I, a 40m high dam, and Gibe II, a hydropower station further downstream, have been completed. Of the two fully completed projects along the Omo river, Gibe I and its resulting 63 km² reservoir required by far the greatest number to be displaced with around 2,000 households, or 10,000 people, ultimately resettled (CEE Bankwatch, 2008). Resettlement took place between 1999 and 2001 with Africa Region Findings, reporting on behalf of the World Bank, declaring in its assessment that good practice had been followed by EEPSCO who themselves stated that the resettlement guidelines and policies would act as a model for future resettlement programs (Africa Region Findings, 1999). However, in its 2005 resettlement evaluation report, the World Bank noted that since resettlement the average crop yield of the resettled communities had declined by 54% and livestock numbers by 72% when compared to pre-resettlement levels and that health centres, schools and water pumps were in poor condition. At least eight families had reportedly abandoned the resettlement site after appealing to local authorities over the problems they were facing and receiving no effective response. Nonetheless, the

⁴ As a tentative indication of this, Ethiopia's 2013 Human Development Index value of 0.396 places it at 173 out of 187 countries, below the average for sub-Saharan Africa countries.

Resettlement Action Plan (RAP) was considered 'complete' by the World Bank (CEE Bankwatch, 2008).

The Gibe III represents a much larger undertaking for the Ethiopian government. At a cost of \$1.7 billion, it was Ethiopia's most expensive infrastructure development until plans were made for the Grand Renaissance Dam along the Blue Nile River in the north. It is also Africa's tallest dam at 243 m and it will create a reservoir with a surface area of 211 km² and a storage capacity of 11,750 million m³ over a projected period of 3 years once it began filling from April 2014 (Fong, 2014). The dam is expected to have an installed capacity of 1870 MW with an annual energy production of 6,500 GWh.⁵ It will thus, according to an EEPCO brief, increase the installed capacity of the country by 243% and annual energy production by 57% from 2008/2009 levels (EEPCO, 2010b). Given these power-generating capacities, much of the GTP's success, therefore, rest on the implementation of Gibe III.

2.3. Large-Scale Agriculture and Irrigation Developments

However, it is not just energy concerns that are driving hydropower developments such as Gibe III. As part of a national strategy to develop what is categorised by the government as 'under-utilised land', at least 1,000,000 hectares (ha), mainly in the developing lowland regions, have been leased to both private and state-owned commercial agricultural interests since January 2005. Other estimates which include land deals below 1000 ha put this figure at closer to 3,000,000 ha (Keeley et al. 2014). Much of this land has been developed through irrigation schemes. The GTP states that only 853,000 ha of land were irrigated by modern methods as of 2009 and it aims to increase this by 1,000,000 ha by the end of 2015 (GTP, 2010). The government's stated aim of these land deals and irrigation schemes is to promote food security, create jobs and transfer technology to under-developed regions (IRIN, 2011).

In the South Omo Zone, at least 305,511 ha of land have been identified for different investment activities according to a government report outlining the opportunities available to investors (Federal Ministry of Agriculture and Rural Development, 2011). However, according to an Oakland Institute report (2011) the actual total may be as much as 445,501 ha. What is certain is that more than 175,000 ha have been leased to the Ethiopian Sugar Corporation, a state-owned enterprise, for the Omo-Kuraz Sugar Project along the Omo River, which has been in development since May 2011 (Oakland Institute, 2011). Additionally, 70,000 ha have been set aside for future expansion and there are indications of 15 further land concessions totaling 111,000 ha to the private sector, mainly for cotton production. The Omo-Kuraz Sugar Project comprises of six sugar processing factories, the sugar plantations, housing units, 750 km of internal roads and a bridge as well as more than 200 km of irrigation canals. This ambitious project plays a major part in a further aim of the GTP; to increase annual sugar production from 314,000 tonnes to 2.25 million tonnes by the end of 2015 (GTP, 2010). The project has been made possible due to the regulation of the flow of the Omo river provided by the Gibe III dam.

2.4. The Environmental Threat

It is widely acknowledged that major dam constructions have both upstream and downstream effects on a river's flow and thus on agricultural, pastoral and fishing practices which are reliant on these flows (Mann and Plummer, 2000; McCully, 1996; Petts, 1980; McCartney et al, 2000). Upstream impacts result from the

⁵ GWh stands for gigawatt hours understood as a unit of energy equivalent to one gigawatt (1 GW) of power expended over one hour of time. This is commonly used to express the energy outputs of large power plants over long periods of time.

flooding of the river basin by the reservoir whilst downstream there are changes to the hydro-morphological regime of the river, namely the transport of nutrients and sediments as well as the overall flow of water. Upstream impacts have direct consequences on migration patterns in the region owing to the creation of the reservoir as this entails the displacement of the surrounding population as well as the in-migration of workers required to work on the dam. The construction of Gibe III has also, however, had direct downstream consequences for migration patterns insofar as it has enabled the development of the Omo-Kuraz Sugar Project whose construction has been subject to credible reports of widespread displacement (Human Rights Watch, 2012; Oakland Institute, 2013).

More typical downstream impacts, meanwhile, can be thought of as having indirect consequences for migration patterns as the hydrological effects that impact river-based livelihood practices occur cumulatively over a longer period of time. As such, it is difficult to predict precisely what will happen when and the possible impacts that this will have on migration patterns for the affected population. In the case of Gibe III, however, these indirect impacts are thought to be exacerbated by the sheer scale of the Gibe III project and also by the diversion of vast amounts of water to the sugar plantations of Omo-Kuraz (Avery, 2012). An estimated 60-70% of the Omo River's inflow will be captured by Gibe III in its first year of operation through the filling of the reservoir whilst the general regulation of water flow will end the river's annual flood cycle in the Lower Omo valley (Avery, 2013). Additionally, Avery finds that the Omo-Kuraz sugar plantations will require over 30% of the Omo River flow at a minimum. This could potentially rise to more than 50% depending on irrigation efficiency and the use of remaining land that has been set aside for possible future developments. As a result, a drop of 13 to 22 meters in the level of Lake Turkana is projected whilst an additional two meter drop is anticipated from the 3 year filling period of the Gibe III reservoir. For Lake Turkana, this would be devastating as its average depth is only around 30 meters.

The EEPSCO-commissioned Additional Study on Downstream Impacts (ASDI) presents a different, positive picture of Gibe III's downstream impacts. However, this has been contested by several sources including the ARWG who claim the document "rests on a series of faulty premises that it is further compromised by pervasive omissions, distortions and obfuscation" with the predetermined intention of validating the completion of Gibe III (ARWG, 2009: 4)

3. KEY DAM-INDUCED MIGRATION FLOWS

3.1. Direct Consequences of Gibe III on Migration Flows: Resettlement Patterns in the Omo Basin

Generally speaking, direct dam-induced displacement is divided into out-migration of those forcibly resettled as a result of the reservoir and in-migration of those working on the dam. Assuming though that out-migration flows are typically more disruptive in character, the focus in the following sections will primarily be on displacement and resettlement. As highlighted, the case of Gibe III calls in to question our understanding of what constitutes 'direct' dam-displacement owing to the parallel development of the Omo-Kuraz Sugar Project and reports of forcible displacement throughout the area. Though the Ethiopian government claims that no forcible displacement relating to Omo-Kuraz has taken place in the Lower Omo valley, the villagization program has been ongoing in the region. This paper attempts to track these out-migration flows from the little information that has been made publicly available in the hope of better understanding the dynamics between 'voluntary' and 'forced' migration flows in this context.

Resettlement in the Vicinity of Gibe III

The initial Environmental and Social Impact Assessment (ESIA) for Gibe III was prepared by the Italian firm Centre Elettrotecnico Sperimentale Italiano (CESI) for EEPKO and Salini Costruttori S.P.A in 2007, roughly one year after construction on the dam had begun. A Resettlement Action Plan (RAP) for the dam and reservoir area and a further ESIA for the Chida-Soda road realignment, both conducted by MDI Consulting Engineers, were released in January 2009 (MDI Consulting Engineers, 2009b). No follow up reports detailing the outcomes of the RAP have been released either through EEPKO or an independent body. The RAP found that 355 households totaling 2,627 persons would be displaced by the dam's construction and the creation of the reservoir. As can be seen from the table, the majority of those displaced were a result of the construction of the Chida-Soda road realignment built to replace that which was to be submerged by the reservoir with the construction workers' camps having less of an impact.

Table 1. Number of Affected Households by Project Component and Woreda.

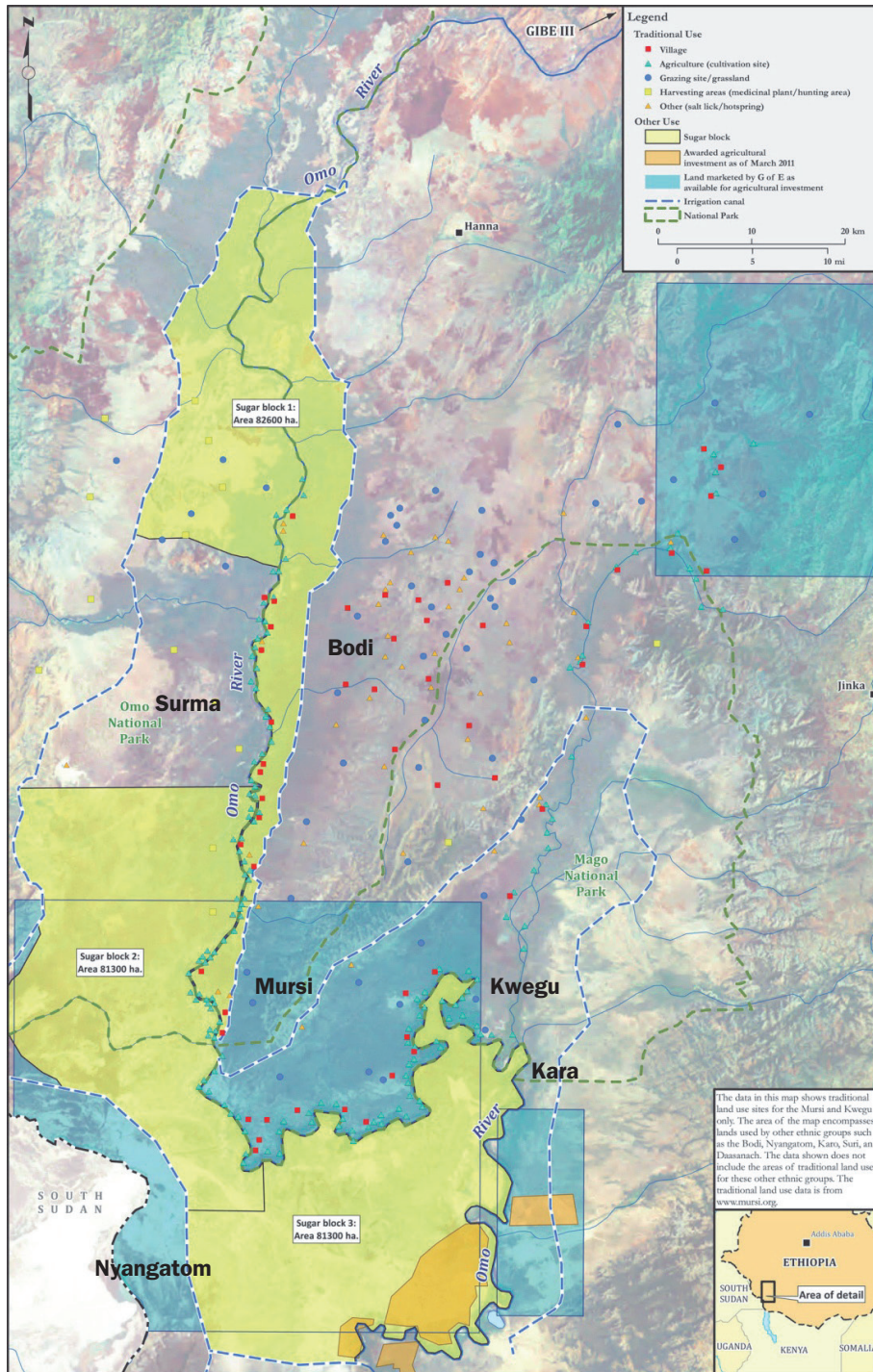
Woreda	Project Component			Total Households	Percent
	Main Road	Reservoir	EEPKO Camp		
Kindo Didaye	67	51	47	165	46.5
Kindo Koyssha	69	-	-	69	19.4
Loma	114	7	-	121	34.1
All Woredas	250	58	47	355	100.0
Percent	70.42	16.34	13.24	100.00	

Source: MDI Consulting Engineers (2009a)

Given the scale of the project, the total number to be resettled beginning from the first quarter of 2009 was relatively small. Nonetheless, the submersion of 211 km² of landscape has other noted indirect impacts on surrounding communities such as increasing the threat of attacks from wild animals, limiting access to natural forest resources such as firewood and reducing mobility across the river to conduct commerce with other communities and to graze livestock (Hailemariam, 2011: 85-86). With regards to resettlement, the RAP raises certain concerns, particularly in light of the less than favourable outcomes of the Gibe I resettlement process (CEE Bankwatch, 2008). First, it is worth noting the vulnerable economic position of the affected households. Unsurprisingly, 96% practice farming, usually a combination of growing crops and rearing livestock, as a livelihood strategy. Only 14%, however, have a secondary source of income in addition to this. Assuring, therefore, that households can continue their agro-pastoral practices from the same or an improved standing is therefore crucial to the long-term success of the resettlement process.

Worryingly though, the RAP, whilst outlining various income and livelihood restoration strategies, does not outline where the actual relocation sites are and how they compare to the areas left behind in terms of soil suitability for crops and grazing for livestock. The impact of incoming settlers on the receiving communities and whether competition for resources may arise from this is also not addressed by the RAP. Furthermore, there is no discussion of the project-affected persons (PAPs) capacities to access or cross the river and reservoir for their livestock and other commercial purposes. Indeed, the ESIA estimated that the grazing lands of a further 275 households (around 1,400 people) would be affected by the reservoir but they were not compensated or involved in any public consultations (CEE Bankwatch, 2008). The RAP states that 24 public consultations involving 455 participants

Figure 2. Omo-Kuraz plantations overlap with local settlements and restrict access rights to the Omo river and other grazing areas. The map also indicates land that has been set aside for future developments.



Source: Human Rights Watch 2012

regarding the resettlement process were carried out in total. However, the AWRG claim, based upon their own visits to five villages across woredas included in the RAP's public consultations list, that residents had no knowledge of such consultations or even of the Gibe III dam project itself. They further claim that there have been instances where local government officials have been instructed to fill the consultation forms out themselves without public participation (AWRG, 2009: 27). Regarding compensation for the PAPs, this took the form of cash payments for loss of farmland, perennial crops and trees and for houses and other structures. This amounted to a total of around \$2,300 on average per household (CEE Bankwatch, 2008). Given that the average payout per household for Gibe I was \$4,300 and that the majority of these PAPs have been further impoverished by their resettlement, it appears valid to question the sufficiency of this amount.

Displacement at Omo-Kuraz Sugar Project

The allegations of widespread displacement at the site of the Omo-Kuraz Sugar Project, backed up by satellite imagery from Human Rights Watch (HRW, 2014a), represent the most contentious and controversial aspect of resettlement regarding Gibe III thus far. As indicated by Figure 2, nearly all of the land of Nyangatom, as well as large parts of the Bodi, Kwegu, Mursi, Karo and Surma have become plantations on what is land deemed under-utilised by the Ethiopian government.

The total population living within the 'command area' of the project contained primarily within the woredas of Salamago and Nyangatom is estimated at 53,596, based upon a survey conducted by the Ethiopian Sugar Corporation (Demeke, 2014). However, understanding how this project has impacted on the migration patterns of people in the region is a difficult task. This is due not only to a level of uncertainty regarding these population figures but also because of the Ethiopian government restricting access to the area for international organisations whilst civil society activity in general remains extremely limited in Ethiopia (HRW, 2014b).

According to a recent Human Rights Watch report though, as of January 2013, around 6,500 ha of land traditionally used by the Bodi had been cleared for cultivation. Furthermore, in May 2012 an earthen diversion dam that had been constructed just upstream from Omo-Kuraz to divert waters to the irrigation canals had caused the flooding of around 500 ha of land and resulted in the displacement of around 220 Bodi households (HRW, 2014a). It is unclear where those affected by the clearances and floodings were relocated to or what compensation and support, if any, they received as a result. There are indications though that evicted villagers, both Bodi and Mursi, have been forced back into the ecologically degraded upland plains, without sufficient livestock, or have been pushed further south into the Omo Delta region of the Dassenach which already suffers from issues of over-crowding (Carr, 2012).

Nonetheless, Sugar Corp spokesperson Yilma Tibebe said on June 15th 2012 that "There is no one to be relocated at all, let alone forced relocation, due to the sugar development project". This statement, however, is followed up by the acknowledgement that "Around 2,250 resettled households will be given 1,700 ha of irrigable land, public services and a grain mill" (Davison, 2012). This is so that "the people can benefit from a settled way of life alongside the sugar farms" (Davison, 2012). This statement alludes to the government's villagization program in the area, which is deemed 'voluntary' and entirely distinct from the Omo-Kuraz Sugar Project. Public information as to the villagization scheme in the area and its relation to the Omo-Kuraz Sugar Project is limited. However, a leaked report from 2011/2012 of the South Omo Zone Pastoralist Areas Agriculture Bureau (2011) gives some indication of the numbers involved in addition to the figures quoted by Yilma Tibebe. The report outlines plans to undertake over the course of 2011 to 2012 the voluntary villagization of at least 8,877 households totaling 44,385 people across the woredas of Salamago,

Dassenach, Nyangatom, Hamer and Bennatsemay. The breakdown of how these numbers are dispersed across the woredas is presented in Table 2.

As can be seen, many of the households resettled by voluntary villagization were from Salamago and Nyangatom; the two main woredas that Omo-Kuraz's sugar plantations stretch across. According to the Head of the SNNPR Regional Bureau of Agriculture, quoted in a report by the Ethiopian Human Rights Commission (EHRC) on the status of human rights in the villagization programs, the ultimate target for planned resettlement is 100,000 households in the South Omo Zone by 2015 (Berile et al. 2013). This number could potentially account for the remaining population living within the 'command area' of Omo-Kuraz though no further details on these plans are provided.

Table 2. Breakdown by woreda of villagization in South Omo Zone.

Woreda	Number of Households
Salamago	2,517
Hamer	1,000
Nyangatom	2,176
Dassenach	2,728
Bennatsemay	456

Source: South Omo Zone Pastoralist Areas Agriculture Bureau (2011)

The EHRC report provides further insights into the blurred lines between those with the status of forcibly resettled and those voluntarily villagized. In reference to the large-scale agricultural developments underway in South Omo, it is reported by the authors that 'a situation of displacing residents from the areas and gathering them in the centres [central villages] might [have] happened' (Berile et al. 2013: 79). After raising the question of compensation for residents evicted from their land as a result of Omo-Kuraz and highlighting the woredas of Nyangatom and Salamago, as well as Meneshash, as sites for such displacements, the authors indicate that affected villages receive "special support". Precise details of this are not elaborated upon with the EHRC stating that "it was not possible to find sufficient information regarding the then existing situation and the process of payment of compensation when the people were displaced" (Berile et al. 2013: 79).

General implementation issues raised by the EHRC regarding the resettlement process include the absence of rules of procedure or adjudication of complaints related to villagization outside the regular courts of justice, thus marginalizing any likely grievances or issues faced by the affected communities. This is especially concerning given that the report also acknowledges the refusal of citizens in some woredas to move to the new villages (Berile et al. 2013: 84). Other issues regard the fact that in many of the assessed villages in the South Omo Zone, social services, amenities and infrastructure had either not been completed or initiated prior to the arrival of those resettled and that several villages reported shortages of available farming and grazing land. These findings contrast with public statements from the Ethiopian Sugar Corporation which highlight the full support of the program and the benefits conferred upon affected communities such as greater access to water and social services and improved food security (Ethiopian Sugar Corporation, 2013).

3.2. Indirect Consequences of Gibe III on Migration Flows: Ecological Modifications of the Omo River and Lake Turkana

As defined by the UNEP (2002), vulnerability can be understood as a combination of exposure to hazards and coping capacities. The African Development Bank Group's Socio-Economic Analysis and Public Consultations of Lake Turkana Communities clearly states that communities around much of Lake Turkana are vulnerable to ecosystem modifications given their low coping capacities: *"Most of these communities live utterly below the poverty line... Fishing has become the only source of income during drought and seems to be the only sustainable income generating activity in the area... Thus, any activity that shall in any way undermine this only promising source of sustainable income shall make these communities struggle to get out of poverty, sink deeper into poverty and become dependent on aid and relief"* (Kaijage and Nyagahand, 2009: 162-163).

Similarly, the ASDI (2009: 84) characterizes the majority of the Lower Omo valley woredas as food insecure with the agricultural economy based "almost entirely at subsistence level". Numerous studies have explored the relationship between water access, food security and migration patterns and find that migration plays an important role in people's responses to water scarcity and food and livelihood insecurity (Tucker and Yirgu, 2011; Afifi et al. 2012). The aim of the following sections is to chart potential future flows of migration due to the anticipated modifications to the ecosystems of the Omo River and Lake Turkana basins. To help illustrate these projections, a review of previous studies on the region regarding resource conflicts and migration flows related to periods of drought and the fluctuating water levels of Lake Turkana will be consulted.

The key push factors in this context concern changes to agricultural, pastoral and other water-related livelihood activities such as fishing. The main pull factor applies to the Omo-Kuraz Sugar Project where it is anticipated that nearly 118,000 jobs will be created once the factories and plantations are fully operational (Davison, 2012). For the purposes of this paper though, the rest of this section focuses on out-migration patterns around the Lower Omo valley and Lake Turkana on the assumption that the associated push factors are of a greater magnitude in terms of threats to livelihoods than the pull factors related to in-migration in these areas. This assumption is considered especially pertinent in this case due to an established history of migratory movements by various groups in the region in response to increasingly scarce water and grazing sources which have frequently resulted in inter-tribal and cross-border conflicts (Carr, 2012). This suggests, at the outset, that migration is likely to occur in response to increasingly scarce resources brought about by ecosystem modifications to the Omo River and Lake Turkana.

Climatic Variability, Contested Borders and Conflict

Tracking future migration flows around the Omo and Turkana basins as a result of Gibe III and the irrigation schemes of Omo-Kuraz is a challenging task due to a lack of publicly available information, the semi-nomadic nature of many of the groups living in the region and the porous borders between countries where many groups straddle different countries.⁶ This is perhaps best illustrated with regards to the contested region of the Ilemi Triangle, a 10-14,000 km² area where Kenya, Ethiopia, South Sudan and Uganda meet which has been a site of conflict and remains absent of meaningful government administration (International Rivers, 2013).

Today the region is most forcefully claimed by Kenya, allegedly motivated by oil prospects in the region, though South Sudan has reportedly written to the UN

⁶ Amutabi (2010) notes that for the most part, national borders and the concept of nationality itself are either unimportant or meaningless to the relations and movements of different groups in the region.

Figure 3. Tribes of the Lower Omo Valley and Lake Turkana.



Source: Carr 2012.

and the African Union to express its dissatisfaction with this border delimitation (International Rivers, 2013). Overlapping claims for seasonal grazing lands between the Toposa⁷ of South Sudan, the Nyangatom and Dassenach⁸ of Ethiopia and the Turkana of Kenya have characterized a majority of the conflicts between different groups in the region but such conflicts have not been confined to the Ilemi Triangle as resources have become increasingly scarce in recent years. Several studies of the region have considered the issue of increasing climatic vulnerability, food and water insecurity and dwindling grazing lands.⁹ These could provide some indication of likely responses, including migration, of affected peoples in the event of the heightened environmental stresses that Gibe III and Omo-Kuraz are expected to cause.

Identification of Longer-Term Migration Patterns

Though it is difficult to be precise with regards to numbers and ultimate destinations for agro-pastoralist groups, it is arguable that the combination of a collapse in livelihood strategies, increased conflict and tensions over scarce resources as well as greater interaction with outside groups and actors is likely to lead to substantial distress migration (Carr, 2012). In view of this backdrop of contested and porous borders, increasing climatic variability and inter-group conflicts over scarce resources, a paper from International Rivers¹⁰ (2013) considers some possible migratory dynamics as a result of further environmental stresses arising from Gibe III and Omo-Kuraz, based on Avery's (2012) projections. One of the most severe ecosystem modifications will take place at the shallow, northern end of Lake Turkana, which is predominantly populated by the Turkana to the west and the Dassenach to the north and east. The northern shore is expected to shift southwards over time by around 40 km creating a land bridge entirely within Kenya to the south of Dassenach territory, bisected by the much-reduced Omo river (International Rivers, 2013). This will likely force many Dassenach to follow the lake southwards into Kenya. At the same time, the densely-populated western delta has seen a reduction in water flow which has impacted farming for the Turkana and forced many groups to migrate into the central and eastern portions of the delta where annual floods are more likely to occur. This could spark conflict between the Dassenach and Turkana and potentially force many Turkana people west across the Ugandan border towards Karamajong and Jie¹¹ territory or further eastward into the lands of the Gabra peoples¹² of whom the Turkana have a history of raiding their livestock. According to International Rivers, the geographical barrier of Lake Turkana has helped to inhibit outbreaks of conflict between the two in the past (International Rivers, 2013). The potential influx of Turkana and Dassenach into Gabra territory on the eastern shore may reduce grazing access for the Gabra and, alongside the lowering water levels, this may force them to move north and east towards the land of the Borana peoples to the north and east and potentially over the Ethiopian border towards the territory of the Moyale or

7. The Toposa are closely linked to Nyangatom, referred to by Amutabi (2010) as 'cousins'.

8. Within Kenya, the Dassenach are better known as Merille.

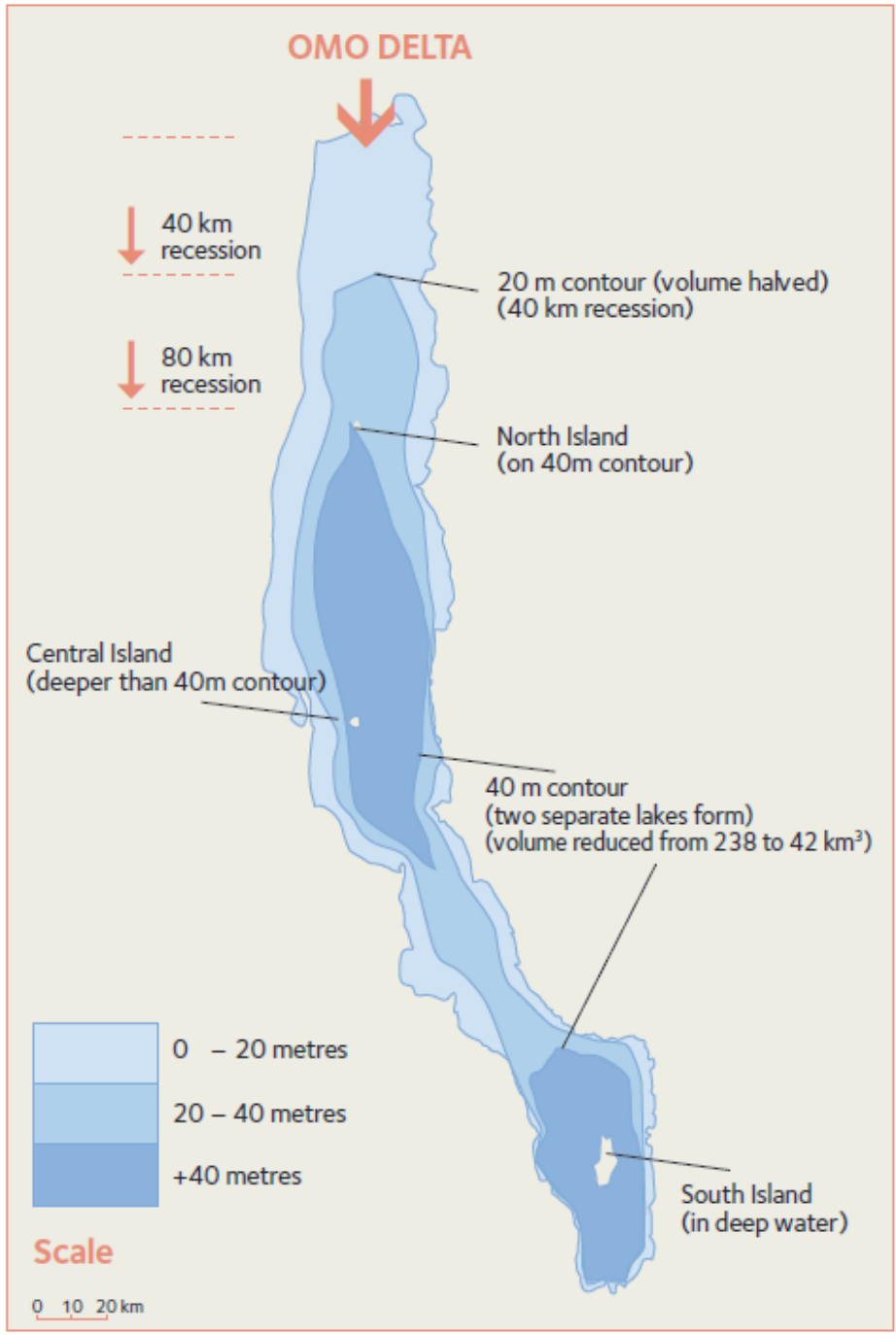
9. For example, Ynitso (2012) looks at the case of the Dassenach who have seen an increase in the number of conflicts they have been engaged in with the four main surrounding groups (namely the Turkana and Gabra in Kenya and the Nyangatom and Hamar in Ethiopia) which is explained largely in terms of pasture and water scarcity. This situation has led to extreme food insecurity and seen large-scale migration of Dassenach further south to the delta of Omo-Turkana and across the border into Kenya.

10. The author of the report, a natural scientist with many years of field experience in the region, requested anonymity. Sixteen prominent academics and experts have, however, endorsed the report's findings.

11. The Karamajong are an ethnic group in north-east Uganda who have historic ties to the Turkana. The Jie are another group in the north-east who are considered part of the Karamajong cluster.

12. The Gabra are a nomadic group of camel-herders predominantly situated in the Chalbi desert of northern Kenya, east of Lake Turkana, and the Highlands of southern Ethiopia.

Figure 4. Changes to lake volume and surface area at a range of projected water loss levels.



Source: Avery, 2012)

Somali peoples. These likely migrations are expected to result in increased outbreaks of violence and inter-group tensions (International Rivers, 2013).

A further drastic consequence for Lake Turkana is the possibility of the lake splitting into two parts along the shallow midpoint as illustrated in Figure 4 (Avery, 2012). This split would impact the southern portion severely as it would no longer receive flows from the Omo River and as such it would become even more saline.¹³ The north, on the other hand, would become comparatively fresher and be able to support greater biodiversity as a result of retaining more of the nutrient inflows from the Omo River. This dual outcome, alongside declining grazing pastures for livestock, is expected to push those living near the southern portion of the lake to migrate northwards in order to take up fishing there (Carr, 2012).

As characterized by Snyder (Avery, 2010: 15), food aid throughout much of Lake Turkana is more or less an “institutionalised drought-coping mechanism”, whilst in the Lower Omo valley it has typically only been the Nyangatom who have received food aid regularly (Hathaway, 2009). Given the prospect of restricted access to the Omo River and the end of the annual flood cycle, this may push tribes of the Lower Omo towards semi-urban settlements or internally displaced persons camps around Lake Turkana such as at Lodwar and Kakauma as well as South Sudan where food aid relief programs are in place (International Rivers, 2013: 12; Carr, 2012: 90). Additionally, depending on the success of the villagization programs, the displacement of groups such as the Mursi and Bodi around Omo-Kuraz may cause them to migrate southwards as well thus placing extra stress on this region, or potentially towards the Ilemi Triangle and the Sibiloi/Koobi Fora National Park in Kenya (International Rivers, 2013). A summary of these and other potential population movements and the likely conflicts that may arise from them are summarized in Figure 5.

The scale of these and other potential migration flows depends largely on the extent and intensity of the changes to the ecosystems of the Omo River and Lake Turkana borne by Gibe III and Omo-Kuraz. Nonetheless, as outlined by International Rivers (2013: 9): “The cumulative impact of these developments on the ecosystems and societies of the Lower Omo and Lake Turkana will be severe in the short and medium terms, and potentially catastrophic in the longer term.”

4. MAIN GAPS IN POLICY AND LEGISLATIVE FRAMEWORK AT THE NATIONAL AND INTERNATIONAL LEVEL

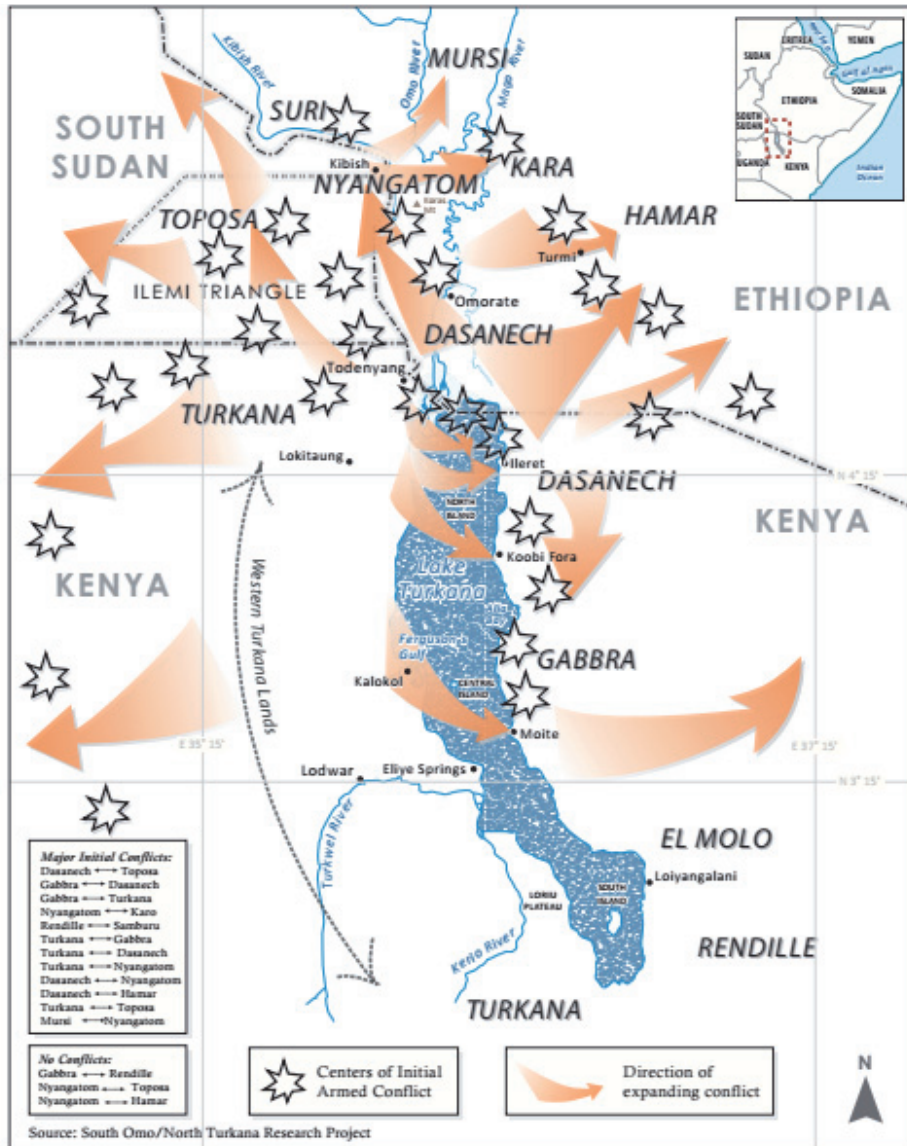
4.1. Lack of Protection of Displaced and Resettled People

Assessment of the policy framework concerning large-scale development and commercial projects and the resettlement process

Ethiopia’s drive for socio-economic development promises various favourable prospects for the country with regards to large-scale projects such as Gibe III and Omo-Kuraz. However, numerous gaps remain in policy, institutional capacity, legislation and procedure which have serious implications for the displacement and resettlement of populations affected by their implementation. The recommendations of the 2000 report from the World Commission on Dams (WCD) regarding dam developments, which includes dam-related infrastructure such as irrigation canals, will provide some reference points for the issues raised (American University International Law Review, 2001). The main issues identified by this article include:

¹³ However, if a river between the northern and southern portions were to be formed this would slow the process down.

Figure 5. Direction and magnitude of projected conflict points arising from Gibe III.



Source: Carr, 2012

Belated and inadequate Environmental and Social Impact Assessments.

The original ESIA for Gibe III was approved by the Environmental Protection Agency (EPA) nearly two years after construction on the dam had begun. This is in violation of international standards as outlined in the WCD report (2001) which recommends a balanced and comprehensive assessment of environmental and social impacts and the consideration of possible alternatives to large dam construction prior to any decision-making. At the national level, Ethiopia's own Environmental Impact Assessment Proclamation (2002; Part 2: 3.1) stipulates that "Without authorization from the [Environmental Protection] Authority or from the relevant regional environmental agency, no person shall commence implementation of any project that requires environmental impact assessment." Additionally, the ESIAs

have been widely discredited as unscientific and impartial owing to the pressure for a positive assessment given the project was two years into its construction phase when conducted (ARWG, 2009; Hathaway, 2009). There was no ESIA made for the Omo-Kuraz Sugar Project though its irrigation schemes required a dam construction and in the long-term involves the diversion of greater volumes of water than Gibe III. The WCD also recommends that dam-related infrastructure such as irrigation canals are included in ESIA. Finally, the belated release of an ESIA concerning downstream impacts on Lake Turkana did not take into account the impact of the Omo-Kuraz development in its projections.

Belated and limited public participation and consultation.

The majority of public consultations for Gibe III in the immediate project area and in the Lower Omo valley were conducted 10 to 17 months after construction on the dam had begun and have been criticised as “limited” in scope, “selective” in terms of the stakeholders involved and for taking place “without any intention of influencing the dam-planning process” (Hathaway, 2009: 7-8). Public consultations at Lake Turkana were conducted by the African Development Bank Group (Kaijage and Nyagahand, 2009) and were more extensive but preceded the development of Omo-Kuraz, thus these projected impacts are not accounted for in the authors’ findings.

Lack of clarity over the status of those displaced at Omo-Kuraz.

The distinction drawn between being voluntarily and involuntarily resettled has implications for the treatment of the individuals undergoing resettlement in terms of their right to compensation as well as government liability as to the resettlement process itself. Whilst questions persist as to the voluntary nature of the villagization scheme as a whole, those at Omo-Kuraz who have been forcibly displaced have not been adequately compensated in the manner required in the government’s own Resettlement Policy Framework as set out in the RAP and instead have been subsumed into the wider voluntary villagization scheme. This ambiguity has served to make the status and rights of those resettled at Omo-Kuraz unclear.

Inadequacy of the compensation packages for displaced persons and limited budgetary and institutional capacities of the Villagization Program.

The WCD report recommends that those affected by dam construction receive entitlements that improve their livelihoods and that they receive a priority share in the project’s benefits. The amount received by those displaced by the construction of Gibe III is less than what was paid out to those affected by Gibe I, which in itself has been deemed insufficient (CEE Bankwatch, 2008). However, cash represents only one aspect of a compensatory package and whilst the RAP outlines certain income restoration and social development plans as well as monitoring mechanisms to assess their implementation, no updates as to the progress of these plans are publicly available. This is concerning given the resettlement experiences of Gibe I, the lack of promised social services for villagized settlers at Omo-Kuraz and other historic examples of insufficient compensatory packages for resettled peoples in Ethiopia (Alemu, 2013). Regarding the villagization scheme at Omo-Kuraz, though there are some positive indications that delivery of services such as schools and health clinics have been implemented successfully (Godanna, 2013: 39-40) this has not been the case for all of the resettlement sites in the region. A lack of budgetary and institutional capacities to comprehensively implement such an ambitious, large-scale program has been cited as primary reasons why there has been such a significant lack of service provision (Tadesse, 2009).

Assessment of the legislative and institutional framework concerning hydro-power development, land-use and displacement.

In recent decades, a significant legal framework on environmental, land and water management has been developed in Ethiopia as well as provisions concerning the resettlement of those displaced for public purposes. Furthermore, the World Bank and the African Development Bank have worked with the Ethiopian government and provided guidance on social and environmental laws and policies relating to hydropower developments and subsequent displacement of populations. Nonetheless, the findings of this paper suggest that a considerable gap remains between such provisions, the reality experienced by those undergoing resettlement and the ultimate detrimental impact on the environment. Table 3 provides an outline of the legislative framework guiding certain sectors relevant to hydropower developments in Ethiopia in order to help explain this gap. The remaining section considers further legislative and institutional gaps that have negative implications for those facing displacement and resettlement in Ethiopia and Kenya.

Table 3. Summary of legislative framework for certain sectors relevant to the resettlement process in Ethiopia.

Sector	Main legal texts	Main gaps preventing appropriate resettlement practices
Resettlement and villagization legal and policy framework	Expropriation of Landholdings for Public Purposes and Payments of Compensation Proclamation (No 455/2005); Rural Land Administration and Land Use Proclamation (No 135/2007); National Rural Development Policy and Strategy (1996)	Installing EEPCO as the main implementer of the RAP created a conflict of interests. The fact that no mechanisms for monitoring EEPCO are detailed makes this especially problematic. Regarding displacement at Omo-Kuraz, there are no regional legal agreements in place dealing directly with villagization and those affected are excluded from compensatory provisions owing to the voluntary status of the scheme.
Energy legal and policy framework	Electricity Proclamation (No 86/1997) Growth and Transformation Plan (2010)	To ensure that the GTP's objective were not compromised is a likely reason as to why environmental and social concerns became sidelined and EEPCO were afforded all of the responsibility for the resettlement process.
Environment legal and policy framework	Environmental Impact Assessment Proclamation (No 299/2002) Environmental Protection Organs Establishment Proclamation (295/2002)	Though certain legal safeguards concerning the environment are in place at the national level, the hierarchy of governance means that the established Environmental Protection Authority is less powerful and influential than other offices such as EEPCO and so any objections or concerns are often subsumed.
Water management legal and policy framework	Water Resources Management Proclamation (No 197/2000) River Basins Council and Authorities Proclamation (No 534/2007)	The WRMP (2000) lacked an integrated approach to water resources management with few provisions given with regards to inter-sectoral and regional coordination and linkages (Tamrat, 2008). The River Basins Council proclamation aimed to overcome the deficiencies of this centralized system but has been hampered by a lack of finances and as such is primarily dependent on the federal government for its budget.

Source: Author

i). Few safeguards concerning land rights of pastoralists.

Though the Ethiopian Constitution declares that land in Ethiopia is the property of the state, Article 40:5 also specifies that "Ethiopian pastoralists have the right to free land for grazing and cultivation as well as the right not to be displaced from their own lands." However, neither federal nor regional laws have thus far been developed to enforce this principle effectively (Hagmann and Mulugeta, 2008). As such, the legal title of pastoralist's land-holdings remain unclear and their communal and nomadic land-use practices leave them vulnerable to encroachment and mismanagement. This pressure on pastoralist landholdings has been intensified by proclamations detailing favourable tax exemptions and export facilitations for land investors and developers (Land Investment Proclamations and Regulations 2002, 2003 & 2005).

ii).Absence of a bilateral agreement on the joint management of the Omo River basin.

The lack of any formal agreement or legislative framework concerning the joint management of the Omo basin between Kenya and Ethiopia has precluded appropriate consultation between the governments as to the impacts of Gibe III and Omo-Kuraz on Lake Turkana. This has meant that the Ethiopian government has been free to pursue its development plans on the Omo river without limits or safeguards on its activities.

iii).Highly centralized and sectoral planning and decision-making processes for dam construction.

The Ethiopian model for the planning and decision-making for Gibe III, as for Omo-Kuraz, is an example of a top-down approach which marginalizes the concerns and input of relevant stakeholders. As a result, the needs, constraints and livelihood realities of affected communities are not adequately taken into account (Tefera and Stroosnijder, 2007).

4.2Lack of Political Will to Confront Long-Term Indirect Migratory Impacts at the International Level

There is no framework currently in place to address long-term, indirect migration flows resulting from the cumulative impacts of Gibe III and Omo-Kuraz, either at the national level in Ethiopia and Kenya or between the two countries concerning likely trans-boundary flows. For the Ethiopian government this can be attributed quite clearly to their unwillingness to acknowledge the detrimental impacts of the developments in the South Omo zone given the large sums of money they have invested in the projects and their reliance on their successful implementation in order to achieve their GTP targets. The Kenyan government is also heavily invested in the Gibe III project having signed a power exchange and connection agreement with Ethiopia in 2006. This may help to explain the Kenyan government's initial reluctance to confront the Ethiopian government over its developments.¹⁴ Nonetheless, in response to the concerns of a number of civil society organisations¹⁵ in Kenya, the government has started initiatives to combat the threat facing Lake Turkana.

So far though no agreement with the Ethiopian government has been reached and the focus has not extended to consideration of how to manage the likely impacts on the populations, including of migration flows. To what extent and in what form these migration flows will occur remains unclear. As such, this paper hopes to spur further methodological research into this unfolding issue. ♦

14 As part of this agreement, the World Bank funded Ethiopia-Kenya Power System Transmission Line from Gibe III is currently under construction and will have the capacity to deliver 1,000MW of electricity (Tropics Consulting Engineers Plc & Gamma Systems Ltd, 2012).

15 These include the Friends of Lake Turkana, the South Omo and North Turkana Project, the Turkana Development Organizational Forum and the Turkana Pastoral Development Organization.

BIBLIOGRAPHY

BOOKS

- McCully, P., 1996 *Silenced Rivers: The Ecology and Politics of Large Dams*. Zed Books.

ARTICLES AND REPORTS

- Afifi, T. et al., 2012 Where The Rain Falls: Climate Change, Food and Livelihood Security and Migration. *Global Policy Report of the Where the Rain Falls Project*. Bonn: CARE France and UNU-EHS.
- Alemu, B. Y., 2013 Expropriation, Valuation and Compensation Practice in Ethiopia: The Case of Bahir Dar City and Surrounding. *Property Management*, 31(2), 132-158.
- American University International Law Review.
- 2001The Report of the World Commission on Dams-Executive Summary. *American University International Law Review* 16, no. 6 : 1435-1452.
- Amutabi, M. N., 2010 Land and Conflict in the Ilemi Triangle of East Africa. *Kenya: Kenya Studies Review*, 1.
- African Resources Working Group., 2009 A Commentary on the Environmental, Socioeconomic and Human Rights Impacts of the Proposed Gibe III Dam in the Lower Omo River Basin of Ethiopia.
- Avery, S., 2010 Hydrological Impacts Of Ethiopia's Omo Basin On Kenya's Lake Turkana Water Levels & Fisheries. *The Africa Development Ban*, Tunis, Nairobi.
- Avery, S., 2012 Lake Turkana and the Lower Omo: Hydrological Impacts of Major Dam and Irrigation Developments. *African Studies Centre*, the University of Oxford.
- Avery, S., 2013 What Future for Lake Turkana? *African Studies Centre*, the University of Oxford.
- Berile, E. et al., 2013 The Status of Human Rights in Ethiopian Villagization Programs. *Ethiopian Human Rights Commission*, Addis Ababa.
- Brittain, M. & Clack, T., 2010The 'Ella' Stone Platforms in Mursiland, Lower Omo Valley, South-western Ethiopia. *Antiquity*, Vol. 84: 323
- Carr, C. J., 2012 Humanitarian Catastrophe and Regional Armed Conflict Brewing in the Transborder Region of Ethiopia, Kenya and South Soudan: The Proposed Gibe III Dam in Ethiopia. *African Resources Working Group*.
- CEE Bankwatch Network & Campagna per la Riforma della Banca Mondiale., 2008 The Gilgel Gibe Affair: An Analysis of the Gilgel Gibe Hydroelectric Projects in Ethiopia.
- Damtie, M., & Bayou, M., 2008 Overview of Environmental Impact Assessment in Ethiopia: Gaps and Challenges. *MELCA Mahiber*, Addis Ababa, Ethiopia.
- Fong, C., 2014 A Cascade of Development on the Omo River: Downstream Effects of the Gibe III Filling and Associated Commercial Irrigation Projects . *International Rivers*
- Gebre, Y., 2012b Environmental Change, Food Crises and Violence in Dassanech, Southern Ethiopia. *Research Report Peace and Conflict Studies No. 1*. Freie Universität, Berlin, September 2012
- Godanna, N., 2013 Implications of Government-Led Large-Scale Land and Water Acquisitions on Local Communities Livelihoods in Ethiopia: Case of Omo-Kuraz Sugarcane Development. *International Institute of Social Studies*. 1 (1)
- Hagmann, T., & Mulugeta, A., 2008 Pastoral conflicts and state-building in the Ethiopian Lowlands. *Africa Spectrum*, 19-37.
- Hailemariam, W. F., 2011The Challenges of Renewable Energy Resource Development: The Case of Gilgel Gibe III Hydropower Project in Ethiopia. *Centre for Development and the Environment*, University of Oslo, p85-86.
- Hathaway, T., 2009 *Facing Gibe 3 Dam: Indigenous Communities of Ethiopia's Lower Omo Valley*. International Rivers.
- Human Rights Watch., 2012 "What Will Happen if Hunger Comes?" *Abuses Against the Indigenous Peoples of Ethiopia's Lower Omo Valley*.
- Human Rights Watch., 2014a *Ethiopia: Land, Water Grabs Devastate Communities*.
- Human Rights Watch., 2014b *World Report 2014: Ethiopia*.
- International Rivers., 2011 *Ethiopia's Gibe III Dam: Sowing Hunger and Conflict*.
- International Rivers., 2013 *The Downstream Impacts of Ethiopia's Gibe III Dam: East Africa's "Aral Sea" in the Making?*
- Kaijage, S. & N. Nyagahand., 2009 Socio-Economic Analysis and Public Consultation of Lake Turkana Communities in Northern Kenya. *African Development Bank Group*.
- Keeley, J. et al., 2014 Large-Scale Land Deals in Ethiopia: Scale, Trends, Features and Outcomes to Date *International Institute for Environment and Development*.
- McCartney, M. et al., 2000 Ecosystem Impacts of Large Dams. *Thematic Review II, 1*. IUCN, UNEP, WCD.
- Mann, C. C., & Plummer, M. L., 2000 Can Science Rescue Salmon?. *Science*, 289 (5480), 716-719.
- Oakland Institute., 2011 *Understanding Land Investment Deals In Africa: Half A Million Lives Threatened By Land Development For Sugar Plantations In Ethiopia's Lower Omo Valley*.
- Oakland Institute., 2013 *Understanding Land Investment Deals in Africa, Ignoring Abuse in Ethiopia: DFID and USAID in the Lower Omo Valley*.
- Petts, G. E., 1980 Long-term Consequences of Upstream Impoundment. *Environmental Conservation*, 7(04), 325-332.
- Tadesse, A., 2009 The Dynamics of Resettlement with Reference to the Ethiopian Experience. *Kimmage Development Studies Centre*.
- Tamrat, I., 2008 *Policy and Legal Framework for Water Resources Management in Ethiopia*.
- Tefera, B., & Stroosnijder, L., 2007 Integrated Watershed Management: A Planning Methodology for Construction of New Dams in Ethiopia. *Lakes & Reservoirs: Research & Management*, 12(4), 247-259.

- Tucker, J., & Yirgu. L., 2011 Water in Food Security Assessment and Drought Early Warning: Experience from Sub-Saharan Africa with a Special Focus on Ethiopia. *RIPPLE*.
- Turton, D., 2010 The Downstream Impact. *Text of talk given at the School of Oriental and African Studies, London, 11.*
- UNDP., 2013 *Assessing Progress in Africa Towards the Millennium Development Goals.*
- UNEP. 2002 *Assessing Human Vulnerability to Environmental Change: Concepts, Issues, Methods and Case Studies.*
- World Bank., 1999 World Bank: Ethiopia - The Gilgel Gibe Resettlement Project. *Africa Region Findings*; no. 141. Washington, DC.

GOVERNMENT DOCUMENTATION AND LEGAL TEXTS

- Agriconsulting S.P.A and MDI Consulting Engineers. 2009 *Environmental And Social Impact Assessment: Additional Study on Downstream Impact.*
- Constitution of the Federal Democratic Republic of Ethiopia, 21 August 1995.
- Ethiopian Electrical Power Corporation. 2009a *Environmental And Social Impact Assessment Executive Summary.*
- Ethiopian Electrical Power Corporation. 2010b *Brief About EEPSCO.*
- Ethiopian Electrical Power

- Corporation. 2010c *Environmental and Social Issues Related to the Gibe III Hydroelectric Project.*
- Federal Ministry of Agriculture and Rural Development. 2011 *The Best Investment Opportunity in SNNP South Omo.*
- MDI Consulting Engineers. 2009a *Resettlement Action Plan: Dam and Reservoir Area.*
- MDI Consulting Engineers. 2009b *Environmental and Social Impact Assessment: Chida- Sodo Road Realignment.*
- Ministry of Finance and Economic Development. 2010 *Growth and Transformation 2010/11- 2014/15.*
- South Omo Zone Pastoralist Areas Agriculture Bureau. 2011 *Villagization Plan.*
- Tropics Consulting Engineers Plc & Gamma Systems Ltd. 2012 *Ethiopia-Kenya Power Systems Interconnection Project: Revision of Environmental and Social Impact Assessment and Resettlement Action Plan Studies.*

WEBSITES

- Arnold, D. 2013 Kenya, Ethiopia Mediating Omo River Water Controversy. *Voice of America News.* October 16.
- Biron, C. L. 2012 World Bank Approves Contentious Ethiopia-Kenya Electric Line. *Inter Press Service News Agency.* July 2012.
- Davison, W. 2012 State Sugar Project

- Harming Ethiopian Tribes, Rights Group Says. *Bloomberg News.* 18 June.
- Demeke, A. 201 The Omo-Kuraz Sugar Development Project. *Aiga Forum.* 13 July
- Ethiopian Sugar Corporation. 2013 Residents Around Omo Kuraz Happy With Sugar Development Project and Villagization Program. *Ethiopian Herald Press.* 9 August.
- IRIN News. 2011 Ethiopia: The Great Land-Grab Debate. *IRIN News.* 11 March.
- Johnson, L. 2010 *Kenya Assessment -Ethiopia's Gibe III Hydropower Project Trip Report.* Mursi Online
- Manson, K. 2014 Ethiopia Uses Electricity Exports to Drive Ambition as an African Power Hub. *Financial Times.* 16 February.
- Smith, D. 2013 Ethiopia Hailed as 'African Lion' with Fastest Creation of Millionaires. *The Guardian.* 4 December.

INTERVIEWS

- Correspondence by email with Professor David Turton, Senior Research Fellow of the African Studies Centre at the University of Oxford on 31st March 2014.

THANITA YAMSIRI

Water management in Thailand: dams and the voice of the affected and displaced people

Located in the monsoon region of Southeast Asia, Thailand is blessed, and sometimes cursed, by abundance of water supplies. As the country opens to international trade, the richness in natural resources and large alluvial plains have transformed Thailand to emerge as “the rice bowl of Asia” in which the agricultural product is one of the main pillars of national income (Water Resources System Research Unit, Chulalongkorn University, 2013). As the main rice exporter, the Thai government controls and centralizes water resources policies for better management in order to support a growing cultivation. Floods and droughts are both very common and affect farmlands. Mismanagement can result in devastation and will trigger economic upheaval or political turmoil. Consequently, large dams have been built all over the country and yielded positive results by expanding irrigation areas. Experience shows that a construction of mega dams involves forced relocation, environmental degradation and immensely affects people’s livelihood. However, in the government’s perception and the tacit recognition of the majority, for the common good, sacrifice needs to be made.

Nevertheless, such an idea is problematic. Despite the undeniably benefit of dams, many people affected by their presence are the victims of the state’s water control. Their grievances are ignored and their protests have been merely recognized as small groups causing political turmoil. Furthermore, the notion of migration and resettlement in Thailand are mostly limited to a regular flow of either economic migrants or asylum seekers from neighboring states. This perception reflects the problem that environmental migration and forced displacement have had no platform on the government’s agenda. Thus, by bringing together stories from the lost voice of dam-induced migrants in the past and the voice of possible displaced people in the future, this paper is a humble attempt to speak on their behalf with the hope to raise an awareness that construction of dams is not merely the notion of people’s sacrifice for national development, but also in many cases represents the dilemma for voiceless local communities.

In order to clarify this claim, the paper will be divided into three main parts. First, the overview of water management in Thailand and its recent controversy over the Great Flood in 2011 will be presented. Second, environmental migration and the socio-cultural impacts of building large dams will be exemplified through case studies. It is hoped that these cases will illustrate how livelihoods have been transformed. Third, the Thai government’s new mega project to build more dams will be explored alongside the responses of local movements.

1. FLOODS, DROUGHTS AND WATER MANAGEMENT IN THAILAND

1.1 Overview of Thailand

Thailand covers a land area of 514,050 square kilometre (km²) or 321 million *rai*¹ of which about 40 per cent (131 million *rai*) is an agricultural area (Royal Irrigation Department, 2010). The country can be characterized into six main regions: the *Chao Phraya* Central Plain, the Southeast Coast, the Northeast Plateau, the Central-Highlands, the North and West Continental Highlands and the South Peninsular. In this paper, two main regions are of concern in terms of government targeting for dam construction. First, the Northern part, predominantly a highland and mountain ranges, generates the four main rivers- *Ping*, *Wang*, *Yom*, and *Nan*- which are converged to “the lifeline of the Central Plain,” the *Chao Phraya* River. Second, the Northeast, accounting for one-third of the country, is a dry plateau with saline soils problem. Floods and droughts are more severe in this region (Water Environment Partnership in Asia, n.d.).

As for the hydrological characteristics, the country can be divided into 25 river basins and 254 sub-basins (Department of Water Resources, 2006). According to the Royal Irrigation Department (2012), average rainfall is estimated to be 1,574 millimetre (mm) per year with an annual runoff of around 213,424 million cubic metre (m³). Annually, about 183,001 million m³ is accounted for the runoff in wet season while in the summer it is estimated to stand at 30,423 million m³. Currently, the total capacity of dams and reservoirs in Thailand are 76,002 million m³ or 35.6 per cent of the overall runoff water. Around 20,000 million m³ needs to be retained as the dead storage. However, water quantity ranges from region to region depending on geography and local climatic conditions.

Figure 1. The description of 25 major River Basins in Thailand

Basin No.	Name of River Basins	Catchment Area (km ²)	Average Runoff (MCM.)	Storage capacity (MCM.)	Irrigation Area (rai)	Water Requirement (MCM./year)				
						Domestic Consumption	Tourism Industry	Ecological Balance	Irrigation Agriculture	Hydropower
1	Salawin	17,920	8,571	24.00	188,948.00	11.96	4.46	1,027.81	616.93	-
2	Mae Khong	57,422	19,362	1,551.00	1,692,333.00	132.57	1.98	1,145.69	4,323.33	-
3	Kok	7,895	5,279	30.00	520,767.00	14.90	0.43	680.00	401.39	-
4	Shi	49,477	8,752	4,246.00	1,863,173.00	195.17	49.62	573.33	3,052.82	2,156.00
5	Mun	69,700	26,655	4,255.00	1,819,785.00	337.88	94.30	956.63	2,628.85	591.30
6	Ping	33,898	7,965	14,107.00	1,942,927.00	75.26	1.00	457.27	2,428.20	3,623.00
7	Wang	10,791	1,104	197.00	472,350.00	20.21	1.00	48.00	487.42	45.00
8	Yom	23,616	3,117	98.00	994,205.00	53.87	0.08	315.36	859.13	-
9	Nan	34,330	9,158	9,619.00	1,780,637.00	66.29	0.32	315.36	2,870.80	2,583.00
10	Chao Phraya	20,125	22,015	33.00	5,731,375.00	1,594.40	646.05	1,250.00	8,768.59	-
11	Sakakrang	5,191	1,297	162.00	436,410.00	8.62	-	3.35	878.75	-
12	Paak	16,292	2,820	124.00	661,120.00	72.32	23.28	158.00	927.38	-
13	Thachin	13,682	22,300	416.00	2,385,259.00	94.94	310.25	1,000.00	4,292.11	-
14	Mae Klong	30,837	7,973	26,690.00	3,400,000.00	20.34	-	1,577.00	4,323.33	4,670.00
15	Prachinburi	10,481	5,192	57.00	733,862.00	8.08	2.78	377.00	838.32	-
16	Bang Pakong	7,978	3,713	74.00	1,353,263.00	14.18	9.05	946.00	2,243.60	1.94
17	Tonglesap	4,150	6,266	96.00	123,720.00	12.60	-	9.80	197.00	-
18	East Coast	13,830	11,115	565.00	427,000.00	129.10	83.50	74.70	578.46	79.00
19	Phetchaburi	5,603	1,400	750.00	562,688.00	14.30	2.90	67.00	1,110.00	693.00
20	Prachuap	6,745	1,420	537.00	327,015.00	18.00	2.97	39.10	1,383.00	-
21	Khiri Khan Coast									
22	South East Coast	26,353	23,270	5.00	1,780,481.00	56.40	8.70	161.70	1,129.10	2,577.00
23	Ta Pi	12,225	12,513	5,865.00	245,970.00	25.90	10.00	3,085.20	144.60	2,596.00
24	Songkhla Lake	8,495	4,896	28.00	905,550.00	56.45	37.50	312.00	2,994.70	-
25	Putani	3,858	2,738	1,420.00	337,878.00	31.20	2.44	670.80	441.11	1,152.00
	South West Coast	21,172	25,540	20.00	339,273.00	53.20	18.90	74.80	253.00	-
	TOTAL	512,066	244,431	70,769.00	31,025,989.00	3,118.14	1,311.51	15,325.90	48,171.92	20,767.24

Source: Department of Water Resources, 2005

In general, climate in Thailand is dominated by the southwest monsoon (mid May-mid October) and the northeast monsoon (mid October-mid February). The former brings heavy rainfalls whereas the latter involves dry and cold conditions. Under these two influences, three seasons can be identified: rainy, winter and summer. The recent report by the Water Resources System Research Unit of Chulalongkorn

1 6.25 *rai* = 1 ha

University (2013) suggests that global climate change will directly affect the supply of water in Thailand due to higher temperatures, tropical storms and rising sea levels. It also projects that such a threat will massively destroy cultivation and Bangkok, the capital city, might be submerged within twenty years. Additionally, the El Niño event, characterized by an extended period of dry and drought, as well as La Niña, which exacerbates heavy rainfalls, have both increased in it scale and sequence in the region. At present, Thailand is facing even more severe climatic variability. Heavy floods and prolonged droughts have affected wider areas throughout the last thirty years (TRF- Climate Change, 2008). These on-going phenomena tend to increase and will put great pressures on water management in Thailand.

Map 1. Total Area of 25 basins in Thailand



1	Salawin	14	MaeKlong
2	Mekong	15	Prachin Buri
3	Kok	16	Bang Pakong
4	Chi	17	Tonle Sap
5	Mun	18	EastCoastGulf
6	Ping	19	Phetchaburi
7	Wang	20	Prachupkiri-Khan Coast
8	Yom	21	East coast basin
9	Nan	22	Ta Pi
10	ChaoPhraya	23	Thale-Sap Songkhla
11	Sakae Krang	24	Pattani
12	Pa Sak	25	West Coast
13	Tha Chin		

1.2. Floods and Droughts

Due to its physical features and Monsoon occurrences, Thailand has experienced both floods and droughts every year. Thai people have learned to adapt and live with this cycle for more than hundreds of years. Bangkok, used to be known as “the Venice of the East”, was once filled with canals which served as the main commuting method, as well as natural flood ways in the rainy season (Penchom, 2012). However as the city began to be influenced by the modern western style, urbanization has expanded and the traditional way of life has rapidly changed. Canals were replaced with concrete roads; industrial factories were built on plains near river basins. Unplanned housing estates blocked flood plains (Poapongsakorn, and Meethom, 2012). Around 20,000 *rai* (approximately 3,400 ha), once a low-lying swamp serving as an effective catchment area in the eastern side of Bangkok, was turned into the main Bangkok International Airport, *Suvarnabhumi* Airport (OK Nation, 2011a). Gradually, floods become more severe. The Great Flood in 2011 stood as one of the most recent catastrophic example.

Meanwhile during the dry seasons, despite the abundance of water resources, the problem of water supply is pronounced in rural areas and affects the agricultural sector. As part of economic development, sustainable agricultural methods have been transformed to a cash crop economy. In this regard, Thai government has then implemented more centralized control over water resources in order to feed agricultural and industrial demand for water consumption. Consequently, irrigation

areas have expanded and dams receive more and more justification as a necessary step towards national development. Constructing dams and reservoirs have been an important part of the Government's National Economic and Social Development Plan since 1961 (Mooksong, 2013).

However, large dams can only partly solve minor problems and in most cases generate negative outcomes. The growing number of dams may actually aggravate environmental and climate change problems. In 2010, the northeastern region of Thailand experienced "the worst drought in twenty years", particularly in the Mekong sub-region where the water level decreased to the lowest point in the past 50 years. Some critics claimed that this was caused by the impact of an operation of dams in China located in the upper Mekong region (Marks, 2011). This claim was later supported by recent evidence from the Thai Department of Water Resources, Ministry of Natural Resources and Environment. The data showed that the Mekong's water level unnaturally fluctuated from 4 metres to over 8 metres within a few days in December 2013 severely impacting the local people living along the river. This situation was related to the fact that China had released a large amount of water preparing for a dam reconstruct in February 2014 (TCI, 2014).

1.3. Water Management and the 2011 Great Flood

In Thailand, dams help retain water in the wet season and provide water supply during droughts (RID, n.d.). The country is ranked within the top ten for the best capacity to provide irrigation. Later dams were also built for other purposes such as providing water for industries consumption, for hydropower as well as flood prevention. Currently, there are 682 dams across the region in which 33 are categorized as large dams, each having more than 100 m³ storage capacity; 463 dams as medium capacity account for 5,325 m³ storage in total; and 4,262 are as small reservoirs (RID, 2010; Chanjula, 2009). Two main agencies, the Royal Irrigation Department and the Electricity Generating Authority of Thailand (EGAT), are responsible for dam management.

Although the presence of large dams in Thailand has yielded positive results especially in providing a modern and systematic way of managing an abundance of water resources, there is always a possibility for mismanagement which could cause equal or more harm than a natural disaster. The Great flood in 2011, "the worst flood in modern Thai history" (Poapongsakorn, and Meethom, 2012), demonstrates this claim. Although the government portrayed that the flood was caused by massive rainfall and various tropical storms, many experts in the environmental field believed nature was a minor attributable factor of the damage. Research by Poapongsakorn, and Meethom (2012) indicated that mismanagement due to political influence and competition in irrigation and water management largely accounted for this catastrophe. Some areas where influential politicians took control experienced less damage at a cost of the other's area massive devastation. Also, an untimely discharge of massive water flow from three to four major dams to the already flooded area, making up to 12,000 million m³ of water, inundated the central plain. This implied the lack of cooperation between the different authorities in charge (OK Nation, 2011b). Additionally, an unclear line of government agencies managing water resources led to the confusion and overlap of command as there are 30 agencies spanning 9 ministries in charge of water resource development (Department of Water Resources, 2006). All the previously mentioned factors result in the critique that apart from unavoidable environmental causes, mishandling of dams and a lack of cooperation between the authorities exacerbated the 2011 flood. Consequently, a large number of people were displaced.

However, the government has never admitted its mismanagement nor launched any investigation to determine the actual factors that led to the flood. Instead, it has proposed and outlined a 3,5 billion-baht (USD 11 billion) mega plan, to which many

experts see as a short-term and ineffective solution, in response to the recent flood disaster. Constructing more large dams are once again on the government's agenda. The scheme will mostly affect many local communities in the Northern region. Even though Thailand experienced a number of social problems as a result of building dams, the possible negative outcomes have not been seriously considered. Significantly, at most steps of water management, the people, especially those in the rural areas without politician support, have no voice in a decision-making process. Unfortunately these people are often most affected by the government's centralized water management policy.

2. DAMS: THE LOST VOICE OF THE DISPLACED PEOPLE

According to World Commission on Dams (WCD, 2000: 1-2), "conflicts over dams are more than conflicts over water. They are conflicts over human development and life itself." Economically, dams undeniably profit people. On the other hand, it also reflects the idea that the State owns this national resource as the State is the one that has the duty to provide water to the population. This has an indirect impact on the rights of local communities in that the State can claim control over people's assets on behalf of the majority. Forced displacement and relocation as well as expropriation in the case of constructing dams emerge as a justification for the common good.

Even though there are many other methods for managing water resources, large dam construction often stands out as the most cost-effective mechanism in the Royal Irrigation Department (RID)'s agenda. This is due to the fact that the National Development Plans are based on expanding the irrigation area with the fear of water shortage for extra farming in the dry seasons (RID, 2010). As a result, dams were widely constructed with no clear assessment on environmental outcomes, let alone the socio-cultural consequences. After the publicizing of the Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (A.D. 1992), it is now harder to obtain national approval and begin the process of dam construction. This law requires an Environmental Impact Assessment (EIA) which is a formal process to measure and predict environmental consequences. This assessment is also a guideline to minimize any negative outcomes as well as determines whether a project will be approved (Environmental Impact Bureau, n.d.). At the same time, a growing civil society and more open political environment is providing a platform to discuss community rights, which were first articulated in the 1997 Constitution. Any development project that will immensely affect local communities needs public consultation. In other words, infrastructure programs built before that period mostly ignored public opinion. Forced relocation and unfair compensation was widely practiced. Many cases below will illustrate why environmental assessment and public opinion are crucial before constructing any large dam project in the future.

2.1. Dams and the voice beneath the water

More than sixty years since the first large dam was constructed, dams have often been portrayed as advantageous for national development. However for the local people whose lives are immensely attached to land, water and natural resources, forced relocation is greater than the lost of financial assets, such as their traditions, culture and communities. Unfortunately, at the time when there were many large dam projects, local communities affected by forced displacement had no political power to protest. The stories of their grievance were kept untold and resemble the folktale worth no attention. In many cases, the government had no clear strategy on helping the locals with resettlement. No official record was found and government agencies were not able to provide evidence of the numbers of people affected by large dams' construction (Trekkingthai, 2004). As Nehru, the first Prime Minister of

India, once said to justify the Hirakud Dam project that “[i]f you are to suffer, you should suffer in the interest of the country” (Khan, 2012: 197). In the name of development, migration is merely the byproduct of constructing infrastructure for the common good. Nevertheless, for the affected people, migration created by development projects should not only be viewed as a sacrifice for the common good. Rather, it should point to the lack of strategy and suppression of a community’s rights by the state. This paper will attempt to explain those stories, in the least to bring them to light and remind the next generation of what society has traded off for economic gains.

Vajiralongkorn Dam or *Khao Laem Dam*, is a concrete rock-filled dam located in the western region. The reservoir covers the area of 3,720 square kilometres with a maximum storage capacity of 8,860 million m³ (EGAT, 2013). Apart from generating hydropower, *Khao Laem Dam* is also known as a tourist destination. Due to the severe drought in 2010, tourists were surprised to see debris of temples and building emerged from under water. The Tourism Authority of Thailand (TAT) then proclaimed it as one of the sites “Unseen in Thailand.” However, the real ‘unseen’ story was retold by *Weerawat Theeraprasat*, Chairman of the Foundation for Ecological Recovery (TERRA) and the former Superintendent of Wildlife Sanctuary in the region. He described that the dam and catchment area had submerged the whole district of *Sangkha Buri* and many historic areas for twenty-seven years. Local people were relocated and settled in low quality agricultural land that yielded little productivities. Some were moved and packed in a housing estate. Meanwhile, the World Bank, the main financial supporter of the dam construction, claimed its success as the people’s standard of living was improved and they earned more income (Trekkingthai, 2004).

Conversely, Mr. *Theeraprasat* strongly disagreed since the World Bank Report had excluded twenty per cent of the relocated persons as well as a large number of undocumented local communities in the area (WCD, 2000a: 105; Trekkingthai, 2004). The situation also worsened for the ethnic minority groups, the *Mons* and the *Karens*, who were community locals but failed to acquire the citizenship. As a result, they received no compensation and were forced out of the area. Also, cited in *Watershed Magazine* in 1998, a displaced person said “it was true he gained more money. Because with no money, he had no life here. Meanwhile, in the past, he had no money but he had every thing he needed” (Trekkingthai, 2004). These situations are familiar for displaced people in other large dams such as *Bhumipol Dam*, *Sirikit Dam*, *Sirindhorn Dam*, *Sri Nakarin Dam*, along with many others that have been built to the detriment of the communities. This was due to the fact that at that time, about sixty years ago, the locals did not dared to resist the State’s authority. Also, the local and indigenous people had no political channel to voice a complaint and no concept of community rights existed.

2.2. Rasi Salai Dam

This irrigation dam is located in the Northeastern region on the *Mun River*. It is 17 metres in height with a large reservoir area. The construction was completed in 1994 and cost around USD 26.7 million, nearly six times of its original budget plan (EJOLT, 2014). No environmental impact assessment or public hearing was arranged. At first, there was no resistance from the local communities since the authorities had assured that it would be a small reservoir and would rarely affect the local. However in reality, it turned to be a large concrete dam. When the dam was completed, water flooded into local communities’ agricultural area and inundated the seasonal flooded forests.² Apart from destroying the natural resources that were the sources of income

2. Seasonal flooded forests, found near the *Mun River*’s floodplans, are very abundant in natural resources such as aquatic animal, vegetables and medicinal herbs. These forests are the vital sources of food and the well being of the local people.

for the local communities the flood caused more than 3,000 families to lose their home and farmlands. The dam has generated a wide range of environmental disasters such as an expansion of saline water, meaning that the water in the reservoir cannot be used for irrigation due to the fact that the rock underneath is actually salt deposits. This leads to a problem of soil salinity in a wider area (EJOLT, 2014; SEARIN, 2000). Furthermore, the specific area limited for the reservoir was identified five years later after the construction, creating many overlapped territorial claims (Chusakun, n.d.). More than 141 villages were affected. It is rightly claimed that “far more productive land has been lost to the reservoir than has ever been irrigated by water from the dam” (Blake, 2013).

More than twenty years, the people’s life has been degraded in many aspects. This includes poverty, community conflict, loss of traditional lifestyles and broken families to name a few. Younger generations have had to move away from their homes to find a job in an urban area and remit money to their elderly parents at home (Silarak, 2010). Problems of compensation, property rights and unfair treatment by the State have ignited the protests since the *Rasi Salai* dam was completed. In some case, their lost properties have never been identified, meaning that the affected people would receive no compensation (Prachathai, 2013). Some protesters refused to migrate and willingly stayed near their inundated lands. One of their leaders drowned into the water. Self-relocations were established near the dam site in 1999 as people refused to move out (SEARIN, 2000). In 2000, there was a big demonstration at the *Rasi Salai* dam requesting for the opening of the dam’s gates. As a result, the protest leader was arrested and sentenced to prison. More problems followed. In February 2013, villagers gathered near the dam requesting answers to the same issues that had persisted for the past twenty years. Once again their voices were ignored and no adequate solution was reached. In this case, it can be seen that devastation of the environment at the hand of the State has driven the affected people out of their land. Labour migration seems to be one of the methods to cope with the situation at home. Even though migration has never been the main concern in the case, it is worth noting that remittance generated by the young workers is used for both feeding the family and supporting the ongoing protests.

2.3. Pak Mun Dam: the voice to be heard

The *Pak Mun* dam is located on the *Mun* River in *Ubon Ratchathani* province, North-eastern region. The dam is 5.5 kilometre (km) away from Mekong and *Mun* confluence. It is approximately 17 metres in height and 300 metres in length with a capacity of 225 million m³. The construction cost around 6.5 billion THB, (USD 260 million) funded by the State and the World Bank. Under the responsible of the Electricity Generating Authority of Thailand (EGAT), the initial purpose of the dam was to serve as a run-of-the-river hydropower plant with other possible advantages such as irrigation and fisheries. However, in reality, these outcomes are yet to be realized.

The *Pak Mun* case stands out as one of the notorious conflicts between the State and the local people over the unfair treatment of the displaced communities and newly created environmental migrants. The resulting impacts included the destruction of the entire community in regards to its socio-cultural identity. This explains why the case is among the longest running protests in the world. The study from the WCD also confirms that the dam brought utter destruction to the community’s livelihoods and the dam “should not have been built” at the first place (Jenkins, McGahey and Mills, 2008). The consequences of *Pak Mun* Dam point out that dam-induced environmental migration is also closely related to social and cultural breakdowns in local communities.

Prior to the construction of the dam, people along the *Mun* River considered themselves fishermen (Jenkins, McGahey and Mills, 2008). Even for the women, fishing was the main mode of nurturing their family and source of income. Their

harmonious relationship with the river was seen through a large amount of fishing instruments based on indigenous knowledge to which women learned how to use and made them. Interestingly, all the tools they used for fishing were well adapted to the nature of each kind of fish and the flow of the river. Also, religious practices and ceremonies were arranged on the *Mun's* Rapids each year. For the people along the *Mun*, the river is not just a source of income, but also a sacred place (Living River Siam Association, 2012). Any harm to the River *Mun* means harm to their spirit. In other words, the ecology of the *Mun* River has been well preserved by the local tradition and practices.

The *Pak Mun* dam was built without the villagers' participation in the decision-making process. Even though their struggle had started early before an approval of the project in the late 1980s, their voice was not heard. Despite little knowledge of the dam, the local based their objection on a deep sense of environmental awareness in that the dam's gate would bar the free flow of the river as well as the migration of fishes from the Mekong River. From village to village, their struggle against the *Pak Mun* dam intensified from the environmental issues which were closely related to their livelihood. Unfortunately, their hope of protecting the river flow was not taken into account by the government and the local authorities. The project continued and started its operation in 1994.

Map 3. Pak Mun Dam, Ubon Ratchathani province



Source: <http://www.Livingriversiam.Org/3river-thai/pm.Htm>

As a result, migration occurred in two patterns. The first was in the form of dam-induced migration where 1,700 households were displaced. This Figure was drastically different from the initial estimation of 241 households (WCD, 2000b: V). The destination prepared by EGAT was 40 km away from the former village and houses were too small to accommodate traditional extended families. This resulted in some self-resettlement in either a reserved forest or public property as the compensation from the State was inefficient for buying land or building a new home (Dash, 2009: 24-25). The second form of migration can be considered 'environmental migration' as more than 6,200 households were largely affected due to a decline in fish diversity.

Because the dam blocked fish migration, it was estimated that the upstream fishing catching experienced around a 60 to 80 per cent decline (WCD, 2000b). Many of the fishermen had to move to other sectors as migrant laborers in urban areas to feed their families (Living River Siam Association, 2012; Jenkins, McGauhey and Mills, 2008). Even though EGAT spent nearly 200 per cent above its budget on compensation and relocation cost, protests against the operation of the dam have continued for more than 20 years. Even so the devastating impacts on the ecology of the River *Mun* and lost livelihoods could hardly be compensated by cash.

Since the first protests of the *Pak Mun* dam began in 1989, the lives of affected villagers has all been affected in almost every aspect. Unfair treatment, unreasonable compensation and lost occupations have pushed members of the communities, especially the younger generation to seek better opportunities in big cities. In other words, strong social ties within the local communities have been destroyed by economic stress. Nevertheless, remittances sent home by urban workers help sustain the struggle of the local protesters (Promun, 2014). The various benefits from the *Pak Mun* dam have ruined social unity between the authorities, headmen of villages and the grassroot organizations; as those who opposed the dam were often mistreated. Discrimination against the opposers by excluding them from the decision-making process “created tremendous bitterness and negative perception” (WCD, 2000b: VIII-IX). Furthermore, decreased interaction with the river means less continuity

Picture 1. Life at the confluence of the River Mun



Source: Living River Siam Association

Picture 2. Life behind the Pak Mun Dam



Picture 3. Protest against the Pak Mun Dam



Source: TCIJ, 2000

of traditional and cultural practices as the indigenous wisdom and knowledge are inextricably linked to water, fish and the *Mun* (Jenkins, McGauhey and Mills, 2008). Additionally, the previous role of the women who carried out traditional ceremonies and religious practices has been changed dramatically. The majority of them have become breadwinners and many more have turned into political activists (Living River Siam Association, 2012).

Importantly, it is worth noting that the fight over *Pak Mun* dam is the first in modern Thai history in which the struggle against the State's authorities strengthened a grassroots movement; the Assembly of the Poor³ (AOP) eventually brought the case to national politics and international attention. More than 20 years of the peoples' appeal for fair compensation and fight for justice over environmental concerns, the River *Mun*'s ecology has never been off their agenda. Acknowledging the negative outcomes of the state's project and demolishing the *Pak Mun* dam may revive the life of the River *Mun*. However, the demolition of the dam could lead to the failure of the State's control over energy supply involving politicians and some influential companies (Promun, 2014). In this regard, the government and EGAT offered some leaders of the AOP an opportunity to help disintegrate the *Pak Mun* protesters. Likewise, whenever there was a protest over the opening of dam's gate, there would be an anti-protest movement afterwards.⁴ In August 2013, the EGAT allowed the eight gates of the dam to be opened until the government establishes a commission to ease and resolve the problem (Isranews Agency, 2013). However just a few months later, the gate was closed again. For 25 years, the government has accomplished little to meet its obligations to the community. In parallel, the people will continue fighting for the free flow of the *Mun* River with the hope to return to their sustainable and cultural way of life, or at least a fair compensation (Promun, 2014). Therefore, migration for them is seen as mostly temporary as a way to adapt to economic constraints.

The results of the *Pak Mun* provides evidence against further dam construction, but also is a demonstration of how local awareness can contribute to a fight for livelihood. In such cases, dams are not merely related to displacement or relocation, but also create thousands of environmental migrants. Still it seems to be an unfortunate societal norm that the minority must sacrifice for the good of the majority.

3. LESSONS NEVER LEARNED: THE 3.5 BILLION BAHT PROJECT AND THE VOICE FROM THE AFFECTED AREAS

CAN YOU HEAR US? ... What if we take away your home and replace it with dams, how would you feel? You live in a city. You have a higher education than any of us here but it is a pity ... you have no single knowledge of the relationship between men, water and forests. You want water but you do not take care of its origin. You prevent floods but you let us drown. This forest... this land... is our home. Our ancestors have taken good care of it and we continue in the same path. We want no dams here... Do you hear us? We want no dams!⁵

(The voice of *Pakayor* children in *Mae Kan* district, Chiang Mai, 2014)

3. AOP emerged in 1995 as a rural based and non-governmental organization with the main purpose to struggle over the rights to resources of land, water, and forests. See more in Chris Baker, 2003, "Thailand's Assembly of the Poor: background, drama, reaction", *South East Asia Research* 8(1): 5-29.

4. Such activities tend to be seen as a "politically arranged anti-movement" against the AOP's protest. See more in: Bangkokbiznews, "Mob Against the AOP Pak Mun", Bangkokbiznews <<http://www.bangkokbiznews.com/home/detail/politics/politics/20110223/378530/news.html>> (23 February 2013) consulted on 30 April 2014.

5. The voice from Mae Kan village to express their concern over the dam construction project in the area (via Spring Report, the Thai TV programme)

Despite the government's rhetoric of constructing dams for irrigation and hydro-power, preventing floods and droughts are also used to justify their further construction. The Great flood in 2011 marked another watershed in which the Thai government passed the mega-project of water and floods management involving constructing more large dams. However, unlike in the past, local communities, environmentalists, scholars, human rights defenders together with a large number of NGOs are rising against the project. They publicly questioned problems surrounding previous dams as well as the possible negative consequences for the local communities.

3.1. The water management project plan

The Government's 3.5 billion-baht (around USD 11 billion) water management project was initiated in response to the government's incapability to manage the 2011 flood. According to Office of the National Policy and Management of Water and Flood (NPMWF), a new agency responsible for water management, the project was divided into nine modules that will need to be linked as one system. Merely in the Northern region, the projects aim to build up to sixteen dams and reservoirs with the purpose being to prevent the central *Chao Phraya* plain from floods. In this regard, it seems that the government did not acknowledge its mismanagement of the 2011 flood but instead pointed to the failure of national water management system. The controversy lies with the very high estimation of Government budget over the project, the effectiveness of the plan and the Design-build approach (D-B approach). The shortened construction plan means that all the public hearings, environmental impact assessments, or even the procedure of providing compensation will be the responsibility of the private construction companies who succeed in a bid.

These will all directly impact the local people as companies will seek the highest profit, often paying little in compensation. Additionally, public participation has not been part of the decision-making process. The locals have little access to the details of a project's as no information is publicly provided. However in June 2013, the Administrative Court issued an order for the government to conduct public hearings and environmental impact assessments before signing any contract with the construction companies. All projects were to be suspended until the hearing and assessments were completed. However, such tasks were done in an urgent manner while the majority of the affected people were again left out. Furthermore, the hearing in each province was propaganda in nature. Local people were informed by the 15-20 minutes video presentation of the overall project in which there were only up to 2 minutes concerning each possible affected community. Meanwhile, only 800-1,200 locals were able to participate due to the Government limiting the numbers of participants (Thaipublica, 2014). This mega project has been a controversial issue in Thai society, especially within the ethnic minorities in the Northern region, where their homeland and community forest preserve indicated in the mega plan will be largely replaced by dams.

3.2. The voice from the possible affected areas

Although no decision has been made as to which area will be chosen for dam construction, the local communities are now living in fear, particularly those of ethnic groups who might be displaced from their homeland. Local NGOs and many other civil societies are now acting as the main engine to provide the people with information of dam and its impacts. Two cases which have encountered strong resistance will be presented.

Mae Chaem Dam is one of the sixteen dam projects planned in the *Mae Chaem* district, Chiang Mai. The planned reservoir will have the capacity of 134.7 m³ and will cover around 12,628 *rai*. According to the cabinet resolution in 1985, the zone and use of the area was prohibited in any case since it was the abundant forested watershed. However, in 1989, *Mae Chaem* was targeted as the site for a multipurpose dam and

the resolution seemed to be interpreted in a flexible manner ever since. An environmental impact assessment was conducted in 1989 but it was kept unpublished. The project has then revived again in 2010 after the Great flood as a solution to expand the irrigation area and prevent a further overflow of water.

According to the main local NGO in *Mae Chaem*, the *Orphy Institute* (2013a), it is estimated that at least six villages will be affected by the presence of the dam. Among these at least three villages will be uprooted and many more local communities will lose their fertile land. Also, building dams and reservoirs in these abundant forests will mean a devastation of the environment in the long run as *Mae Chaem* is the forested watershed and rich in natural resources. There will be an impact on the supply of water if the forests are destroyed. Food security will be immensely affected. As the locals depend largely on the forest to make a living, this means that their livelihood will be abruptly altered. This will have the most pronounced effects on the local people, specifically the *Karen* ethnic groups. Even worse, despite approving the project to build dams, the government is yet to propose a future plan for the affected people in terms of suitable relocations. Also, compensation is almost impossible to request because the people have no official land tenure documents; meaning the problem of forced displacement and environmental migration will become unavoidable.

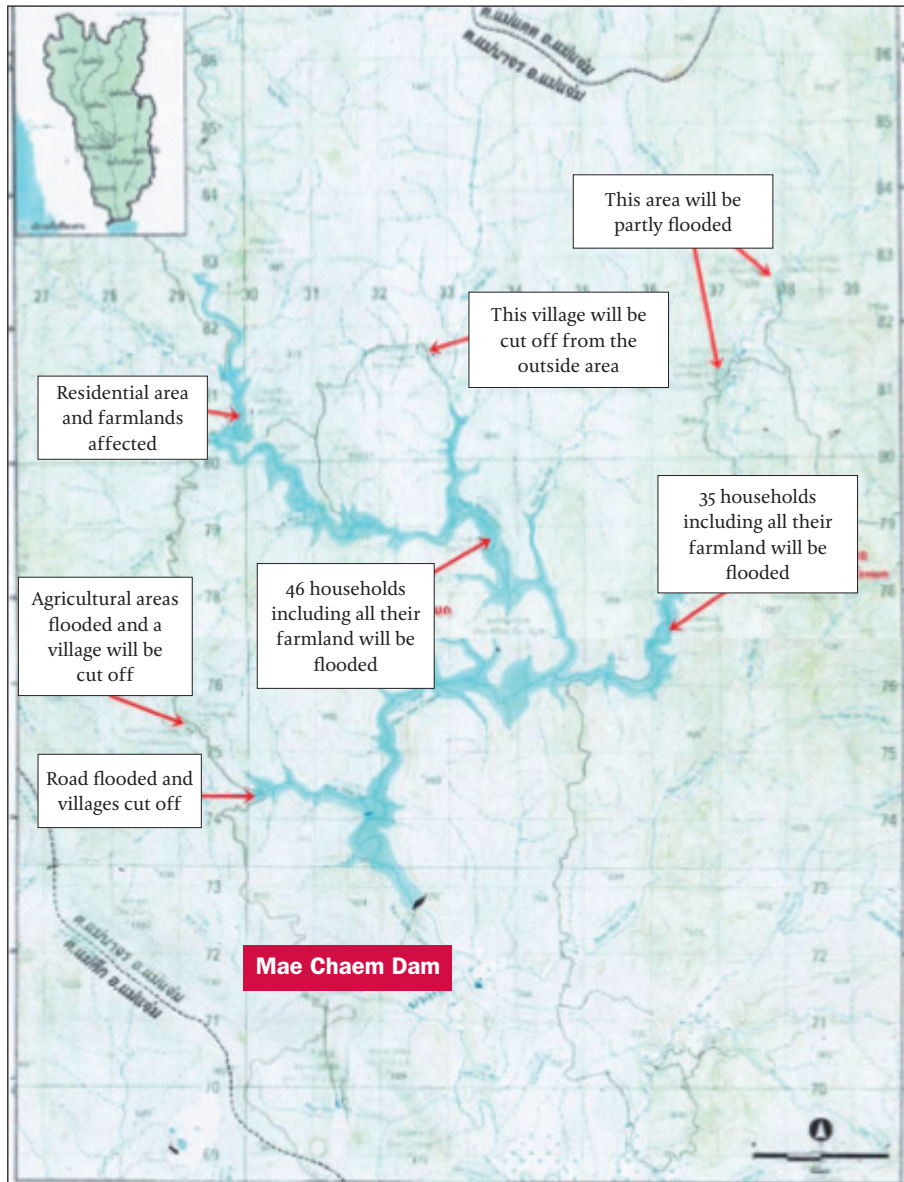
For the *Karen* people, the forest and river are their life and spirit. Their home is not limited merely to the residential area but the entire forestland. Their deep sense of interconnection with the environment is part of their traditional way of life and spiritual beliefs inherited from generation to generation. Folktales and community rules are all used to instruct the younger generation to respect and feel gratitude to their motherland. This emotional attachment explains why the project ignites an outcry among the local communities.

From fear of losing their homeland, the local civil society becomes stronger in the possible affected areas. Seminars and talks have been arranged to equip the local communities with details of the project and possible methods to voice their opinion as well as suggest other solutions instead of constructing dam in the *Mae Chaem* district. Moreover, other civil society groups who have been previously affected by the dam join the protest and share their experiences. With the assistance of many local NGOs, the press and university students, the *Karen* have been able to voice their concern to the public through online resources and social media such as on TV programmes, facebook pages and youtube. Disappointment and confusion are reflected in the local people's expressions. They mostly ask what they have done to harm the country and why the government needs to take away their home for this what they perceive to be an unnecessary and large dam. By attending talks and community meetings, the *Mae Chaem* people have learned from many experts that the dam will be less likely to prevent the flood. In fact, the lands are overflowed from time to time and there is little concern. Either way, it is a natural cycle and they have learnt to adapt (Orphy, 2013b). Most of their concerns reflect their fear and injustice they feel on that part of the government. For more than 50 years they have been waiting for the state authority to grant them the land tenure as promised. However, the initiation of the new dam project will mark the beginning of a fight for their land.

"We were born here, we live here and we will die here. We will fight here for our land" (Orphy, 2013b). This will loudly echo from village to village of the *Mae Chaem* district. They only hope that these concerns will reach the government in time.

Kaeng Sua Ten Dam now known as *Yom Bon* and *Yom Lang*, this dam is also part of the 3.5 billion baht project. The planned location is on *Yom River*, *Phrae* Province, in the Northern region. The EGAT planned to construct the dam in response to a national strategy to develop the *Ping-Wang-Yom-Nan* basin in 1991. However, more

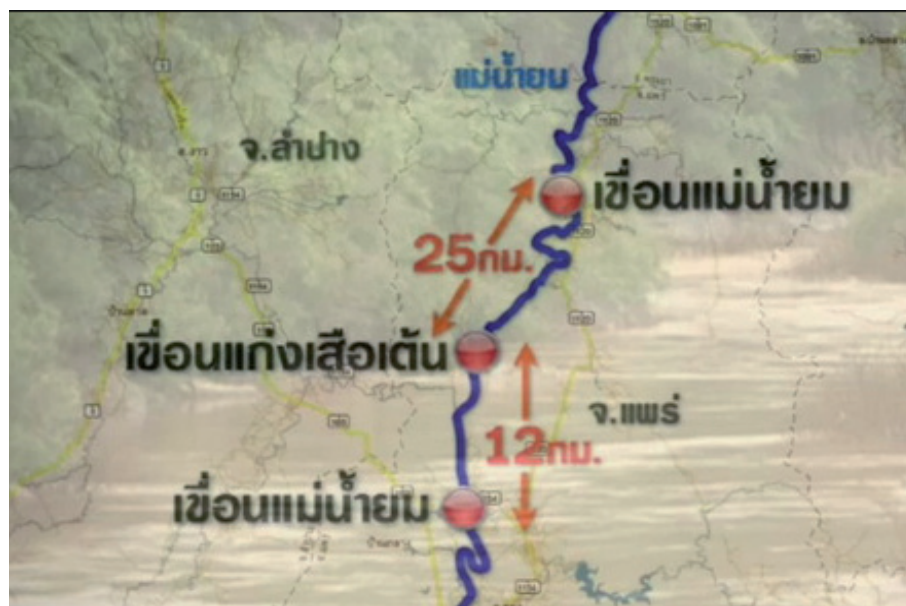
Map 4. The areas impacted by Mae Chaem Dam



Source: Orphy Institute, 2013, adapted by Author

than twenty years ago, there have been strong resistances from the local communities, civil society and environmental groups. The project then has to be postponed until the government revises it again as part of the mega-plan to prevent floods and droughts. This time it comes with the new name of *Yom Bon* and *Yom Lang* dams with a smaller reservoir capacity but with the same possible devastation to the forests and the lives of the locals (Sa-leab Love the Forest Group, 2013).

Map 5. Yom Bon and Yom Lang Dams viewed as the successor projects of Kaeng Sua Ten Dam



Source: ThaiPBS TV channel

Picture 4. Ordain the Forest and Bless the River Yom



Source: <http://www.vvoicetv.com/knowledge-id866.html>, 2012

The dam and reservoir will cover the area of four villages accounting for more than 3,500 families spanning the two provinces of *Phrae* and *Phayao*. The concerns for the local are attributed to the government's failure to solve the problem of displaced people in many other areas, especially after the large dams construction in *Pak Mun* and *Rasi Salai* district (Living River Siam Association, 2013). Up to this point, they have also learned that protesting alone might not be enough since the people who support the construction of dams will politically coerce the locals to accept the project one way or another. The communities and NGOs have been working strategically to use the communities' wisdom to bring to determine how best to protect the forests. Religious ceremonies as well as local traditions are performed as a symbol of the interrelationship between human and the forests. "Ordain the Forest and Bless the River Yom" is one of the examples the villagers have performed for twenty years (Prachathai, 2011). It contains the meaning that the forest and river are now part of their religious life to which they have to pay respect. As a result of these important ceremonies, the issue of dams attracts a wide range of public attention. Additionally, the local civil society has become united with the same purpose to protect the forest and their traditional way of living.

4. CONCLUSION

Water management in Thailand has been developed to stimulate economic growth. Dams support irrigation and provide hydropower as well as a solution to floods and droughts. As seen from the presented case studies, constructing large-scale dams have many uncontrollable and negative consequences, and have not been identified as an effective long-term water management system. The local communities bare the burden, especially in terms of socio-cultural losses and environmental disasters. Displacement and environmental migration are inevitable results once sustainable livelihoods are destroyed. Faced with economic stressors, socio-cultural devastation and conflicts in the communities, demonstrations have taken place in an attempt to verbalize these difficulties.

However for more than twenty years these attempts to be heard have been futile. This is evident in that the government still presents large dams as a solution to water management in the country. The national mega-project for instance lists more sixteen dams and reservoirs to cope with floods and droughts. However, unlike in the past, the political context in Thailand has changed and local people are now able to employ political channels to express their disagreement. Civil societies, academic scholars, specialists in water management and NGOs also participate and play an important role in the movement against building dams. The centralization of water management should shift to the hand of local communities or in the least include them in the management process. It is hoped that these community concerns will signal to the government that a large-scale dam is not the answer for effective water management in Thailand. ♦

BIBLIOGRAPHY

- Baker, C. 2003. "Thailand's Assembly of the Poor: background, drama, reaction". *South East Asia Research* 8(1): 5-29.
 - Dash, S.P. 2009. "Displacement and Resettlement Management in Thailand". *Economic and Political Weekly*. 44(47): 23-26.
 - Department of Water Resources, Ministry of Natural Resources and Environment, Thailand. 2006. *National Water Development Report: Thailand*. Bangkok.
 - Electricity Generating Authority of Thailand (EGAT). 2013. "Vajiralongkorn dam". *EGAT* <http://www.egat.co.th/en/index.php?option=com_content&view=article&id=61&Itemid=117> consulted 29 April 2014.
 - Environmental Justice Atlas (EJOLT). 2014. "Rasi Salai Dam, Thailand". *EJOLT* <<http://ejatlas.org/conflict/rasi-salai-dam>> consulted 7 April 2014.
 - Blake, D. 2013. "Thai Dam-Affected Villagers Demand Fair Compensation". *International Rivers* <<http://www.internationalrivers.org/resources/thai-dam-affected-villagers-demand-fair-compensation-8012>> consulted 7 April 2014.
 - Jenkins, K., McGauhey, L. and Mills, M. 2008. *Voices from the Margin: Economic, Social and Cultural Rights in Northeast Thailand Pak Mun Dam*. ESCR Mobilization Project
 - Khan, T.R. 2012. "Dam' the Irony for The Greater Common Good: A Critical Cultural Analysis of the Narmada Dam Debate". *International Journal of Communication* 6: 194-213.
 - Marks, D. 2011. "Climate Change and Thailand: Impact and Response". *Contemporary Southeast Asia* 33(2): 229-258.
 - Poapongsakorn, N. and Meethom, P. 2012. "Impact of the 2011 Floods, and Flood Management in Thailand". In Sawada, Y. and Oum, S. (eds.). *Economic and Welfare Impacts of Disasters in East Asia and Policy Responses*. ERIA Research Project Report 2011-8, Jakarta: ERIA: 247-310.
 - Shivakoti, G.P. n.d. "Innovative Research Issues Addressing Policies, Institutions and Governance Challenges of Irrigation in Twenty-First Century". <<http://www.gchera.com/wp-content/uploads/2011/09/Ganesh-P.-Shivakoti-Innovative-research-issues-addressing-policies-institutions-and-governance-challenges-of-irrigation-in-twenty-first-century.ppt>> consulted 29 November 2014.
 - Swedish Committee for Water and Dam Issues (SKVD). n.d. *Future Dams: Recommendations to Swedish Stakeholders on Implementing "Dams and Development- A New Framework for Decision Making"*. Stockholm: SIWI.
 - Water Environment Partnership in Asia (WEPA). n.d. "State of water environmental issues: Thailand". *WEPA* <<http://www.wepa-db.net/policies/state/thailand/thailand.htm>> consulted 29 April 2014.
 - Water Resources System Research Unit, Faculty of Engineering, Chulalongkorn University. 2013. *The Impact of Climate Change on Irrigation Systems and Adaptation Measures (Dam Operation Analysis)*. Bangkok: CU WRSRU.
 - World Commission on Dams. 2000a. *Dams and Development: A New Framework for Decision-Making*. London: Earthscan Publications Ltd.
 - World Commission on Dams. September 2000b. "The WCD Case Study: The Pak Mun Dam in Mekong River Basin, Thailand". *Final Report: A Working Paper Prepared for the World Commission on Dams*.
- THAI SOURCES**
- Chanjula, N. 2009. "Dam: Development and Fishery Problem in Thailand". *Journal of Anthropology and Sociology* 5(2): 25-36.
 - Chusakun, S. n.d. "Remark on Rasi Salai". *Living River Siam Association* <http://www.livingriversiam.org/3river-thai/rs/rsd_a2d.htm> consulted 29 April 2014.
 - Environmental Impact Evaluation Bureau, "Thailand's Environmental Impact Evaluation System". *Environmental Impact Evaluation Bureau* <http://www.onep.go.th/eia/index.php?option=com_content&view=article&id=30&Itemid=127> consulted 29 November 2014.
 - Isranews Agency. 2013. "EGAT Opens Pak Mun Dam's Gate". *Isranews Agency* <<http://www.isranews.org/community/comm-news/comm-economics-community/item/22963>> consulted 29 April 2014.
 - Living River Siam Association. 2012. *Women of the Mun River: Life and Struggle*. Ubon Ratchathani: Living River Siam Association.
 - Living River Siam Association. 2013. *Twelfth Reasons for No Kaeng Sua Ten Dam*. Chiang Mai: Living River Siam Association.
 - Prachathai. 2011. "Ordain the Forest and Bless the River Yom". Prachathai <<http://prachatai.com/journal/2011/02/33082>> consulted 9 May 2014.
 - Maiklad, P. 2014. "Solution for Thailand's Water Management". *Thaipublica* <<http://thaipublica.org/2014/03/water-management-solutions/>> consulted 27 April 2014.
 - Mooksong, C. 2013. "Preparing the National Economic and Social Development Plan". *King Prajadhipok's Institute Database* <<http://www.kpi.ac.th/wiki/index.php>> consulted 3 May 2014.
 - Penchom, C. 2012. "Eastern Venice: Thai Style in the Floating City". *TCDC Resource Center* <<http://www.tcdc.or.th/src/i6612>> consulted 3 May 2014.
 - Prachathai. 2013. "Rasi Salai Network Preparing for the Next Protest". *Prachathai* <<http://prachatai.com/journal/2013/01/44911>> consulted 3 May 2014.
 - OK Nation. 2011a. "The King and Science on Sustainability". *OK Nation* <<http://www.oknation.net/blog/print.php?id=772258>> consulted 3 May 2014.
 - OK Nation. 2011b. "Water discharge: Investigation needed". *OK Nation* <<http://www.oknation.net/blog/print.php?id=760693>> consulted 3 May 2014.
 - Orphya Institute. 2013a. *Information on the Villages affected by Mae Chaem Dam*. Chiang Mai: Orphya Institute.

- Orphy Institute. 2013b. *Mae Chaem*. <<http://www.orphyia.org/index.php/th/>> consulted 3 March 2014.
- Royal Irrigation Department (RID), Thailand. 2012. *Strategic Plan for the Fiscal Year 2013-2016*.
- Royal Irrigation Department (RID), Thailand. 2010. *Executive Report: Project on Systematic Development of Irrigation in the Sub-basins (Scale 60 million rai)*.
- Royal Irrigation Department (RID), Thailand. n.d. <http://www.rid.go.th/2009/index.php?option=com_content&view=article&id=1:2009-04-12-06-29-43&catid=1:2009-04-12-05-18-55&Itemid=3> consulted 3 May 2014.
- Sa-leab Love the Forest Group. 2013. *Protect the Teak Forest and the Yom River*. Thailand: Living River Siam Association.
- Silarak, P. 2010. "Accepting a Rule But Not the Injustice". *Voice of the Isans*. <<http://mekongdev.wordpress.com/environment/>> consulted 3 May 2014.
- South East Asia Rivers Network (SEARIN). 2000. "Rasi Salai Dam: Truth, Conflict and Solution" <http://www.livingriversiam.org/3river-thai/rs/rsd_a3.htm> consulted 29 April 2014.
- Spring Report. 2014. "Mae Kan: problems needed to be jointly solved". *Spring News* <<http://program.springnewstv.tv/Springreport>> consulted 29 April 2014.
- Thailand Information Center for Civil Rights and Investigative Journalism (TCIJ). 2014. "Mekong River and China's dams: Severe Drought". *TCIJ* <<http://www.tcijthai.com/tcijthai/view.php?ids=3839>> consulted 3 May 2014.
- Thaipublica. 2014. "The 3.5 billion baht Project: failure and the public hearing on water management". *Thaipublica* <<http://thaipublica.org/2014/01/devolution-of-flood-management-project/>> consulted 6 April 2014.
- The Thailand Research Fund (TRF)-Climate Change. 2008. "Climate Change and the Impact on Thailand". TRF <<http://www.jgsee.kmutt.ac.th/TRF-climatechange/sangjun.htm>> consulted 3 May 2014.
- Trekkingthai. 2004. "Another Aspects of the City Under Water" <<http://www.trekkingthai.com/cgi-bin/webboard/print.pl?content=4112&board=trip>> consulted 3 May 2014.

INTERVIEW

- Interview and discussion with Mr Teerapong Pomun, Director of Living River Siam Association, conducted from 1 April - 6 May 2014 via Facebook's personal message. Official website: <http://www.livingriversiam.org/index-eng.html> OR Facebook page: <https://www.facebook.com/livingriver.siam?fref=ts>

Biographies

EDITORS

FRANÇOIS GEMENNE



François Gemenne teaches the course on “Environment and Migration” at Sciences Po’s Paris School of International Affairs (PSIA).

A specialist of environmental changes and migration at the universities of Liège (ULg) and Versailles (UVSQ), he has conducted field studies in the United States (New Orleans, Louisiana), Tuvalu, China, Central Asia, Mauritius, D.R. Congo and Japan, in the aftermath of the Fukushima disaster. He has been involved in different international research projects, and has consulted for the Asian Development Bank, the International Organization for Migration and the Cartier Foundation for Contemporary Art. He has published books and articles on environmental migration, adaptation and vulnerability. He is also the editor of the ‘Sustainable Development’ series at the Presses de Sciences Po, a leading French academic publisher. A political scientist by training, he was first educated at the University of Liège (Belgium) and holds a joint PhD from Sciences Po and the University of Liège, as well as a Master of Research in Political Science from the London School of Economics and a Master of Sciences in Environmental Studies from the University of Louvain.

DINA IONESCO



Dina Ionesco is the Institutional Focal Point on Migration, Environment and Climate Change at the International Organization for Migration (IOM) in Geneva (Switzerland) since 2011. She is in charge of coordinating and developing a broad portfolio of activities on this theme. Dina joined IOM in 2004 to work on migration and development, particularly on policies towards diasporas. She has developed many projects and

trainings as well as coordinated and written several IOM publications. Dina worked from 1998 to 2004 as an Administrator for the Organization for Economic Cooperation and Development (OECD) on issues of local development, entrepreneurship, employment and gender. She had previous professional activities in the non-governmental and academic world and as an independent consultant. Dina was trained in political science, international relations and economics at the Institut d’études politiques in Paris (France), at Sussex University and the London School of Economics (United Kingdom).

PAULINE BRÜCKER



Pauline Brücker is PhD student, working on forced migration in the Nile Region (Soudan, Egypt, Israel). Her current research

focuses on the evolution of asylum policies and especially refugee status determination processes (RSD), asylum diplomacy, State and UNHCR led management of refugees and social movements amongst refugees communities.

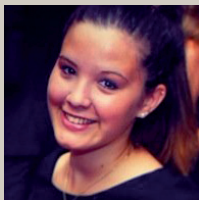
Graduated from a Research Master in Political Sociology, and a Master in International Public Law, both at Sciences Po Paris, she is specialized in the governance of migration. She has extensive experience and knowledge regarding internal and protracted displacement in the Middle East and Eastern Africa.

Her past researches focused on a critical approach to environmental migration as a socio-political object, through examination of normative protection gaps of environmentally displaced persons and the protection of human rights in times of natural disasters. She also pursued field researches on environmental migration related policy and legal challenges in Bangladesh.

JONNY BEIRNE

Having worked for several years at an international educational development NGO, Jonny Beirne joined the Human Rights and

Humanitarian Action Master's program at the Paris School of International Affairs (PSIA/Sciences Po) and specialized in Africa and Environment studies. Most recently, Jonny has been interning with Foundation for Human Rights Initiative in Uganda on a project exploring the opportunities and threats the emerging oil sector poses to human rights. He has also been developing a Somalia country brief for UNOCHA, through the Environmental Law Institute, focused on mainstreaming environmental concerns into humanitarian operations to help ensure a more effective humanitarian response. Jonny intends to continue focusing on the interplay between the environment and human rights protection, in particular with regards to land, water, and energy issues in the East and Horn of Africa.

MARION BITOUNE

Marion Bitoune is a student currently enrolled in a Master's program in environmental policy at the Paris School of International

Affairs (PSIA/SciencesPo). She completed her bachelor's degree at SciencesPo and studied for a year at the University of Wisconsin in Milwaukee, United States. Her interests are in climate negotiations and environmental diplomacy. She is currently interning at the Heinrich Boell Foundation, a green German think tank, in Washington D.C. where she hopes to gain knowledge for COP 21 in Paris. She works on different topics such as transatlantic cooperation on energy and climate and the German energy transition..

FRANCESCA BOCCHINI

Francesca Bocchini graduated with first-class honours in Political Science, International Relations and Human Rights at the

University of Padua in Italy and has recently completed the Human Rights and Humanitarian Action Master's program at the Paris School of International Affairs (PSIA/Sciences Po), where she specialised in Migration Studies and Middle East Studies. Her interest in human rights led her to focus on migrants and refugees as vulnerable subjects to discrimination and social exclusion. She volunteered for different organisations in Italy to facilitate integration process and did an internship at the UNHCR Dominican Republic collaborating on the statelessness program. She is currently interning at the European Public Law Organization Technical Cooperation Department and intends to continue working for refugees' and migrants' integration in Europe.

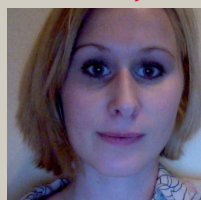
SOPHIE BROWN

Sophie Brown is currently enrolled in a Master in Environmental Policy at the Paris School of International Affairs (PSIA/Sciences Po),

with specializations in Global Risks (Climate Change) and International Energy. She holds a Bachelor's degree in Geography with First Class Honours from Durham University, UK, and won the British Society for Geomorphology's Dissertation Prize (2010) for her undergraduate dissertation. She is currently completing a six-month internship with the Post-Conflict and Disaster Management Branch of the United Nations Environment Programme in Geneva, where she has worked primarily on project development. As a student, Sophie has been engaged in a wide

range of activities, including fundraising for teaching projects for Burmese immigrants living in Thailand. Her main interests lie in the fields of climate change adaptation, displacement linked to environmental drivers, and the links between natural resources, conflict and peacebuilding.

REIDUN GJERSTAD



Reidun Gjerstad is a Master's student of Human Rights and Humanitarian Action at the Paris School of International Affairs (PSIA, Sciences Po Paris). She holds bachelor's degree in Liberal Arts from University College Maastricht (The Netherlands).

Her main interests include children's rights, women's rights and gender issues in international relations; with a special focus on Africa. She has previously worked in the fields of education, refugee rights, advocacy and child protection in Europe and Africa. She hopes to continue to enhance her experience through further academic and professional experience specifically related to gender issues and women's rights.

HELOISA HARUMI MIURA



Heloisa Harumi Miura is a Brazilian Master's student in her last year at the Paris School of International Affairs (PSIA) studying

Human Rights and Humanitarian Action, also specializing in Latin America and Environment. She holds a degree in International Law from the University of São Paulo (Brazil), where she worked as an environmental lawyer before enrolling at Sciences Po in 2013. She is currently working as a human rights lawyer in Brazil on the field of migration rights, assisting both internal and international migrants in ensuring their basic rights

and real social integration. She is particularly interested in the relation between migration and human rights, and hopes to enhance her expertise in these fields through further studies and professional experiences in NGOs and international organizations.

LAETITIA LESIEURE



Laetitia Lesieure is currently enrolled in a Master's program in Human Rights and Humanitarian Action at the Paris School of International Affairs (PSIA/ Sciences Po). She also holds a bachelor's degree in History and English. Fascinated by the issues of migration and racial discrimination, she is going to spend the next two years completing a Master's degree in American history focusing on contemporary issues among ethnic minorities in the United States. At the moment, she is interning at the Médecins du Monde headquarters in Paris, doing research on the risks that African irregular migrants and asylum seekers face, as well as their psycho-social and medical needs. Laetitia hopes to do more work on the Dominican Republic and migration issues in general through further professional experiences.

ISABEL MAKHOUL



Isabel Makhoul is a graduate student in International Development at the Paris School of International Affairs (PSIA/Sciences Po), where she is specializing in Environment and Sustainable Urban Development. She has gained broad experience in Latin America, studying and working in Argentina, Mexico and Nicaragua. Currently Isabel is working as a Carlo Schmid Fellow at the United Nations Economic Commission for Latin America and the Caribbean (ECLAC) in Washington D.C. In the past she has

also worked with the German Development Cooperation (GIZ) as well as the Friedrich Ebert Foundation (FES). In 2013/14 she participated as a social entrepreneur to the Youth 4 Change Network and in this framework travelled to the Philippines where she could observe firsthand the destruction that typhoon Haiyan had caused. She would like to pursue an international career in the field of urban development and poverty eradication.

JANINA PESKINSKI



Janina Pescinski graduated from Sciences Po with an MA in Human Rights. Since, she has been working at Amnesty International as a consultant on West Africa. She wrote her Master's thesis on transnational human rights advocacy, based on a case study of the Guinean diaspora in Paris, and presented this research at the International Studies Association conference on Human Rights and Change in Istanbul in June 2014. She also holds a BA in cultural anthropology and French from Rutgers University in New Jersey. Janina's research interests include human rights, women's rights, migration, and West Africa.

VERIDIANA SEDEH



Veridiana Sedeh is a consultant on communication and socio-environmental matters and holds a master's degree of Environmental Policy from Sciences Po (IEP-Paris). She is particularly interested in biodiversity conservation as well as in climate change mitigation and adaptation. Alongside with other projects, she is currently in charge of setting up an endowment fund for the Brazilian Association for Investigative Journalism (Abraji), a non-profit organization aimed

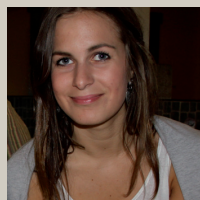
at elevating the standards of journalism and democracy in Brazil. Holding a bachelor's degree in Journalism from University of Sao Paulo, she has also worked at Folha de S. Paulo, one of Brazil's leading newspapers.

ELHAM TORABIAN



Elham TORABIAN is a specialist in education and sustainable development (policies, practices, national planning) and a lecturer at Sciences Po-Paris. She is also the country coordinator for ICET-UNESCO and the president of Idea Fortis International NGO promoting 'social inclusion and equality for open society'. As part of her international consultancy activities, she has developed and managed several projects in different regions (Middle East, Central and Southeast Asia, Africa, and Europe) mainly in the fields of education (EFA/ESD), gender equality, and human rights. She is a doctoral candidate in education with Institute of Education, University College London and holds two Masters on development practice (human rights and environment) from Sciences Po and another on Applied linguistics.

IRUNN VILHELMSSEN HAUG



Irunn Vilhelmsen Haug is currently in the second year of her master's degree in Human Rights and Humanitarian Action at PSIA/Sciences Po. She holds a bachelor's degree in social anthropology from the Norwegian University of Science and Technology. Before attending Sciences Po she completed two internships, one in Nepal and one in Uganda with the East and Horn of Africa Human Rights Defenders Program (EHAHRDP). Parallel to her studies she has worked with unaccompanied minor asylum seekers

in Norway. At Sciences Po she specializes in migration and Africa, and she is currently writing her thesis on the LGBT (lesbian, gay, bisexual and transgender) community and the Anti-Homosexuality Act in Uganda. After graduation she wishes to work on human rights issues from an anthropological perspective, in Africa, Asia or the Middle East.

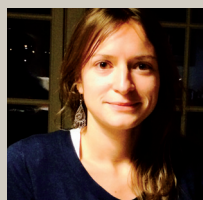
THANITA YAMSIRI



Thanita YAMSIRI is a Master's student in International Security at the Paris School of International Affairs (PSIA), Sciences Po. She

holds a Bachelor's degree in Political Sciences from Thammasat University, Thailand. Thanita received an Endeavour Grant from the Australian Government to study abroad for one year at the Australian National University in Canberra. As an exchanged student, she first experienced the grievance of ethnic minorities and was introduced to the issues of Forced Migration as well as International Security which later inspire her to further her Master's degree in this field. Thanita is also interested in the topics related to Climate Change & Security, Gender & Armed Conflict, Ethnic Minorities and Sustainable Development. She is currently interning at the direction générale de la Gendarmerie nationale (DGGN) in Paris. In the future, she would like to work for the Thai Government in the fields of Security and Migration.

DASHA MOKHNACHEVA



Dasha Mokhnacheva works as part of the Migration, Environment and Climate Change team at the International

Organization for Migration, and is responsible for research and analytical work on

migration and environment policy issues, project management and development, thematic support to IOM offices, partnerships, advocacy and communication on this topic. She is currently working on the development of the first Atlas of Environmental Migration (to be published in 2015).

Before joining IOM in 2012, she worked at the United Nations Development Programme in Russia, her native country, following a brief career in the banking sector and some volunteering experience in Argentina. Her academic background includes a BA in Oriental Studies (Japanese) and Social and Political Sciences at the University of Cambridge, and a Masters in Environment, Sustainable Development and Risks at Sciences Po, Paris.

AMANDA VAN DORT



Amanda Van Dort is a graduate student at the University of Michigan Ford School of Public Policy. In her

previous position she worked as the Country Director for Emerge Global, a non-profit dealing with sexual abuse in Sri Lanka. In her masters program she is focused on human security, specifically in relation to post-conflict endemic issues. She joined IOM as a Policy Intern for Summer 2014, working under the supervision of Dina Ionesco in the Migration, Environment and Climate Change unit. Through this experience Amanda gained insight into multilateral processes, program evaluation and reporting as well as developing a proficiency in migration-related topics. Upon graduation she hopes to work with the United States federal government in foreign policy, contributing to their role in promoting security in a globalized world.



The State of Environmental Migration 2014

A Review of 2013
Edited by
François Gemenne
Pauline Brücker
Dina Ionesco



International Organization for Migration (IOM)



SciencesPo.

With the support of



EUROPEAN COOPERATION
IN SCIENCE AND TECHNOLOGY