Moving Stories

The voices of people who move in the context of environmental change

CLIMATE OUTREACH AND INFORMATION NETWORK

Climate Outreach and Information Network (COIN) is a charity established in 2004 motivated by a vision of a low carbon future that includes everyone. We want to create positive and humane responses to migration in the context of environmental change. We have formed the UK Climate Change and Migration Coalition: an alliance of refugee, migration, development and environmental organisations. The coalition exists to challenge the lack of long-term strategies to support and protect people at risk of displacement linked to environmental change.

www.climateoutreach.org.uk
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Moving Stories

The voices of people who move in the context of environmental change are currently absent from the debate about how this issue is addressed. Moving Stories highlights these powerful, inspiring and often traumatic stories.

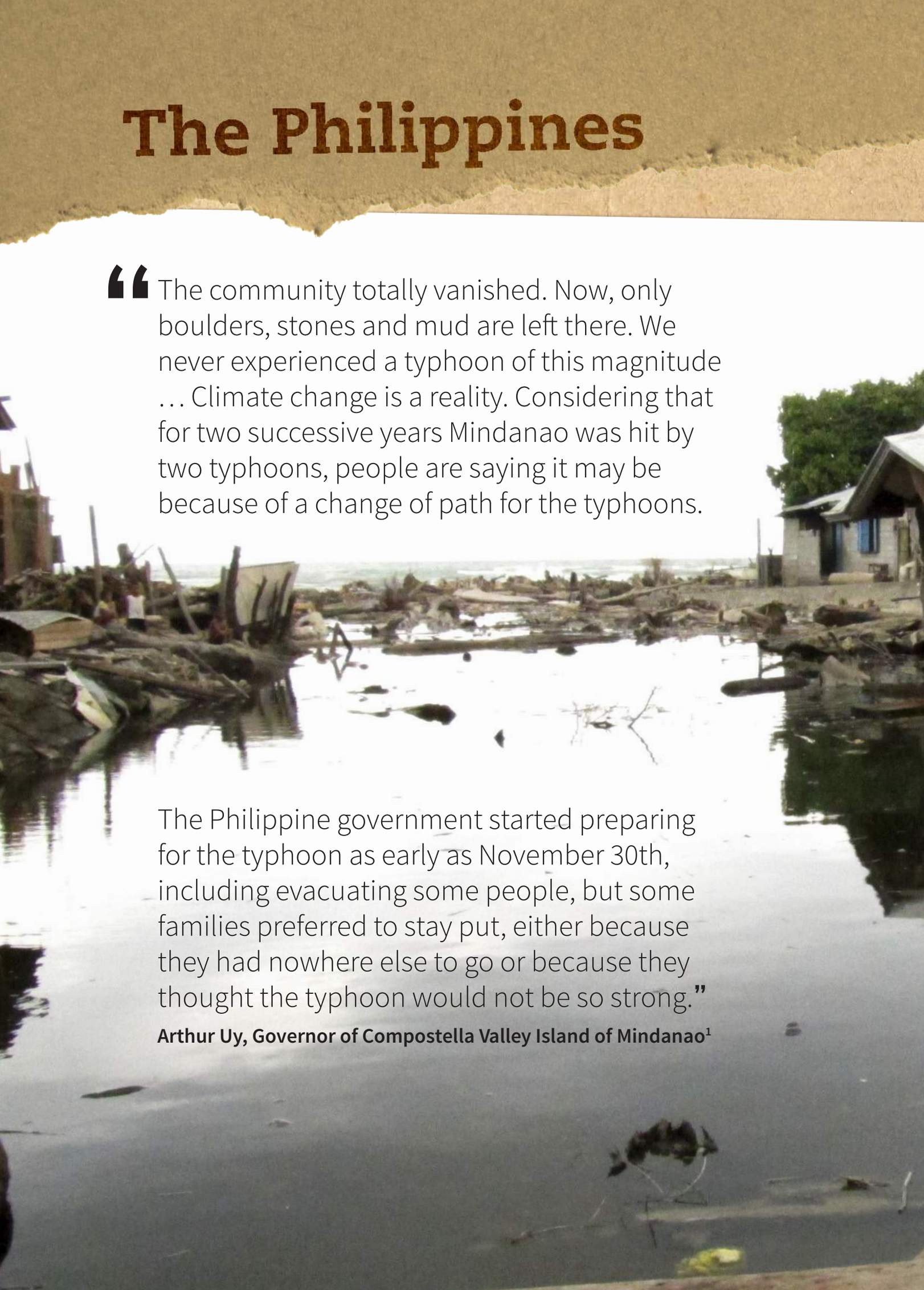
Testimonies from ten regions across the world have been compiled from local news reports, academic journals and interviews recorded by civil society groups. The stories highlight different kinds of movement affected by slow– and rapid–onset disasters.

The stories show us that movement linked to environmental change happens very differently in different parts of the world. The stories also reveal that individual decisions to move or stay vary widely even in response to the same disaster. There is no "typical" migrant.

Moving Stories demonstrate the reality of migration and environmental change. A number of stories show how people have used moving seasonally and temporarily, rather than permanently, as a way of adapting to changing environmental conditions. Several stories demonstrate that remittances from other migrants have increased the resilience of people affected by disasters.

Most importantly these testimonies give a human voice to this complex and controversial issue.

The Philippines



"The community totally vanished. Now, only boulders, stones and mud are left there. We never experienced a typhoon of this magnitude … Climate change is a reality. Considering that for two successive years Mindanao was hit by two typhoons, people are saying it may be because of a change of path for the typhoons.

The Philippine government started preparing for the typhoon as early as November 30th, including evacuating some people, but some families preferred to stay put, either because they had nowhere else to go or because they thought the typhoon would not be so strong."

Arthur Uy, Governor of Compostella Valley Island of Mindanao[1]

“We were trapped in the house for two days until someone came and rescued us in a boat, and we were taken to the local gymnasium which was being used as an evacuation centre. We stayed there for a week but it was so crowded that we decided to leave and go back to the ruins of our house. It proved impossible to live there as well, so we left after another week and spent the next five weeks staying with relatives. I don’t know what the future holds. We are not allowed to go back and live in the place where our old house stood as the government says it’s at risk of flooding if there is another typhoon. We will have to find somewhere else to live and build a house there, but I don’t know when.”

Rosalie Ticala, 33, mother of six, Philippines, Mindanao Island[2]

“We were used to flooding, usually it would come up to here … This time was different: the electricity was cut off, it was dark and the water came quickly. We went up to the second floor and the water kept coming. The flood was a tragedy for everyone. I lost one of my grandchildren and my younger sister. Early the next morning, rescue workers came with boats and they took us to an evacuation centre. Everyone had to leave. Before the typhoon we had a shop selling food and groceries.”

Venus Torres, 48, Philippines[3]

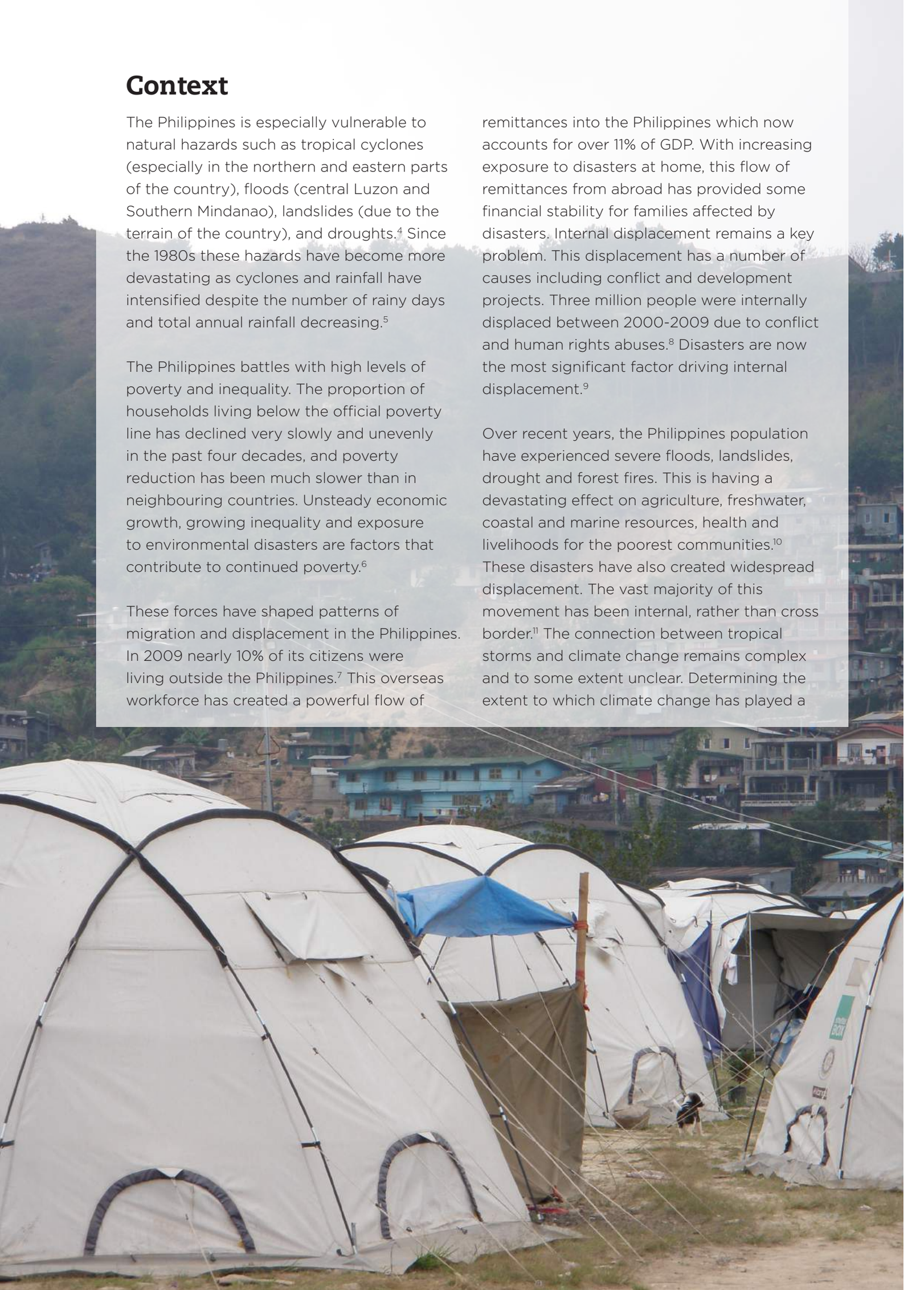
Context

The Philippines is especially vulnerable to natural hazards such as tropical cyclones (especially in the northern and eastern parts of the country), floods (central Luzon and Southern Mindanao), landslides (due to the terrain of the country), and droughts.[4] Since the 1980s these hazards have become more devastating as cyclones and rainfall have intensified despite the number of rainy days and total annual rainfall decreasing.[5]

The Philippines battles with high levels of poverty and inequality. The proportion of households living below the official poverty line has declined very slowly and unevenly in the past four decades, and poverty reduction has been much slower than in neighbouring countries. Unsteady economic growth, growing inequality and exposure to environmental disasters are factors that contribute to continued poverty.[6]

These forces have shaped patterns of migration and displacement in the Philippines. In 2009 nearly 10% of its citizens were living outside the Philippines.[7] This overseas workforce has created a powerful flow of remittances into the Philippines which now accounts for over 11% of GDP. With increasing exposure to disasters at home, this flow of remittances from abroad has provided some financial stability for families affected by disasters. Internal displacement remains a key problem. This displacement has a number of causes including conflict and development projects. Three million people were internally displaced between 2000-2009 due to conflict and human rights abuses.[8] Disasters are now the most significant factor driving internal displacement.[9]

Over recent years, the Philippines population have experienced severe floods, landslides, drought and forest fires. This is having a devastating effect on agriculture, freshwater, coastal and marine resources, health and livelihoods for the poorest communities.[10] These disasters have also created widespread displacement. The vast majority of this movement has been internal, rather than cross border.[11] The connection between tropical storms and climate change remains complex and to some extent unclear. Determining the extent to which climate change has played a



role in recent displacements in the Philippines is therefore difficult. Evidence does indicate that the number of severe tropical cyclones is higher in warmer years.[12] Future hurricanes may 'upstage' recent storms as higher global temperatures lead to more powerful storms.[13] Sea surface temperature is one of the key factors effecting hurricane formation, and warmer seas may provide more energy for hurricanes when they form. However there are other major factors currently influencing the frequency and intensity of hurricanes that may not be linked to climate change. Modelling suggests that globally the number of hurricanes may decrease or remain the same, but the intensity and the number of severe storms may increase.[14] However predicting changes to hurricane activity in individual ocean basins is still difficult and uncertain.

Regardless of the connection to climate change, for many hundreds of thousands of people, displacement due to disasters has become a reality. Tropical storm Washi, known in the Philippines as Sendong, hit the coast on 16 December 2011. It killed more than 1,500 people, damaged over 50,000 homes and displaced some 430,900 people. The greatest impact was felt in and around the cities of Cagayan de Oro, where over half the population (461,877) was displaced, and Iligan, where approximately one third of the population (285,061) was displaced.[15]

Just a year later another devastating storm hit the Philippines. Cyclone Bopha killed several hundred people, displaced in the region of 200,000 and destroyed some 28,000 homes.[16]

1 Thomson Reuters Foundation. 2012. Governor of typhoon-hit Philippines province appeals for aid extension. [ONLINE] Available at: http://bit.ly/1akO8zw. [Accessed 19 August 13].
2 Thomson Reuters Foundation. 2012. Typhoon survivor Rosalie tells her story in Philippines. [ONLINE] Available at: http://bit.ly/13MsEnX. [Accessed 19 August 13].
3 Thomson Reuters Foundation. 2012. Rebuilding lives after Typhoon Washi in Philippines. [ONLINE] Available at: http://bit.ly/19Efr8L. [Accessed 19 August 13].
4 Anshory Yusuf, A; Francisco, H, 2009. Climate Change Vulnerability Mapping for Southeast Asia. 1st ed. Singapore: Economy and Environment Program for Southeast Asia.
5 M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds) (2007). Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press, P 473-476.
6 Asian Development Bank, 2009. Poverty in the Philippines: causes, constraints, and opportunities. 1st ed. Manila: Asian Development Bank.
7 Office of the President of the Philippines. Commission on Filipinos overseas. 2011. Stock Estimate of Overseas Filipinos. [ONLINE] Available at: http://bit.ly/127i0dq. [Accessed 23 August 13].
8 Internal Displacement Monitoring Centre. 2012. Up to 3 million people displaced by conflict and human rights abuses between 2000 and 2009. [ONLINE] Available at: http://bit.ly/19OcL8F [Accessed 19 March 2013].
9 Internal Displacement Monitoring Centre. 2013. Country page: Philippines [ONLINE] Available at: http://bit.ly/19OcL8F [Accessed 19 March 2013].
10 Defense Language Institute Foreign Language Centre, 2011. Philippines in perspective and orientation guide. 1st ed. Manila: DLIFLC .
11 UN Refugee Agency. 2013. Philippines. 2013 UNHCR regional operations profile - South-East Asia. [ONLINE] Available at: http://bit.ly/1dz999s. [Accessed 23 August 13].
12 Grinsteda, A; Moorea, JC; Jevrejevaa, S, 2012. Homogeneous record of Atlantic hurricane surge threat since 1923. Proceedings of the National Academy of Sciences of the United States of America PNAS, Proceedings of the National Academy of Sciences.
13 Geophysical Fluid Dynamics Laboratory. 2013. Global Warming and Hurricanes. [ONLINE] Available at: http://1.usa.gov/5jZ7D4. [Accessed 19 March 2013].
14 Knutson, T; McBride, R; Chan, J; Emanuel, K; Holland, G; Landsea, C; Held, I; Kossin, J P.; Srivastava, A. K.; Sugi, M, 2010. Tropical cyclones and climate change. Nature Geoscience, P 3, 157 - 163.
15 Internal Displacement Monitoring Centre, 2013. Disaster-induced internal displacement in the Philippines: the case of Tropical Storm Washi/Sendong. 1st ed. Geneva: IDMC.
16 Thomson Reuters. 2013. CARE responds to Cyclone Bopha in the Philippines. [ONLINE] Available at: http://bit.ly/154CesD. [Accessed 23 August 13].

Latin America

“Rains recently have been very intense – very intense. Without comparison, like nothing seen before. Years ago the rainy season lasted two months, November and December, and water levels reached 20 to 30 Centimetres. Now, in the last six to seven months, they’ve reached over two metres. We’ve never seen this before. We don’t want to leave our land: here are our past, our memories, our ancestors. We don’t want to move to other parts, we don’t know what to do there. We would turn into delinquents. We’d enter into a cycle of poverty which happens in the cities.”

Octavio Rodriguez, Las Caracuchas, Sucre, Colombia[1]

“I am very worried. The snow and ice are disappearing and melting day by day, year by year. The sun is stronger. It doesn’t snow as much. We are very concerned … There could be a tremendous drought. There might be no more snow, no more water coming down. So how would we irrigate our plots of land? My son would have to leave and go somewhere else, to other countries.”

Lucia Quispe, 38, Khapi, Bolivia[2]

“When I was young, it was quite mild, not such a hot heat. That’s why Illimani is melting. It’s three times as hot. It did not used to be so hot. I am very sad when I see the snowline going up. I don’t want it to be like that. I don’t have any children, but other compañeros in the community, they do have children. They are going to suffer the last days, if there is no water. I am 67 years old, and I am not going to suffer as I am going to die. But the other villagers, yes they will suffer. That’s why I am so upset that there is not going to be any water. I am going to live another ten to fifteen years, but the others … I am not going to see it. But the young will witness the end of Illimani.”

Marcos Choque, 67, Khapi, Bolivia[2]

“My grandfather, father and I have worked these lands. But times have changed … The rain is coming later now, so that we produce less. The only solution is to go away, at least for a while. Each year I’m working for 3 to 5 months in Wyoming. That’s my main source of income. But leaving my village forever? No. I was raised here and here I will stay.”

Miguel, 45, Hueyotlipan, Mexico[3]

Context

The Latin American region is one of the most vulnerable to climate change. Many of its countries are located in the hurricane belt; others depend on the thaw of the snow and ice deposits in the Andes to supply water to their urban and agricultural sectors; and several are at high risk from major disasters such as floods.[4] Since 1998, the melting ice from the ice fields in Patagonia has contributed to around 2% of the global annual sea level rise.[5] The region has experienced climate variability and more extreme weather events over recent years, such as intense Venezuelan rainfall (1999, 2005), flooding in Argentina (2000-2002, 2007), Amazon drought (2005), hail storms in Bolivia (2002) and the Greater Buenos Aires area (2006), the unprecedented Hurricane Catarina in the South Atlantic (2004) and the record hurricane season of 2005 in the Caribbean Basin,[6] extreme floods in El Salvador (2011),[7] Tropical storm Matthew in Venezuela (2010) and a series of floods in Colombia (2011).[8]

Predicted increases in temperature will severely affect this region and its arable lands. Significantly, 90% of Latin America's agriculture is rainfed.[9] A survey of rural populations in Peru found that changing rainfall patterns had a 'severe' effect on 53% of respondents' ability to produce food.[10] Other stresses compound the ability of this region to adapt to climatic changes. Demographic pressures as a result of rural to urban migration have led to unemployment and unsanitary conditions, resulting in the spread of infectious diseases.[11] Additionally, over-exploitation is a threat to local production systems and has led to water exploitation and the mismanagement of irrigation systems. Similarly deforestation from agricultural expansion in parts of Argentina, Bolivia, Paraguay and Brazil has caused land degradation.[11]

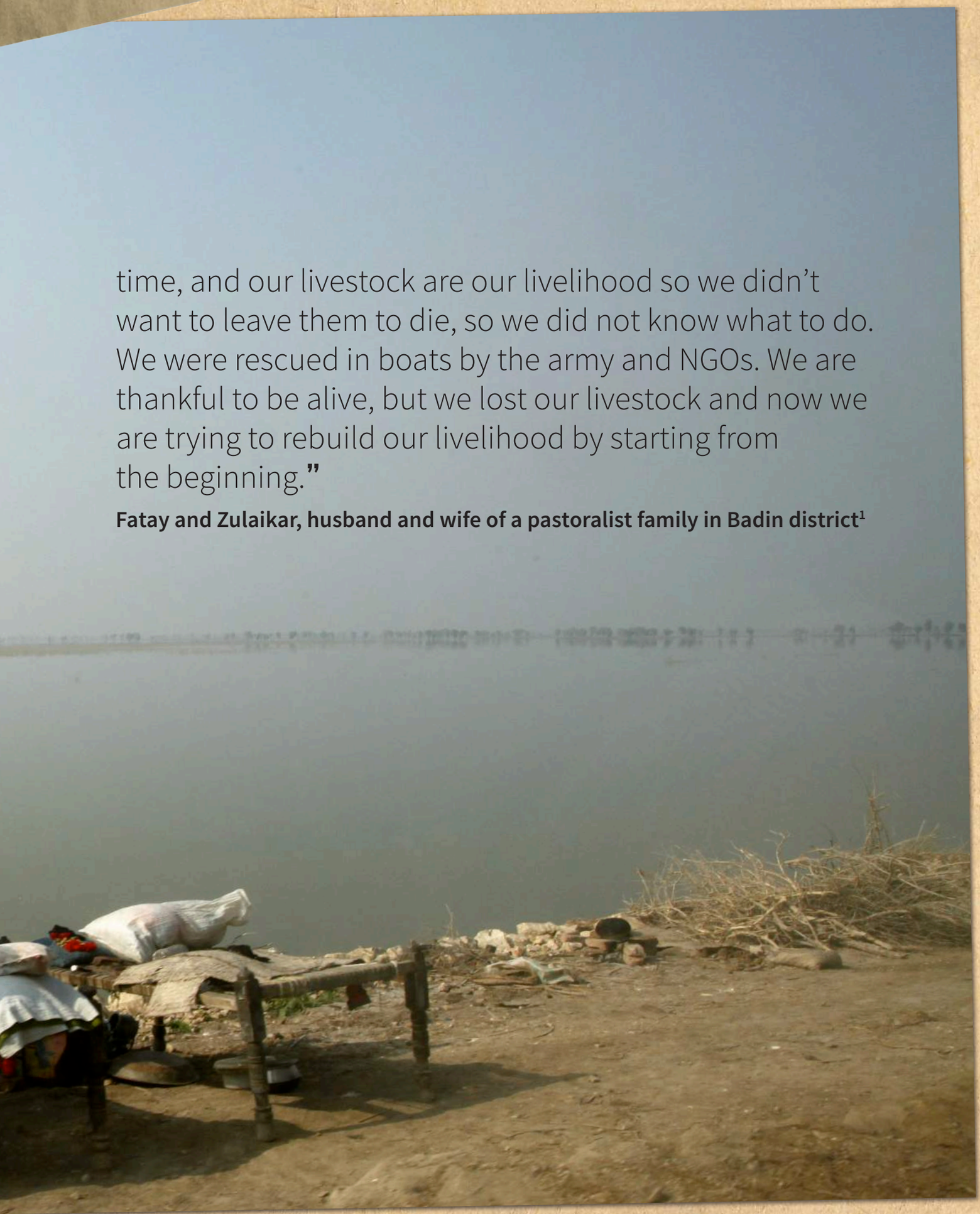
Historically (prior to the 1970s) many Latin American countries were the destination for European migrants and had net immigration,[12] a situation which has reversed in recent decades. The debt crisis of the 1980s led to the so called 'lost decade'; industrialisation, growth in the extractive industries and large-scale intensive agriculture were all economic drivers of migration. Flow followed the pattern of urbanisation and emigration to the EU. In 2006 a third of Argentines claimed they would emigrate if they had the resources to do so.[12] In Ecuador the top destination of internal migrants is to newly deforested areas, which are sites of intensive agriculture and jobs. Conflict is another main driver of migratory flows, especially in regards to Columbians fleeing the violence caused by the FARC / government fighting. The number of government-registered 'internally displaced persons' (IDPs) in Colombia rose to 3.9 million in 2010/11, making it the world's largest internally displaced population.[13]

The Intergovernmental Panel on Climate Change predicts that migration from the countryside to the cities will continue.[14] Whilst there are inevitably a range of factors that lead people to migrate, the impact of climate change, especially if livelihoods are damaged, may intensify rural-urban migration. The significance of this is that urban areas will need to adapt to both climatic changes and an increase in population.

1 Refugees International. (2012). Colombia: Two Years Under Water. [Online Video]. 27 March. Available from: http://bit.ly/13LfUDm. [Accessed 23 August 2013].
2 Oxfam Bolivia, 2009. Bolivia Climate change, poverty and adaptation. 1st ed. La Paz: Oxfam.
3 Faist, F; Alsher, S, 2009. EACH-FOR Environmental Change and Forced Migration Scenarios. Mexico case study report. 1st ed. Stockholm: EACH-FOR.
4 Economic Commission for Latin America and the Caribbean, 2010. Climate change: a regional perspective. Unity Summit of Latin America and the Caribbean. 1st ed. Mexico City: ECLAC.
5 World Bank. 2012. Climate Change: Is Latin America prepared for temperatures to rise 4 degrees?. [ONLINE] Available at: http://bit.ly/VEG3zP. [Accessed 23 August 13].
6 M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds) (2007). Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press, Chapter 13, 13.2.2.
7 BBC News. 2011. Central America floods and landslides 'leave 80 dead'. [ONLINE] Available at: http://bbc.in/pBYYMq. [Accessed 23 August 13].
8 Garlati , A, 2013. Climate Change and extreme weather events in Latin America: an exposure index. 1st ed. Washington: Inter-American Development Bank.
9 Hoffman, M; Grigera, A, 2013. Climate Change, Migration, and Conflict in the Amazon and the Andes: Rising Tensions and Policy Options in South America. 1st ed. Washington: Centre for American Progress.
10 Ho, Raúl, and Andrea Milan (2012). "Where the Rain Falls" project. Case study: Peru. Results from Huancayo Province, Junín Region. Report No. 5. Bonn: United Nations University Institute for Environment and Human Security (UNU-EHS).
11 M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds) (2007). Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press, Chapter 13, 13.7
12 Alverez Gila, A, 2009. EACH-FOR Environmental Change and Forced Migration Scenarios. Ecuador case study report. 1st ed. Stockholm: EACH-FOR.
13 Internal Displacement Monitoring Centre. 2013. Colombia: Improved government response yet to have impact for IDPs. [ONLINE] Available at: http://bit.ly/qCC7y2. [Accessed 23 August 13].
14 M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds) (2007). Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press, Chapter 13, 13.7.

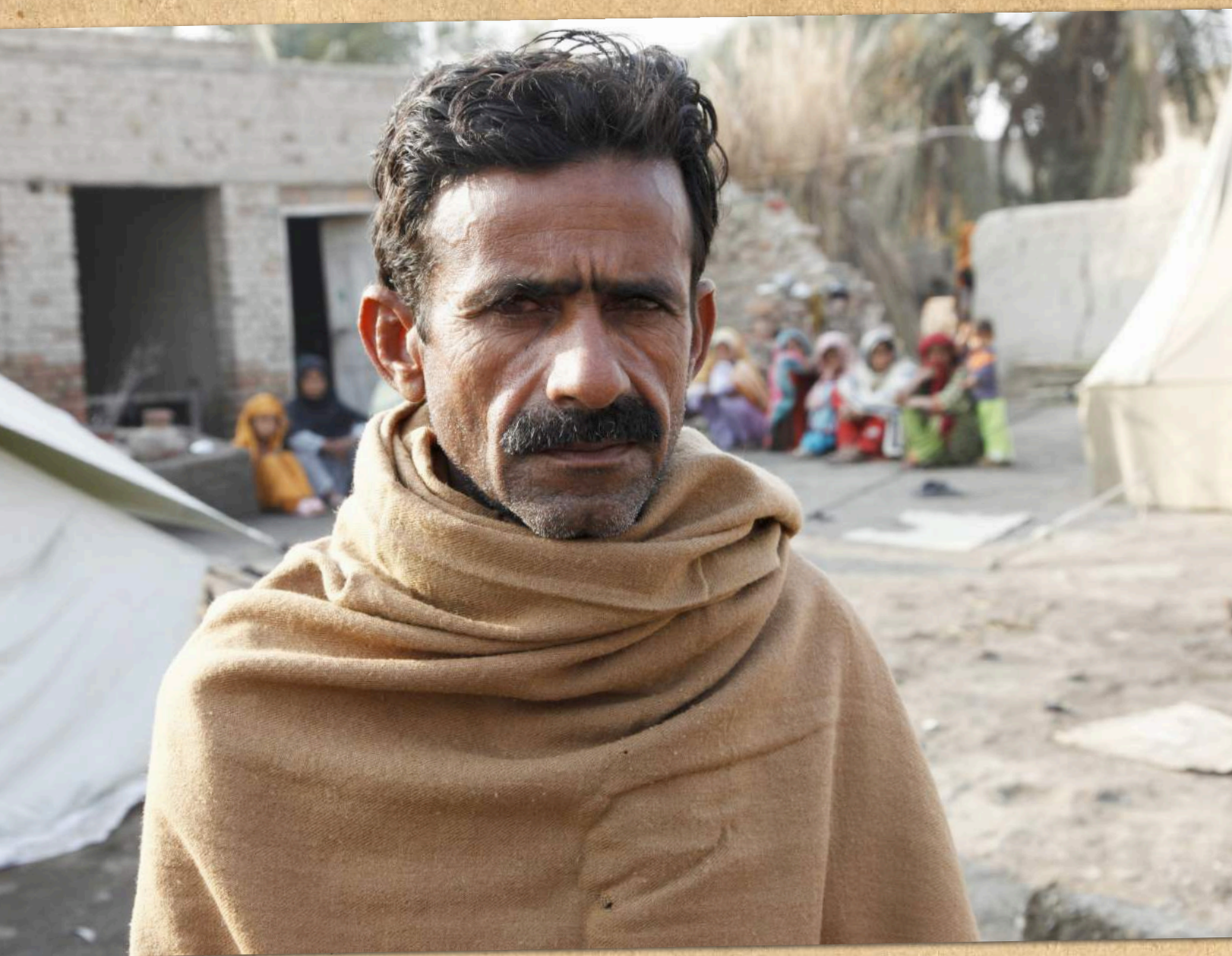
Pakistan

“The rains came in the middle of the night, while most people were sleeping. When we woke up, there was water of about 2-3 feet and we did not know how to escape, because our village is far from the main road. The water was very dirty because the floods had damaged our [sanitation and water] facilities. I was very pregnant at the



time, and our livestock are our livelihood so we didn't want to leave them to die, so we did not know what to do. We were rescued in boats by the army and NGOs. We are thankful to be alive, but we lost our livestock and now we are trying to rebuild our livelihood by starting from the beginning."

Fatay and Zulaikar, husband and wife of a pastoralist family in Badin district[1]



“I go to get registered [as an IDP] and they dismiss me. I don't want to live here. I don't want my children out on the streets. In my village I have little but I look after my family. They throw food at me like I am a beggar. I have never begged for anything in my life, why do they treat me like this?”

Shauquat Ali, displaced tenant farmer and father of nine[2]

“The water came at night and we didn’t have time to save our belongings; we had to choose whether to save our children and ourselves or our property and assets, so we chose to save our kids. We left everything and ran to save our lives.”

Unnamed survivor of the 2010 floods[3]

Context

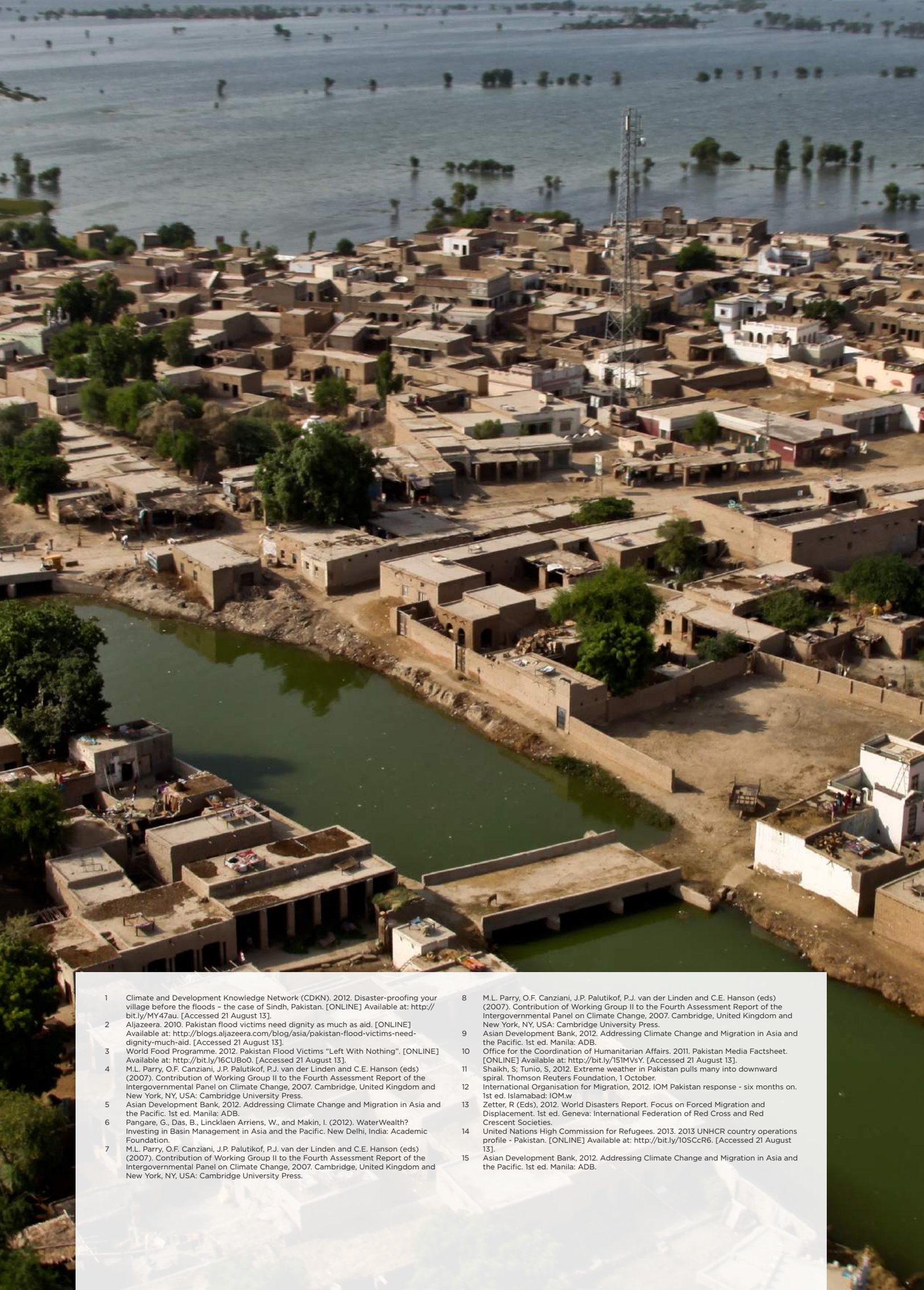
Pakistan is highly exposed to the impacts of climate change. The IPCC have associated increasing temperatures with the severity of the monsoon rains and predict an increase in severity.[4] Northern Pakistan faces increased risk of flooding and landslides.[5] An increase of cyclonic activity will impact Southern Pakistan[5] and the city of Karachi is at high risk from sea-level rise, prolonged cyclonic activity, and greater salt-water intrusion.[5] Pakistan's vulnerability is increased due to its reliance upon water from the Indus river and tributaries, which supply two thirds of the water the county uses for irrigation and domestic use.[6] The Indus is fed by the Himalayan glaciers, which are receding significantly, with the likelihood of them disappearing by the year 2035.[7] Other factors make Pakistan vulnerable to the impacts of climate change. Nearly half of the population is dependent on agricultural livelihoods; there is considerable rural poverty, urban unrest, land degradation and shortfalls in food production.[8] Further urbanisation and industrialisation place more pressure upon water supplies which are already threatened by climate change.

In July 2010, Pakistan was affected by heavy monsoon rains, which led to massive flooding in the Indus River basin. More than 10 million people were displaced, with about 20% of the country under water. The death toll was around 2,000. The provision of international aid was widely considered insufficient, with millions of farmers housed in refugee camps, and crops and cattle destroyed.[9] Flooding struck again in 2011. The disaster affected 18 million people and destroyed 1.7 million homes.[10]

In August 2012 following the monsoon floods, the region of Tharparkar experienced significant drought, forcing 600,000 people dependent on rainfed agriculture to internally migrate.[11] The International Federation of Red Cross (IFRC) put the number of displaced people at 250,000. The total number of people affected stands at 4.4 million.[12]

Floods and natural disasters cause considerable forced migration within Pakistan. Pakistan receives roughly 8% of the total global funding available for dealing with displacement. There are 745,000 IDPs , the majority fleeing from fighting in Federally Administered Tribal Areas (FATA).[12] But despite such a large IDP population, Pakistan is also a destination for international migrants in the region. It is the top destination for Somali refugees.[13] There are currently 1.6 million Afghan refugees in Pakistan. The country is currently experiencing the world's largest protracted refugee situation.[14]

As well as vast numbers of displacees and the absorption of neighbouring refugees, Pakistan also has a long history of voluntary migration, which is largely split between unskilled labourers travelling to the Emirates and Dubai and more skilled workers heading for Europe and the US. Pakistani diasporas are amongst the largest and most extensive in the world, supplying remittances to families in Pakistan of $12 billion a year.[15] The IPCC predicted that "circular migration patterns, such as those punctuated by shocks of migrants following extreme weather events, could be expected". This is supported by the Asia Development Bank which suggests that "environmental factors are already an important driver in migration" and that "floods, cyclones and desertification have led in recent years to significant population movements, mostly from rural to urban areas".[15]



1 Climate and Development Knowledge Network (CDKN). 2012. Disaster-proofing your village before the floods – the case of Sindh, Pakistan. [ONLINE] Available at: http://bit.ly/MY47au. [Accessed 21 August 13].

2 Aljazeera. 2010. Pakistan flood victims need dignity as much as aid. [ONLINE] Available at: http://blogs.aljazeera.com/blog/asia/pakistan-flood-victims-need-dignity-much-aid. [Accessed 21 August 13].

3 World Food Programme. 2012. Pakistan Flood Victims "Left With Nothing". [ONLINE] Available at: http://bit.ly/16CUBo0. [Accessed 21 August 13].

4 M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds) (2007). Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press.

5 Asian Development Bank, 2012. Addressing Climate Change and Migration in Asia and the Pacific. 1st ed. Manila: ADB.

6 Pangare, G., Das, B., Lincklaen Arriens, W., and Makin, I. (2012). WaterWealth? Investing in Basin Management in Asia and the Pacific. New Delhi, India: Academic Foundation.

7 M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds) (2007). Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press.

8 M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds) (2007). Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press.

9 Asian Development Bank, 2012. Addressing Climate Change and Migration in Asia and the Pacific. 1st ed. Manila: ADB.

10 Office for the Coordination of Humanitarian Affairs. 2011. Pakistan Media Factsheet. [ONLINE] Available at: http://bit.ly/151MVsY. [Accessed 21 August 13].

11 Shaikh, S; Tunio, S, 2012. Extreme weather in Pakistan pulls many into downward spiral. Thomson Reuters Foundation, 1 October.

12 International Organisation for Migration, 2012. IOM Pakistan response - six months on. 1st ed. Islamabad: IOM.w

13 Zetter, R (Eds), 2012. World Disasters Report. Focus on Forced Migration and Displacement. 1st ed. Geneva: International Federation of Red Cross and Red Crescent Societies.

14 United Nations High Commission for Refugees. 2013. 2013 UNHCR country operations profile - Pakistan. [ONLINE] Available at: http://bit.ly/10SCcR6. [Accessed 21 August 13].

15 Asian Development Bank, 2012. Addressing Climate Change and Migration in Asia and the Pacific. 1st ed. Manila: ADB.

Pacific Islands

> “The majority of I-Kiribati have no wish to live in another country, but mounting evidence suggests that we may soon have little choice. Therefore migration may become the key part of the way we are forced to ‘adapt’ … But, there’s a problem. Unlike our neighbours in Tuvalu (with a population of about 10,000) we have no significant or sympathetic migration relationship or policy with any country.”

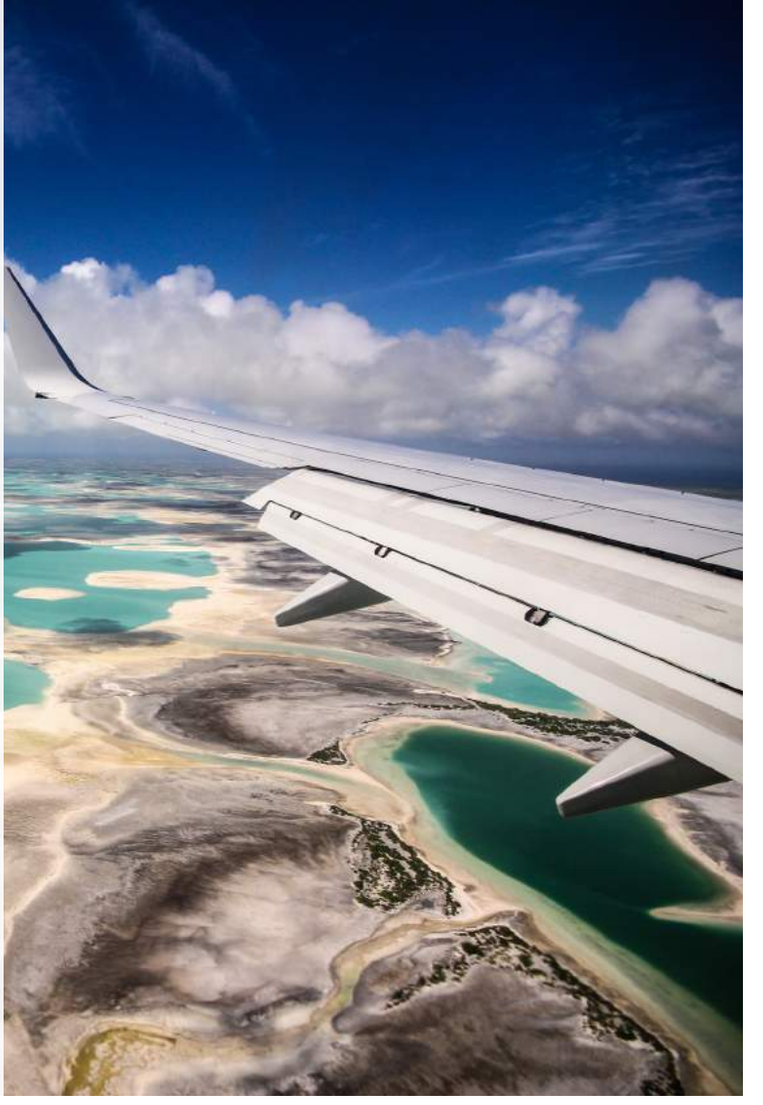
Linda Uan, Kiribati[1]

> “Carterets’ people are facing, and will continue to face, many challenges as we relocate from our ancestral grounds. However, our plan is one in which we remain as independent and self-sufficient as possible. We wish to maintain our cultural identity and live sustainably wherever we are.”
>
> **Ursula Rakova, Carteret Islands**[2]

Context

The Pacific islands are recognised as being especially vulnerable to the effects of climate change.[3] As small, often remote, land masses surrounded by ocean, they are commonly beset with rapid-onset natural hazards such as tsunamis, cyclones, flooding, volcanic eruptions and earthquakes.[4] They are also affected by slow-onset disasters such as soil erosion, droughts, coral bleaching, and salinisation of soils and water. Climate change is likely to exacerbate both slow- and rapid-onset disasters, with consequential negative effects on livelihoods.[4]

People living in the Pacific Islands are experiencing changes in their climate such as higher temperatures, more extreme cyclonic activity, shifts in rainfall patterns and rising sea levels.[5]



The effects of climate change are very significant. Rising sea levels are leading to sea incursion, coastal erosion and storm surges. Given the size of small islands and the fact that communities commonly live near the coast,[5] infrastructure, homes and the livelihoods of Island communities are greatly threatened.[5] Many small islands have limited freshwater resources. A reduction in rainfall coupled with a rise in sea level would seriously compromise water availability, which would have an impact on agriculture, livelihoods and the ecosystem.[6] For example, in the Pacific, a 10% reduction in average rainfall (by 2050) would lead to a 20% reduction in the size of the freshwater on Tarawa Atoll, Kiribati.[7] Climate change is also affecting fishing and coral reefs, which in turn impact on the livelihoods of island communities and reduce tourism, a source of income for many Pacific Island states.

The Pacific islands clearly have a high vulnerability to climate change with a low adaptive capacity. There are a range of factors which limit climate adaptability, including dependence upon subsistence agriculture, natural and economic resources, small populations, remoteness, dependence upon international trade and lack of infrastructure.[8] The World Bank found that in the absence of adaptation, a high island such as Viti Levu, Fiji, could experience damages of US$23 million to 52 million a year by 2050.[9] A group of low islands such as Tarawa, Kiribati, could face average annual damages of more than US$8 million to 16 million per year.[9]

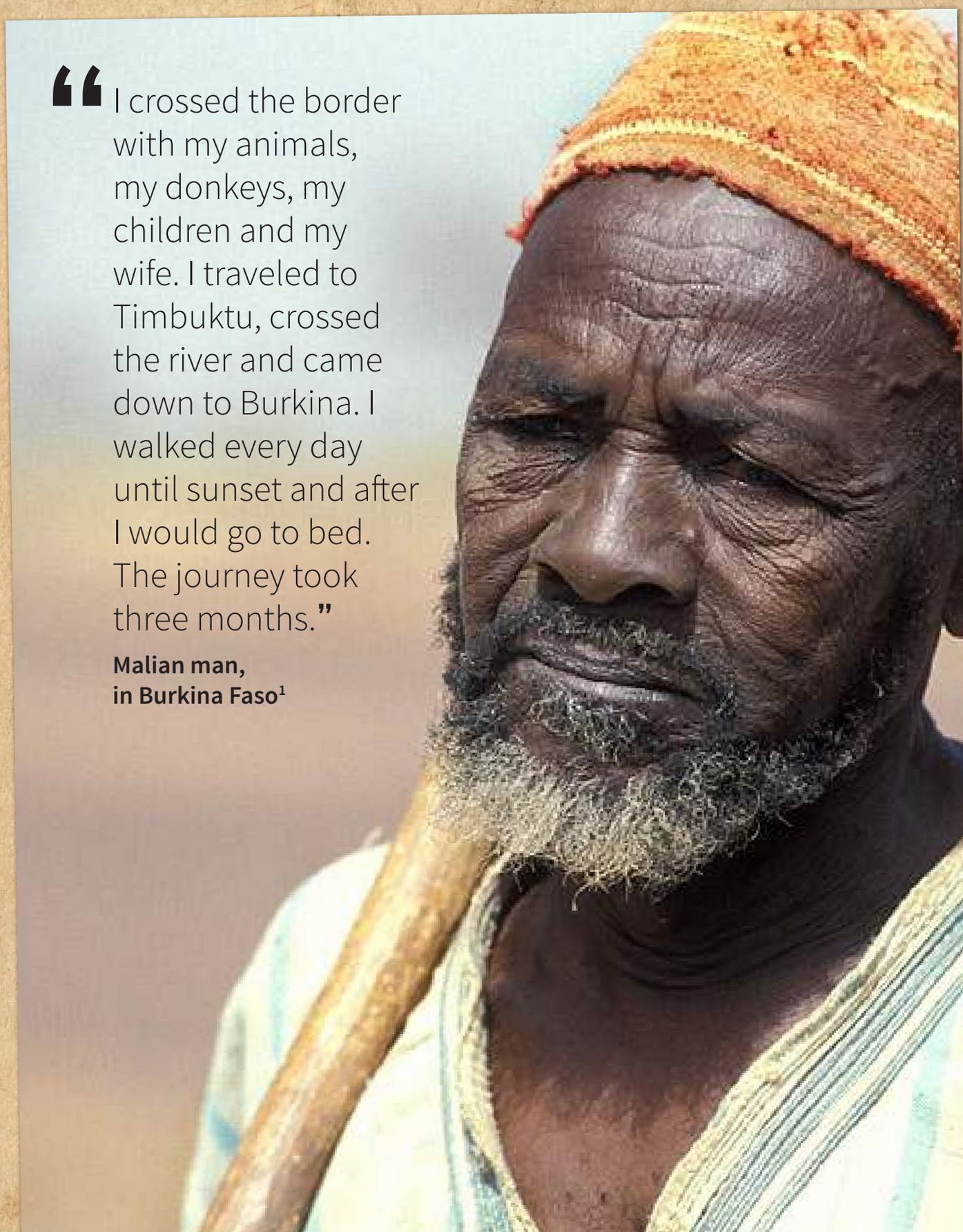
Historically economic migration, both internal and external, has been a feature within Pacific Island communities.[10] Resettlement and within-country schemes have also been common in the last decades such as with migration from the Cartaret Islands in Papua New Guinea to Bougainville, and from the

outer islands of Tuvalu to the capital Funafuti, the former as a consequence of inundation from high water levels and storms, the latter primarily in search of wage employment.[11] Some atoll Pacific countries are understood to be at risk of becoming completely uninhabitable through rises in sea levels. International migration may also be necessary for such residents of atoll where there is no habitable territory. There are a number of historical precedents for such action, primarily between British colonies and colonial powers, however these have been fraught with difficulties.[12]

The global rural to urban migratory trend is also prevalent in this region, with people moving to the mainland away from smaller outlying islands. Those left behind are more vulnerable to rapid-onset disasters whilst more heavily populated areas face managing humanitarian disasters in an urban context.[12]

1 Government of Kiribati. 2013. I-Kiribati want to migrate with dignity. [ONLINE] Available at: http://www.climate.gov.ki/2013/02/12/i-kiribati-want-to-migrate-with-dignity/. [Accessed 19 August 13].
2 Ursula Rakova. 2009. Our World 2.0. [ONLINE] Available at: http://ourworld.unu.edu/en/how-to-guide-for-environmental-refugees/. [Accessed 19 August 13].
3 M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds) (2007). Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press, Chapter 16, 16.2.2.2.
4 Ferris, E; Cernea, M; Petz, D, x, 2011. On the front line of climate change: Learning from and with Pacific Island Countries. 1st ed. New York: The Brookings Institution – London School of Economics. Project on Internal Displacement.
5 M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds) (2007). Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press, Chapter 16.
6 The International Fund for Agricultural Development (IFAD), 2012. Climate Change Impacts - Pacific Islands. 1st ed. Rome: IFAD.
7 M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds) (2007). Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press. Executive Summary.
8 Ferris, E; Cernea, M; Petz, D, x, 2011. On the front line of climate change: Learning from and with Pacific Island Countries. 1st ed. New York: The Brookings Institution – London School of Economics. Project on Internal Displacement.
9 M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds) (2007). Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press.
10 Ferris, E; Cernea, M; Petz, D, x, 2011. On the front line of climate change: Learning from and with Pacific Island Countries. 1st ed. New York: The Brookings Institution – London School of Economics. Project on Internal Displacement.
11 M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds) (2007). Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press.
12 Ferris, E; Cernea, M; Petz, D, x, 2011. On the front line of climate change: Learning from and with Pacific Island Countries. 1st ed. New York: The Brookings Institution – London School of Economics. Project on Internal Displacement.

The Sahel



"I crossed the border with my animals, my donkeys, my children and my wife. I traveled to Timbuktu, crossed the river and came down to Burkina. I walked every day until sunset and after I would go to bed. The journey took three months."

Malian man, in Burkina Faso[1]

“Migration has now become an inevitable method of adaptation for us … As a means of survival for us and our animals, we are forced to continuously migrate despite all the risks involved. This is our form of adaptation. We have always mastered it, but if nothing is done to ensure the safety of our space and activities, we risk, one day, being forced to abandon our way of life and join the swelling ranks of the unemployed in the city.”

Hindu Oumarou Ibrahim, Peul Mbororo of Chad[2]

Context

Across Africa temperatures have warmed over the past few decades.[3] The Sahel, an arid and semi-arid region based on the southern edges of the Sahara and spanning the width of Africa, experiences considerable natural climatic variability. This area was the subject of a prolonged and severe drought from the late 1960s to 1980s from which the rainfall deficit has never sufficiently recovered. There is general consensus that temperatures are set to rise in the Sahel by 3-4 degrees Celsius by 2100.[4] However, there is significant disagreement as to whether it is likely to become wetter or drier.[4]

Climatic variability causes extreme difficulty in the Sahel. The populations are highly dependent on agriculture for livelihoods. As agriculture in this region is almost entirely rainfed, it is dependent upon a 3-4 month rainy season to refill lakes and rivers, which in turn irrigate crops. Reductions in rainfall have a devastating effect upon the survival of many communities.[5] As well as erratic rainfall, a number of other factors impact on the livelihoods and welfare of the populations living in the Sahel. Over the past half century a combination of land degradation, population growth and misplaced environmental and development policies have contributed to vulnerability. Thus the challenges of a changing climate both compound and are compounded by these vulnerabilities.

Worsening environmental conditions in the Sahel have had a number of impacts on mobility. Historically, droughts have triggered massive displacement. The long drought during the 1960s to 1980s created a large-scale movement of people. This was primarily internal rather than cross border, and generally from the north to south of countries. It also created extensive rural to

urban migration within countries.[6] Where cross-border movement did occur it tended to be from the landlocked Sahelian countries to the coastal countries.

However the connections between climate change, drought and migration are not simple. Drought is often the result of natural variations in weather, however these variations are dangerously intensified by climate change. So while it is impossible to state that a particular drought is a result of climate change, it is also not the case that climate change has no effect.[7] The current understanding is that drought, including in the Sahel, is made more likely by human induced climate change.[8] Further, the effect of drought on migration is not simple. Moving requires financial resources and, as income from farming falls, households have less money to fund their journey.[9] During the severe 1983-85 drought in the Sahel region there was widespread displacement. However in Mali mobility actually decreased. Households did not have the resources to move, and so stayed in situ despite the worsening conditions. This as example of how a changing environment can in fact lead to less mobility, trapping vulnerable people in high-risk areas.[10] Encroaching deserts are threatening much of Africa's arable land; if trends continue two thirds of arable land could be lost by 2025.[11] The Sahel is particularly vulnerable to encroaching desert, which, combined with drought and more perennial water scarcity, is threatening livelihoods. The United Nations Food Programme estimates that the 2011 Sahel drought left 11 million people without enough to eat.[12] The 2012 current food crisis impacted on 18 million people and left 1 million children malnourished.[13] This year the UN is again calling for $1.6 billion in humanitarian aid[14] (the same figure as 2012), as an estimated 10.3 million face the risk of going hungry in 2013.[15] This warning comes while the region is still in the grips of an ongoing food crisis.

1 Refugees International. (2012). Sahel: Malian Refugees and Hosts Hit Hard by Crises. Available: http://www.refugeesinternational.org/blog/video/sahel-malian-refugees-and-hosts-hit-hard-crises. [Accessed 30 July 2012].
2 International Organization for Migration (IOM) (2012). International Dialogue on Migration No. 18, Climate Change, Environmental Degradation and Migration. Geneva.
3 Intergovernmental Panel on Climate Change (IPCC), Climate Change 2007, Impacts, Adaption and Vulnerability, Chapter 9, 9.2.1.
4 Buontempo, C (2010). Sahelian climate: past, current, projections. Exeter, UK: Met Office Hadley Centre and UK Foreign and Commonwealth Office.
5 Kandji, S; Verchot, L; Mackensen J (2006). Climate Change and Variability in the Sahel Region: Impacts and Adaptation Strategies in the Agricultural Sector. Nairobi, Kenya: Word Agroforestry Centre (ICRAF), United Nations Environment Programme (UNEP).
6 Permanent Interstate Committee for Drought Control in the Sahel (CILSS) (2011). Livelihood Security Climate Change, Migration and Conflict in the Sahel. Geneva: UNEP, International Organization for Migration (IOM), Office for the Coordination of Humanitarian Affairs (OCHA), UN University.
7 Funk, C. (2011). We thought trouble was coming. Nature. 476 (7).
8 Lott, F. C., N. Christidis, and P. A. Stott (2013), Can the 2011 East African drought be attributed to human-induced climate change?, Geophys. Res. Lett., 40, 1177–1181.
9 Black, Richard; Bennett, Stephen R. G.; Thomas, Sandy M.; Beddington, John R.. (2011). Climate change: Migration as adaptation. Nature. 478 (1), 447–449.
10 Foresight: Migration and Global Environmental Change (2011) Final Project Report Executive Summary The Government Office for Science, London.
11 Africa Renewal Online. (2012) Desertification a threat to Africa's development. Exclusive interview with Luc Gnacadja, head of UN desertification convention. Africa Renewal, [blog] 2nd October, Available at: http://www.un.org/africarenewal/web-features/desertification-threat-africa%E2%80%99s-development [Accessed 31 July 2012].
12 UN News Centre. 2013. West Africa's Sahel region still in crisis and requires urgent support, says UN official. UN News Centre, [blog] 11 June 2013, Available at: http://www.un.org/apps/news/story.asp?NewsID=45146#.Ufk6PbvLjd4 [Accessed 31 July 2013].
13 Oxfam International. (2012) Burkina Faso: The food crisis in pictures. Oxfam International, [blog] Available at: http://www.oxfam.org/en/emergencies/sahel-food-crisis/burkina-faso-photos [Accessed 31 July 2013].
14 http://reliefweb.int/sites/reliefweb.int/files/resources/SahelStrategy2013_Dec2012.pdf
15 http://www.irinnews.org/Report/97505/Why-the-Sahel-needs-1-6-billion-again-this-year

The Arctic

"About five years ago the sea ice used to take longer to melt. It lasted about 10 months but now it's only 8 months. This harms our way of life, our way of hunting, our way of fishing, and our way of traveling from one place to another."

Charlie Nakqashuk, Pangnirtung, Nunavut[1]

“If we relocate during the summer, we’d need a lot of barges to move everything … The thought of moving our village is very sad because Shishmaref is the place where I grew up. Shishmaref is a great place to live because everyone knows each other. If we move, it would probably bring our community closer together. It could be totally the opposite though because some people might just move to a new place. If we move, it won’t be the same because it wouldn’t be the Shishmaref that everyone knows.”

Allison “Anisaaluk” Nayokpuk, Shishmaref, Alaska[1]

Context

The Arctic's indigenous people have traditionally led nomadic lives. However, over the last half century there has been a general decrease in the mobility of indigenous Arctic people. Historically the primary cause of this has been the desire of central governments to provide services such as health and education, which to some extent required nomadic people to settle into small towns and villages. This sedentarisation has not always been voluntary and there are examples of forced settlement from across the Arctic regions,[2] especially in the Russian far north.[3] Another major trend has been the out-migration of young people in search of work and education in other locations.

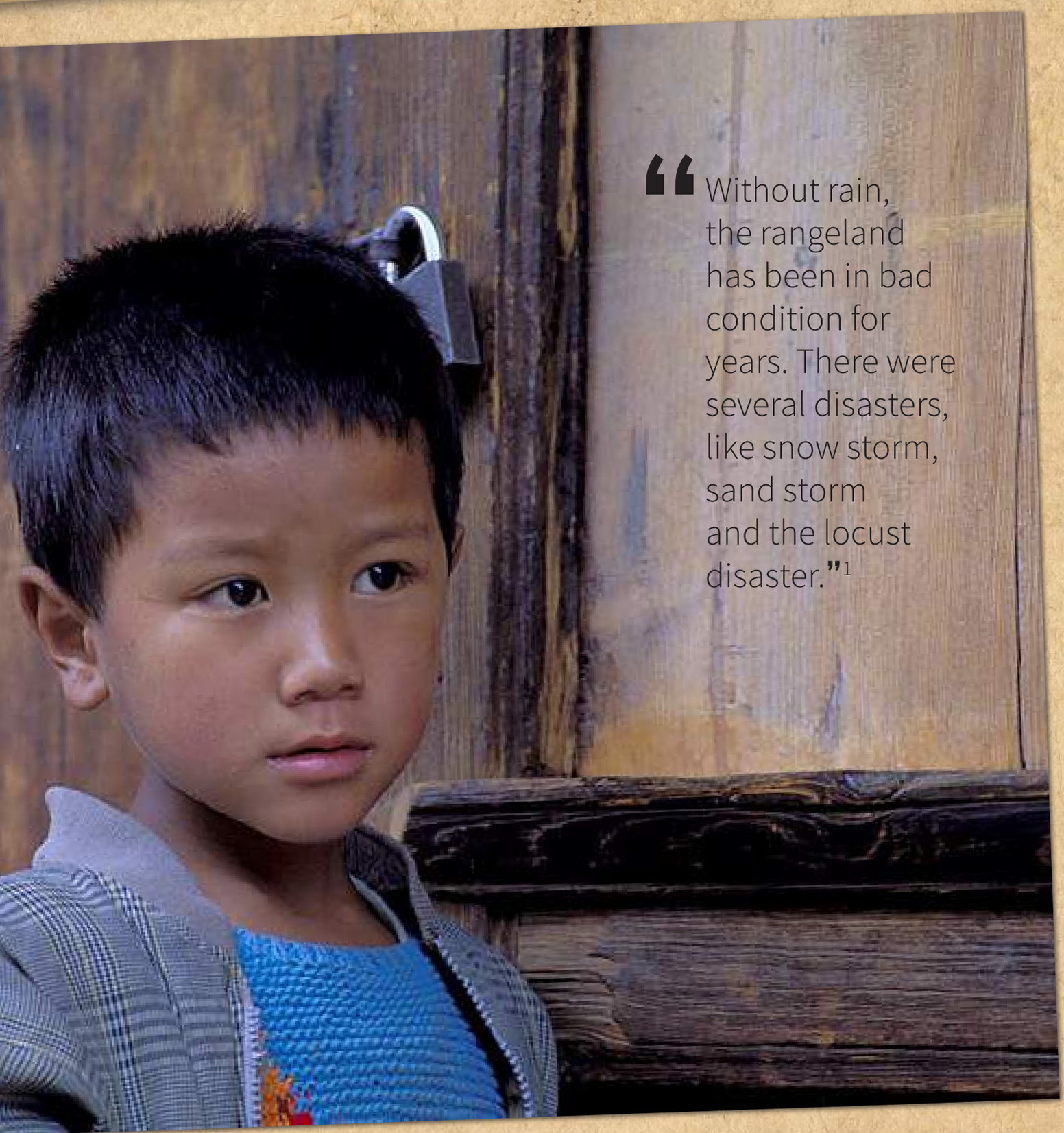
A number of significant climatic changes have taken place in the Arctic: air temperatures over extensive land areas have increased, sea ice has thinned and declined, Atlantic water flowing into the Arctic has warmed, and terrestrial permafrost and Eurasian spring snow has decreased.[4] These environmental changes have a global impact as less solar radiation is reflected away from the the surface of the earth causing more heat to be absorbed and more snow and ice to melt, leading to rising sea levels.[5] Changes to freshwater and marine systems and fisheries are already being experienced within the region, particularly by indigenous Arctic communities.

Climate change has become an additional emerging force impacting on the mobility of indigenous Arctic peoples in a number of ways. Changes in habitat are altering the way in which people forage and hunt. Altered weather patterns are changing the usual animal herding patterns, as people are forced to move with their herds in order to continue hunting.[6] Traditional hunting routes are also changing or disappearing as thinner winter ice means crossing rivers and lakes becomes harder or impossible. Many indigenous Arctic communities depend on barges for supplies, but increased numbers of storms and the melting of a layer of protective sea ice has caused many barge landing sites to become unusable due to erosion. In a number of cases this has forced people to find new barge sites. However, in one notable case the disappearance of barge sites and other coastal erosion resulted in the village of Newtok facing relocation.

Climate change may also result in new industry and activity in Arctic regions, which will have implications for the movement of indigenous people. As ice thins and melts new opportunities for fossil fuel extraction and mining emerge. This could mean that Arctic people move in order to find work in these new operations, and that people from other areas will increasingly move into the Arctic. However it is unclear what impact these new operations will have on the culture, health and wellbeing of indigenous people: “Any economic advantage that might trickle down to the Inuit cannot compensate for the hugely negative effects of climate change on their health and well-being.”[7] Further, the fact that the melting Arctic has created an opportunity for more fossil fuel extraction is deeply and tragically ironic.

1 Kelman, I. (2012). Many Strong Voices. Available: Many Strong Voices. [Accessed 25 July 2013].
2 Backgrounder - Apology for Inuit High Arctic Relocation. Aboriginal Affairs and Northern Development Canada. http://www.aadnc-aandc.gc.ca/eng/1100100015426/1100100015427
3 Nuykina, Elena. Resettlement from the Russian North: an analysis of state-induced relocation policy. Arctic Centre Reports 55.
4 IPCC, 2007: Climate Change 2007: Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Contributions of Working Group II, Climate Change 2007, Impacts, Adaption and Vulnerability, Chapter 15, 15.1.1, p 656.
5 IPCC, 2007: Climate Change 2007: Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Page 656, Chapter 15, Polar Regions, Arctic and Antarctic.
6 Ferris, B (2013). A Complex Constellation: Displacement, Climate Change and Arctic Peoples: Brookings-LSE Project on Internal Displacement.
7 Indigenous peoples global summit on climate change, 2009.

China



"Without rain, the rangeland has been in bad condition for years. There were several disasters, like snow storm, sand storm and the locust disaster."[1]

“The rangeland has become worse than before but the main reason is drought, not overgrazing. If we have a heavy rain before August – just one is enough – the rangeland will be good and we will have a good harvest year.”[1]

“The rangeland is not in good condition. It has been like this since 1997 because of lack of rainfall. It was worst in 2000. Afterwards, in 2002 and 2003, there was continuous drought and a locust disaster. Small puddles have also not been seen for more than ten years.”[1]

“The ecological system here has changed a lot. The climate has changed a lot. The activities of human beings and animals definitely have some impact on the system but they are not determinant. The system has changed by itself.”[1]

Context

In recent years China has experienced significant changes to its climate. Overall there has been an increase in cyclonic activity, a greater number of short duration heat waves, more episodes of flooding, drought, and an increase in dust storms. Northwest and western China have seen an increase in mean annual temperature and an increase in annual rainfall. Annual rainfall has decreased in some parts of the north and northwest whilst extreme rains have been more prevalent in western and southern parts. Northeast China has experienced flooding whilst areas including inner Mongolia and Heibei province have been more drought prone.[2]

Since June 2011 nearly 3 million people have been internally displaced in China by disasters. A series of severe earthquakes, storms and floods caused this displacement.[3] While China demonstrated a "stunningly agile" response to these disasters there are still gaps in its approach to disaster risk reduction, which could have prevented some of the displacement.[4]

In March 2009 drought hit in the southwest of China (an area the size of Europe); 20 million people were forced to go looking for drinking water. In 2011 drought on the Yangtze threatened the drinking water of 3.5 million people,[4] a drought which was followed by torrential flooding that displaced 45,000.[5] Between 2004 and 2007 drought resulted in direct economic losses of $24 billion. Scenario studies have linked climate change with the increased drought and flooding; however, currently the key driver of water scarcity is growing demand. A recent report

identifies Beijing as in a state of emergency due to overcrowding: water resources are an eighth (119 m^2 per capita) of the water stress threshold (1000 m^2 per capita), and a quarter of the 'absolute' scarcity threshold.[6]

Some evidence indicates that the rural-urban migratory trend is reinforced by the desire of rural people to avoid hot weather shocks.[7] Desertification and the government's response to it has caused migration and displacement. Worsening conditions have caused people to abandon farming and move into cities.[8] In 2009 there were 145 million rural-urban migrants.[9] Often migrants are excluded from statistical data, meaning that a hidden class of urban poor is emerging in China.[10] The authorities have begun to label begging as crime as it is becoming so prevalent in urban areas.[11] At the same time temporary migration is becoming less common, with only 20% of migrant workers stating a preference to return home.[11]

Movement linked to climate change must be seen in the context of these other massive migratory trends affecting China. Rapid economic growth has led to an increase in movement both internally and internationally. Roughly 35 million Chinese people are estimated to be working overseas. Similar economic drivers have created large scale rural to urban movements: 230 million people have move from countryside to cities. However other forces have also restricted this movement. Hukou – or household registration – has restricted even internal movement in the past, and still does. Rules are now gradually being relaxed.[12] However, rural-urban migrants are still often denied basic services because of their Hukou status.[13]

1 Zhang, Q (2009). EACH-FOR Environmental Change and Forced Migration Scenarios. China and Inner Mongolia Case Study. Stockholm: EACH-FOR. 17.
2 M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds) (2007). Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press, Chapter 10.
3 Internal Displacement Monitoring Centre (IDMC), China: More than 2.96 million displaced by natural disasters over the first half of 2011, 29 July 2011, available at: http://www.unhcr.org/refworld/docid/4e38e5dd2.html
4 Zhang, Q., Y. Kobayashi, M. Howell Alipalo, and Y. Zheng. Drying up: What to do about droughts in the People's Republic of China, with a case study from Guiyang Municipality, Guizhou Province. Mandaluyong City, Philippines: Asian Development Bank, 2012.
5 Philips, J. "Flooding and Drought Along China's Yangtze River" The Epoch Times, English Edition June 7, 2011.
6 Xiao, F. "Beijing and Surrounding Areas Reel From Too Many People" The Epoch Times, English Edition April 9, 2013.
7 Zhou, J. "Climate Change, Health and Migration in Urban China." Frontiers of Economics in China 6.4 (2011): 592 – 615.
8 Zhang, Q (2009). EACH-FOR Environmental Change and Forced Migration Scenarios. China and Inner Mongolia Case Study. Stockholm: EACH-FOR.
9 Skeldon, R . "Country Profiles. China: An Emerging Destination for Economic Migration" Migration Policy Institute. MPI, May 2011. Web. 19 August 2013.
10 Park, A; Wang, D. Migration and Urban Poverty and Inequality in China. Bonn: Institute for the Study of Labor, 2010.
11 Kochha, G, 2008. China's urban poor: and expanding social stratum. 1st ed. Nottingham: University of Nottingham, China Policy Institute.
12 Taylor, G, 2011. China's Floating Migrants: Updates from the 2005 1% Population Sample Survey. Migration Studies Unit Working Papers, 2011/07.
13 Pai, H, 2012. China's rural migrant workers deserve more respect from the city-dwellers. The Guardian, 25 August.

The Horn of Africa

"And since there was the war, we did not receive any support from the government. Therefore, there are combined factors that made us suffer: droughts and war. If war did not exist, then we might have been able to stay, but now that the land is looted, there is no way for us to claim it."

Elderly farmer from Somalia, interviewed at Nakivale Settlement, Uganda[1]

“Because of severe drought, my family and I moved permanently to the river some distance away. But this was difficult because of fighting going on in that area, and eventually we moved because of it.”

Lau woman from Sudan, Fugnido Camp, Ethiopia[1]

Context

Since 2010 a combination of drought and conflict has affected over 13 million in the Horn of Africa.[2] A number of forces have shaped the patterns of movement and displacement connected with this crisis. High international food prices have severely affected the highly import-dependent countries in the region, especially Djibouti and Somalia. Warnings were issued in 2010 when the region experienced its driest season in 60 years, associated with a strong La Niña event.[3] Recent research has shown that the drought was made more likely by climate change.[4] With over 80% of the region's population dependent on agriculture for their livelihood, this had devastating effects. The region has also experienced two decades of political violence including interstate wars, civil conflicts and one-sided violence involving the massacring of civilians.[5]

The crisis has caused displacement on a massive scale. At one point 1,400 people a day were seeking refuge in Dadaab complex of camps in Kenya.[6] Over 1 million people have been displaced from Somalia into neighboring countries.[7] The Dadaab refugee camp in Kenya is now the biggest in the world, containing nearly half a million people.

Interviews conducted with people displaced during this crisis show that changing weather patterns interact with other factors such as conflict and lack of government support to create an ongoing displacement situation.[8]

Many people interviewed in the refugee camps describe being displaced several times in quick succession, with different factors affecting each movement. Many who were dependant on agriculture for their livelihoods

describe moving within their own country as changing weather patterns, drought and water stress made farming impossible. Their movement in turn would often lead to several further displacements resulting from conflict over scarce resources or further environmental degradation. Only in extreme cases, and most often as a response to violence or the threat of violence, do displaced people cross an international border.

Many interviewees recognised shifts in weather patterns that go beyond the usual 'bouts' of bad weather. Others identify a more permanent shift in weather, predominantly through its striking effect on agriculture. Many of those interviewed across the region describe moving in response to environmental change as a last resort. Smallholders often try a range of adaptation strategies in response to worsening environmental conditions. These often include crop switching, storing and transporting water and looking for non-farm work in order to diversify income.

Several people interviewed pointed to social, political and economic factors that made adapting to changing weather patterns harder or impossible. For example, a number of people stated that repression, violence and state failure made adapting impossible and this led to their initial displacement.

1 Tamer Afifi, Radha Govil, Patrick Sakdapolrak, Koko Warner (2012). Climate change, vulnerability and human mobility: Perspectives of refugees from the East and Horn of Africa. Bonn: University of the United Nations Institute for Environment and Human Security.
2 World Food Programme. (2013). Horn of Africa Crisis. Available: http://www.wfp.org/crisis/horn-of-africa. [Accessed 25 July 2013].
3 Funk, C. (2011). We thought trouble was coming. Nature. 476 (7)Available online: http://www.nature.com/news/2011/110803/full/476007a.html
4 Lott, F. C., N. Christidis, and P. A. Stott (2013), Can the 2011 East African drought be attributed to human-induced climate change?, Geophys. Res. Lett., 40, 1177–1181. Abstract online at: http://onlinelibrary.wiley.com/doi/10.1002/grl.50235/abstract;jsessionid=01DD0FAB88A19AE8E7EB3148EC74C870.d04t01
5 University of Upsala. (2012). Conflict Encyclopedia, North Africa. Available: http://www.ucdp.uu.se/gpdatabase/gpregions.php?regionSelect=1-Northern%20Africa. [Accessed 25 July 2013].
6 Food and Agriculture Organization of the United Nations. (2013). Crisis in the Horn of Africa. Available: http://www.fao.org/crisis/horn-africa/frequently-asked-questions/en/. [Accessed 25 July 2013].
7 Care International. (2012). Dadaab Refugee Camps Update on the Crisis in the Horn of Africa. Available: http://www.care.org/careswork/emergencies/dadaab/. [Accessed 25 July 2013].
8 Tamer Afifi, Radha Govil, Patrick Sakdapolrak, Koko Warner (2012). Climate change, vulnerability and human mobility: Perspectives of refugees from the East and Horn of Africa. Bonn: University of the United Nations Institute for Environment and Human Security.

Ganges-Brahmaputra Delta

“Climate change has wrecked everything; our people are living in other towns and cities, like refugees. All I wanted was to grow old with my children and their children. But now they are gone and I don’t think they will ever return.”

Shamisur Gazi, 83, Chakbara, Bangladesh[1]

"The sea water is rising every day … We lost everything. We are not happy, because we must move again. Climate change is making thousands of people homeless."

Nurul Hashem, Schoolteacher, Bangladesh[2]

"God knows how long this village will last. If it gets worse I will have to go to the mainland. We know the end is coming."

Jakir Hossain, Fisherman, Bangladesh[2]

"The land here used to be 1 km out to sea … We lost mosques, a school, shops, farms. We are scared of the sea now. Gradually it comes closer to our homes. When we sleep, we are scared. Every year the tide rises more and comes in further. Next year this village may not exist."

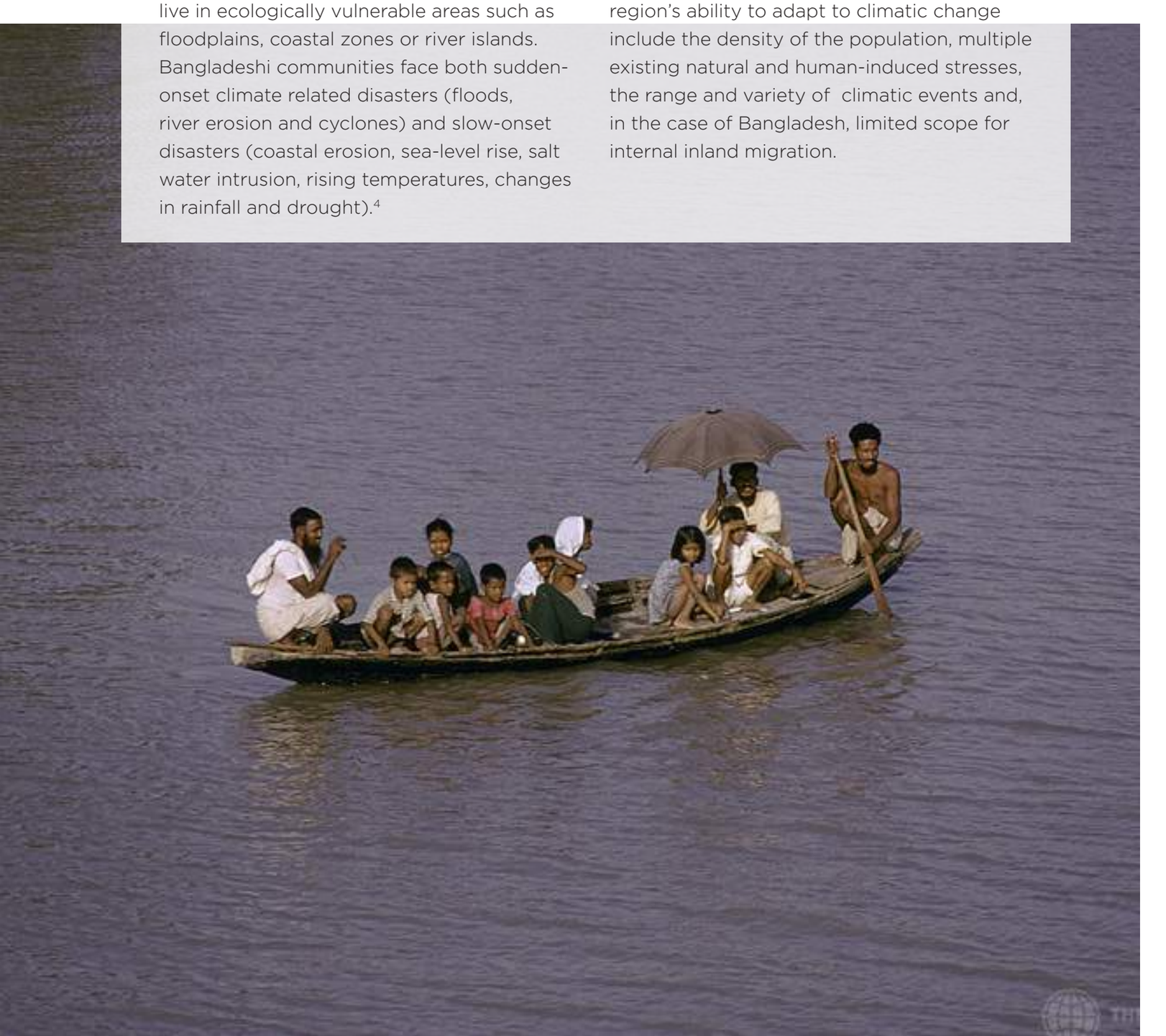
Mohamed Rashed, Qumira Char, Bangladesh[2]

Context

Within this region climate change is predicted to increase the frequency and intensity of disasters such as the rise in sea level (resulting in the loss and salinisation of land), storm surges, cyclones and typhoons, riparian flooding, and water stress.[3] In India, large populations already live in areas vulnerable to flooding and by 2050 it is anticipated that 1.4 billion Indians will be living in areas experiencing the negative effects of climate change.[3] Several highly populated mega cities of South Asia – Dhaka in Bangladesh, Kolkata, Mumbai, and Chennai in India – are especially vulnerable to a rise in sea level.[3] In Bangladesh more than 50 million people live in poverty and many of these live in ecologically vulnerable areas such as floodplains, coastal zones or river islands. Bangladeshi communities face both sudden-onset climate related disasters (floods, river erosion and cyclones) and slow-onset disasters (coastal erosion, sea-level rise, salt water intrusion, rising temperatures, changes in rainfall and drought).[4]

Recent disasters in South Asia demonstrate what could be a more frequent reality for the region. Floods in September 2012 displaced 1.5 million people in the northeastern state of Assam, India while Cyclone Alia, in 2009, displaced 2.3 million people in India and almost 850,000 in Bangladesh.[5] Extreme climatic events have placed greater stress on health services, agricultural production and water resources.[6]

The region is identified as a 'hotspot' whereby greater exposure and sensitivity to climate change is combined with limited adaptive capacity, causing the former to have a more exaggerated impact.[6] Factors that restrict the region's ability to adapt to climatic change include the density of the population, multiple existing natural and human-induced stresses, the range and variety of climatic events and, in the case of Bangladesh, limited scope for internal inland migration.



This mega-delta has traditionally experienced significant flows of internal and international migration. Whilst there are many drivers of migration, it is clear that slow- and rapid-onset disasters continue to affect migratory patterns, although predicting the extent of the impact is a difficult.[7] For decades, Indian and Bangladeshi communities have been supported by money transfers from workers abroad. The sums involved are vast[8] and in the case of Bangladesh the income received exceeds international aid and foreign investment.[9] The extent to which this important income could be affected is unknown but it could have a devastating effect upon poorer communities who rely upon such remittances.

In Bangladesh most environmentally-induced forced migration, such as by floods and cyclones, is met with local, short-lived internal displacement.[10] Where the majority of people are able to return to their homes quickly the impact is more limited. However, this is not always possible, as was the case after Cyclone Alia. Planning migration in areas where climate change is degrading land could provide a safety net for large swathes of the population in this region, thereby helping to ensure that livelihoods are protected.

1 Aulakh, R, 2013. How bad can climate change get? Bangladesh already knows. The Star (Bangladesh) 09 February.
2 Vidal, J, 2013. Sea change: the Bay of Bengal's vanishing islands. The Guardian (UK), 29 January.
3 Asian Development Bank, 2012. Addressing Climate Change and Migration in Asia and the Pacific. 1st ed. Manila: ADB.
4 Walsham, M, 2010. Assessing the Evidence: Environment, Climate Change and Migration in Bangladesh. 1st ed. Geneva: IOM.
5 Bhattacharyya, A; Werz, M (2012). Climate Change, migration and conflict in South East Asia. Washington: Centre for American Progress.
6 M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds) (2007). Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press, 471.
7 Walsham, M, 2010. Assessing the Evidence: Environment, Climate Change and Migration in Bangladesh. 1st ed. Geneva: IOM, p 24.
8 World Bank. (2012). Developing countries to receive over $400 billion in remittances in 2012, says World Bank report. Available: http://www.worldbank.org/en/news/press-release/2012/11/20/developing-countries-to-receive-over-400-billion-remittances-2012-world-bank-report. [Accessed 19 August 2013].
9 Provost, C. "Migrants' billions put aid in the shade" The Guardian, 30 January 2013.
10 Walsham, M, 2010. Assessing the Evidence: Environment, Climate Change and Migration in Bangladesh. 1st ed. Geneva: IOM p 22.

Indonesia

“Previously the weather change was manageable. Now the weather in recent years has gotten worse. It has become more difficult to sail the sea, especially for those using rowing boats. The sea is not safe for us anymore.”

Betsina Petikotik, Lermatang, Fisherwoman, Tanimbar Island[1]

“I live on the island of Kapoposang in Matiro, Ujung Village, which is in the Spermonde Archipelago, in South Sulawesi. I have been speargun fishing in these waters since I was a child but now I have noticed changes. Parts of the coral are white and algae has started growing on them. If I consider the coral reefs today there are not as many things to catch. There are fewer fish because the reef is broken. I can spend the whole day motoring around, paddling and swimming, I’ll try everything. Sometimes I don’t catch any fish and we’ll go a whole day without eating any. These days, the coral reefs around Kapoposang are degrading. If the reefs continue to degrade then there won’t be any fish here. There won’t be anything left for us to do.”

Samysuddin, Speargun Fisherman, Kapoposang, Indonesia[2]

Context

Situated along the Eurasian and Australian tectonic plates, Indonesia has a long history of environmental disasters such as earthquakes, tsunamis and volcanic eruptions. Sumatra and other parts of the archipelago are affected by both the northeast and southwest monsoon and, as a result, suffer from regular floods and landslides.[3] In addition to these environmental challenges, Indonesia is also experiencing the impacts of climate change. The islands of Java and Sumatra, together with Indonesia's capital, Jakarta, which is home to some 9.6 million people, are low lying, and rising sea levels leave these areas more vulnerable to coastal flooding. A recent report by the Asian Development Bank estimated the numbers of Indonesians at risk of coastal flooding by 2050 will be as high as 20.5 million.[4] Rising temperatures will lead to a deterioration in air quality in Jakarta causing increased respiratory and cardiovascular illnesses.[5] Rainfall changes have led to drought in some provinces, which in turn has reduced agricultural production. Equally, in some regions, rainfall has become excessive: torrential rain across Indonesia in January 2013 caused extreme challenges in Jakarta, where 20,000 were forced out of their homes.[6] This rain is reportedly the heaviest since 2007.[6] In parts of Indonesia deforestation has been widespread, exacerbating the effects of climate change and leaving populations more vulnerable to landslides when disasters strike.[7]

The ability of Indonesia to withstand climatic changes relates as much to the socio-economic vulnerabilities of its population as to the nature and severity of environmental challenges. As the world's fourth most populous nation, Indonesia continues to struggle with poverty and inequality despite significant improvements in the human development index.[8]

Economic progress is uneven across its provinces and some 30 million people still live below the national poverty threshold.[8] In terms of democratic governance, improvements have been seen since the sectarian violence of past years.

In Indonesia there is a long history of responding to economic, social, or environmental adversity through both temporary or permanent migration. Indonesia provides a significant pool of labour migrants, with about 6 million working abroad, particularly in more rapidly growing Asian economies and in the Middle East.[9] Within the country, rural-urban movement, both temporary and permanent, is significant, with western Java a common destination. However, with Jakarta expected to face multiple impacts of climate change in the years ahead, internal migration may shift to other urban areas less at risk, including other islands in the archipelago nation.[9]

1 Oxfam Indonesia. 2010. Betsina Petikotik, A fisherwoman from Lermatang Village. [ONLINE] Available at: http://bit.ly/1d8BRAi. [Accessed 23 August 13].
2 WorldBank. (2007). The World Bank - Climate Change - Indonesia. [Online Video]. 11 December. Available from: http://bit.ly/1ayoeZr. [Accessed 23 August 2013].
3 International Organisation for Migration, 2009. Compendium of IOM's activities in migration, climate change and the environment. 1st ed. Geneva: IOM, p 204.
4 Asian Development Bank, 2012. Addressing Climate Change and Migration in Asia and the Pacific. 1st ed. Manila: ADB p 25.
5 M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds) (2007). Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press, p 487.
6 Thomson Reuters Foundation. 2013. Floods paralyse Indonesian capital, heavy rains continue. [ONLINE] Available at: http://bit.ly/178iCSk. [Accessed 23 August 13].
7 International Organisation for Migration, 2009. Compendium of IOM's activities in migration, climate change and the environment. 1st ed. Geneva: IOM.
8 United Nations Development Programme in Indonesia, 2012. Annual report 2011 / 2012. 1st ed. Jakarta: UNDP.
9 Asian Development Bank, 2012. Addressing Climate Change and Migration in Asia and the Pacific. 1st ed. Manila: ADB p 22.

We don't have all the answers. But we hope the Moving Stories project helps us to ask better questions about how this issue is addressed.

How can moving become an empowering way for some people to adapt to climate change? What is the role of remittances in building resilience to climate change? Will our existing legal frameworks for protecting the rights of people who move be up to the job in a generation's time? These are all unanswered questions.

The Moving Stories project and our other work in this area is designed to help everyone consider these questions. If the voices of affected communities are absent from the debate, we have no hope of finding solutions for the people who need them most.

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