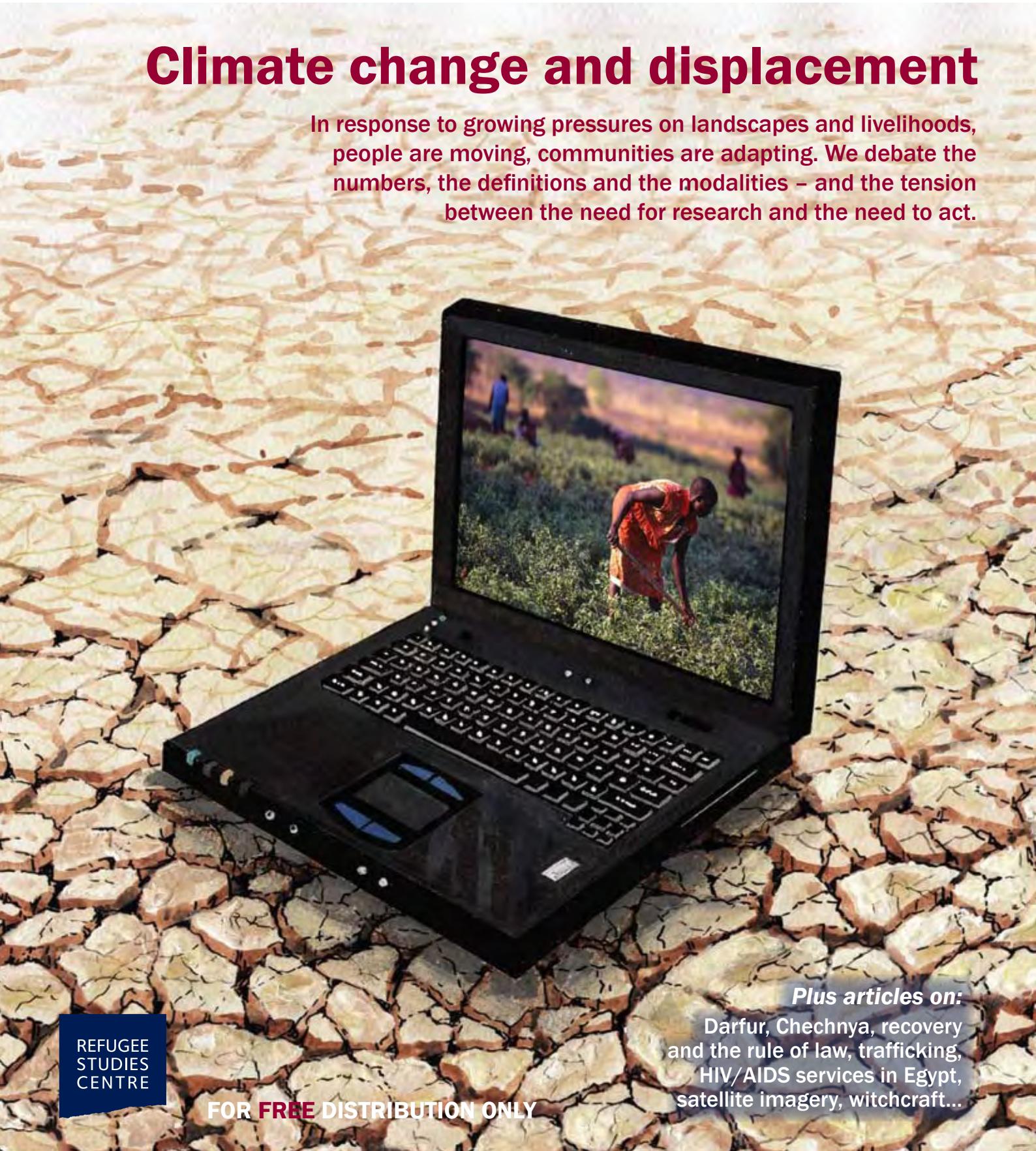
FORCED MIGRATION review

Issue 31
October 2008

Climate change and displacement

In response to growing pressures on landscapes and livelihoods, people are moving, communities are adapting. We debate the numbers, the definitions and the modalities – and the tension between the need for research and the need to act.



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Forced Migration Review
Forced Migration Review (FMR) provides a forum for the regular exchange of practical experience, information and ideas between researchers, refugees and internally displaced people, and those who work with them. It is published in English, Arabic, Spanish and French by the Refugee Studies Centre, University of Oxford. FMR was launched in 1998 in partnership with the Norwegian Refugee Council.

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from the editors of

FORCED MIGRATION review

In his article on page 47 of this issue, Craig Johnstone, Deputy High Commissioner of UNHCR, says that "Our generation has failed to live up to its obligations to prevent climate change. We need urgently to prepare now for the human consequences of climate change." One of those consequences is the displacement of people from their homes, whether temporarily or permanently. Researchers and politicians may argue about the numbers likely to be forced to move but all concur about the need for preparation, adaptation, mitigation – and collaboration. We hope that all readers will be challenged, inspired and informed by the articles in this FMR.

This issue is online at www.fmreview.org/climatechange.htm. If you would like to receive multiple copies for distribution to partners or for use in training, please contact us at fmr@qeh.ox.ac.uk. We will need your full postal address and an indication of how many copies (in which language/s) you require.

We are very grateful to Andrew Morton of UNEP and Scott Leckie of Displacement Solutions for working with us as special advisors on this issue. We would also like to thank the following agencies for their generous funding and support: the United Nations Environment Programme, the Swiss Federal Department of Foreign Affairs, GTZ/German Federal Ministry for Economic Co-operation and Development, the UN Office for the Coordination of Humanitarian Affairs and the International Centre for Migration, Health and Development.

We also wish to take this opportunity to thank all those who have contributed funds to support FMR during 2008. FMR is wholly dependent on external funding and we are deeply appreciative of both your financial support and your enthusiastic collaboration. (Please see page 79 for a list of FMR donors.) If you have ideas for themes for future FMR issues that your agency or department might be willing to support financially, please do contact the Editors.

Website relaunch

With this issue of FMR we are relaunching the FMR website. We hope you find the new website – still at www.fmreview.org – easier to navigate and more informative. We will also shortly be putting online an index of FMR articles, searchable by country and theme.

Readership survey

A short questionnaire is enclosed for those of you who are regular readers of FMR. Please share with us your views about FMR and how we might improve it. We would be extremely grateful if you would take a few minutes to complete it and post it back to us by the end of November. Alternatively you can complete it online at www.fmreview.org/2008survey.htm. Thank you!

With best wishes.

Marion Couldrey & Maurice Herson
Editors

Forthcoming issues

- October 2008: a 12-page supplement in Arabic and English on Islam, human rights and displacement. To request a copy, please email fmr@qeh.ox.ac.uk
- December 2008: a 32-page special issue on the 10th Anniversary of the Guiding Principles, in English, Arabic, French and Spanish. This will be posted to all regular readers of FMR.
- January 2009: FMR32 with feature on statelessness: see www.fmreview.org/statelessness.htm.
- May 2009: FMR33 with feature on protracted displacement situations. The call for articles is at www.fmreview.org/protracted.htm. Deadline for submission of articles is 19 January.

… and we welcome your suggestions for future themes for FMR.

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Foreword

Achim Steiner

Human migration, forced or otherwise, will undoubtedly be one of the most significant consequences of environmental degradation and climate change in decades to come. Many experts argue that large numbers of people are already on the move, with millions more expected to follow as evidence of climate change mounts.

The Intergovernmental Panel on Climate Change and UNEP's Global Environment Outlook have recently delivered sobering assessments of the physical and environmental impacts of climate change. For example, sea-level rise and unsustainable human development are contributing to the loss of coastal wetlands and mangroves and increased damage from coastal flooding. Millions of people are projected to be flooded annually by the 2080s due to sea-level rise. Densely-populated and low-lying areas where adaptive capacity is relatively low and which already face other challenges, such as tropical storms, are especially at risk.

Current knowledge about the social consequences we should expect from these processes is still quite sparse. Targeted research and assessment are of course essential to achieve a better understanding of the issue but we cannot afford to wait. It is critical that we start immediately to translate existing knowledge into humanitarian policies and practices.

In this context, UNEP, the International Organization for Migration, the UN University and other international organisations have formed the Migration and Environment Alliance. This Alliance will provide a forum and catalyst for new projects and ideas related to environment-driven migration to advance an integrated and coordinated approach to this challenging cross-sectoral issue.

Sound environmental management and climate change adaptation can help mitigate the causes of migration. Equally, early action and planning mean that the environmental migration processes already under way can be better managed.

Achim Steiner is UN Under-Secretary General and Executive Director, United Nations Environment Programme (UNEP, www.unep.org). For further information, please contact Andrew Morton at andrew.morton@unep.org

The need for collaboration

John Holmes

The global demand for humanitarian assistance, which is already considerable, is likely to grow in the coming decade, and to see a major increase in our lifetimes. The biggest single cause will be climate change and the increased incidence and severity of extreme weather events associated with it.

Indeed, we are beginning to feel the effects. What we are already witnessing is not an aberration but rather a 'curtain raiser' on the future. These events are what I call the 'new normal'. The number of recorded disasters has doubled from approximately 200 to over 400 per year over the past two decades. Nine of out every 10 disasters are now climate-related. Last year, my office at the UN issued an unprecedented 15 funding appeals for sudden natural disasters, five more than the previous annual record. 14 of them were climate-related.

Compounding the challenges of climate change are the recent dramatic trends in soaring food and fuel prices, which are poised to have a major impact on hunger and poverty across the world and are having an immediate impact on the cost of humanitarian operations. We have to ask the question: are we properly prepared for this?

We have the means to tackle all these issues, if we have the will. What we need to do above all is to start investing in the concrete, practical risk-reduction measures that can help save lives and livelihoods. It is going to take all of our combined efforts to prepare for and mitigate their effects. To that end, we must build on and develop lasting and substantive partnerships across all nations and sectors.

In an era defined by a changing climate and the ever-present menace of conflict, no single humanitarian agency or set of agencies can cover all humanitarian needs. Only by working together can we further our ability to alleviate suffering, and help to restore a measure of hope and humanity to a world sorely in need of both.

John Holmes is Under-Secretary General for Humanitarian Affairs and Emergency Relief Coordinator. This article is extracted from a speech given at the 2008 Dubai International Humanitarian Aid and Development Conference and Exhibition. The full text is available at www.dihad.org.

Human security policy challenges

Andrew Morton, Philippe Boncour and Frank Laczko

All evidence points towards climate- and environmentally induced migration becoming one of the major policy challenges of this century. Adequate planning for and management of this phenomenon will be critical for human security.

The international community now increasingly recognises that environmental degradation and climate change could potentially result in population displacement on a scale the world is presently ill-equipped to prevent or address in an effective manner. Gradual processes of degradation as well as extreme environmental events can cause migration. Yet current policy responses tend to focus on the impacts of sudden disasters rather than the consequences of longer-term environmental degradation. Moreover, increased migration in itself may contribute to further degradation and vulnerability, even when displacement represents a coping mechanism and survival strategy.

A series of high-profile weather-related disasters and the ominous findings of such studies as the International Panel on Climate Change (IPCC) Fourth Assessment[1] and the Stern Review Report[2] have recently drawn the attention of policymakers and the media alike. To date, however, the issue of environmentally induced migration has remained largely under the radar. Its complexity, definitional issues as to what constitutes an 'environmental migrant' as well as the difficulty of predicting its scale have in some respects worked against building awareness and momentum for practical action.

Environmental migrants are understood to be those individuals, communities and societies who choose, or are forced, to migrate as a result of damaging environmental and climatic factors. This broad and diverse group ranges from people forced to flee disasters such as flooding to impoverished farmers abandoning degraded land and migrating to urban centres in search of alternative livelihoods.


IRIN/Shamsuddin Ahmed

Flooding in Bangladesh, September 2007.

However, work is still ongoing to update and unify the terminology employed in this field.[3] One particular issue of terminology calls for resolution: the use of the term environmental or climate change 'refugee', which is widely employed but raises many objections due to its encroachment on the term commonly used and legally defined in the Refugee Convention of 1951 for the classification of refugees from violence and political intimidation.

A cross-cutting issue

Environmental migration, as with any mass movement of population (especially when it entails international migration), has significant political ramifications in addition to humanitarian and development implications, and is therefore a truly cross-cutting issue requiring proactive intervention. Indeed, environmental issues are among the root causes of human migration and sustainable long-term solutions must take these environmental dimensions into account. The humanitarian community is already critically affected, with a predictable risk that the scale of the problem will soon overwhelm existing capacities and financial resources. Finally, environmentally induced migration is the end result of unsustainable development, and the associated demographic changes will no doubt have a cumulative impact on development priorities.

Key drivers

Poverty, failing ecosystems, vulnerability to natural hazards and gradual climate-driven environmental changes are all linked to environmental migration. The degradation of ecosystems, and/or

demand for resources in excess of available supply, can lead to chronic poverty and hunger, high levels of communicable diseases, conflict and adaptation, or to coping strategies that include temporary or permanent migration.

While natural hazards such as hurricanes and floods can affect entire nations or regions, the most dramatic impacts typically fall disproportionately on the most vulnerable (in terms of location and socio-economic status). In addition, when natural hazards abruptly destroy livelihoods, return, recovery and reintegration are not always possible.

Climate change will significantly affect migration in three distinct ways. First, the effects of warming and drying in some regions will reduce agricultural potential and undermine 'ecosystem services' such as clean water and fertile soil. Second, the increase in extreme weather events – in particular, heavy precipitation and resulting flash or river floods in tropical regions – will affect ever more people and generate mass displacement. Finally, sea-level rise will permanently destroy extensive and highly productive low-lying coastal areas that are home to millions of people who will have to relocate permanently.

Trends and patterns

Academics and international agencies estimate that there are currently several million environmental migrants, and that this number will rise to tens of millions within the next 20 years, or hundreds of millions within the next 50 years. These figures, however, are largely the result of 'educated guesswork', based on extrapolations from scattered case studies and a few highly speculative academic papers. Credible, evidence-based forecasts are needed to raise awareness, analyse impacts and direct corrective action but work has yet to start on targeted research to develop valid estimates of potential migration and to correlate them with climate models and predictions.

At present, the great majority of environmental migrants originate in rural areas of least developed countries. This trend is expected to shift slightly in coming years, as densely populated coastal zones become increasingly affected by sea-level rise and more frequent storms, and mountainous areas are affected by heavy rains and subsequent floods and landslides.

Most environmental migrants move and settle in urban centres within their home countries, with a smaller proportion migrating to neighbouring countries ('South-South migration'). An even smaller fraction migrates long distances to developed countries, contributing to the 'brain drain' phenomenon of skilled migrants. The burden thus falls overwhelmingly on least developed countries, even though it is the South-North international migration that appears most frequently in Western media.

Consequences

Not all consequences of environmentally induced migration are negative. Leaving environmentally degraded and agriculturally unsustainable regions can be seen as a legitimate coping strategy for affected populations. In addition, migration could potentially help slow the process of environmental degradation and allow those who remain in affected communities to adjust their livelihood strategies by changing their agricultural practices or, for instance, shifting to non-agricultural activities.

The main impacts of mass migration, however, are very overwhelmingly negative; they include escalating humanitarian crises, rapid urbanisation and associated slum growth, and stalled development. Furthermore, work to date suggests that migration alone does not solve the main cause of the problem, as degraded regions are not emptied sufficiently to allow environmental recovery or poverty alleviation, and in most cases continue their inexorable decline.

Next steps: the key priorities

Proactive intervention is now essential. Indeed, the international community has so far taken action in an essentially reactive manner, by responding to the frequent humanitarian crises and by (largely unsuccessfully) assisting developing countries to address explosive urban growth and slums. In the absence of successful corrective action, however, the future for many developing countries is likely to be a very difficult combination of widespread land degradation, food insecurity, unmanageable and impoverished mega-cities and large-scale migration.

While more work is needed to identify priority hotspots for intervention, forecasts and information from regions that are already affected provide some indicators. Particularly vulnerable areas include Small Island Developing States, the Sahel belt, the Bay of Bengal, dryland South and Central America, and dryland regions in Central Asia.


EC/ECHO/Beatriz Suso

Both humanitarian and development assistance are clearly needed but as most of the burden falls on least developed countries, ownership at national level is essential.

The following key priorities have been identified as tentative measures for achieving an effective and coordinated international response to the challenges presented by environmentally induced migration:

- gaining a better understanding and recognition of the issue
- mitigating the main causes, specifically through environmental management and climate change adaptation, and ensuring that the migration perspective is not omitted when these strategies are developed
- better managing the environmental migration processes that are already occurring, in particular with a view to enhancing their positive effects on the areas of origin and improving the carrying capacities of these areas
- integrating this issue into existing humanitarian policy practices, guidelines and forecasts
- recognising that early action and planning are critical elements of a comprehensive approach.

Addressing environmentally induced migration is undoubtedly a multi-billion dollar process but, in light of the uncertainty in estimates of numbers of people likely to be affected, it is currently impossible to evaluate this cost with any measure of precision.

It is clear, however, that this issue cannot be addressed through minor changes in the levels of Overseas Development Assistance alone.

Meeting the challenges ahead

As a response to the growing realisation of the complex interdependencies between climate change, environmental degradation and migration, as well as the need for more collaboration and coordination at the regional, international and global levels, the Climate Change, Environment and Migration Alliance (CCEMA) was established in April 2008 in Munich, Germany, by the United Nations University (UNU), the International Organization for Migration (IOM), the United Nations Environment Programme (UNEP) and the Munich Re Foundation (MRF).

CCEMA is a multi-stakeholder global partnership bringing together key international organisations, groups of interested state parties, the private sector, the scientific and professional communities, and representatives of civil society. Its main objective is to mainstream environmental and climate change considerations into migration management policies and practices, and to bring migration issues into global environmental and climate change discourse.

The Alliance will bring together policymakers and practitioners from multiple fields to contribute to a better understanding of the challenges and opportunities this nexus presents. It provides an essential platform for interdisciplinary regional, international and global collaboration and coordination, in order to:

- raise policy and public awareness of the need for concerted action to address the challenges and realise the opportunities presented by the climate change, environmental degradation and migration nexus
- improve our knowledge of the complex relationships between climate change, environmental degradation and migration in terms of cause and consequence, and long-term as well as short-term patterns, through gathering, compiling and making available current information, as well as developing innovative research approaches
- provide a neutral and open forum for policy dialogue to identify and discuss major cross-cutting issues. The Alliance platform will act to strengthen cooperative mechanisms among governments and others
- provide practical support to the most vulnerable countries and population groups through building the capacity of governments and stakeholders to respond effectively to the challenges presented by the climate change, environmental degradation and migration nexus

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1. www.ipcc.ch/ipccreports/assessments-reports.htm
2. www.occ.gov.uk/activities/stern.htm
3. See pp10-11.

Darfur

The numbers game

Oli Brown

Estimates of the potential number of 'climate change migrants' vary hugely. In order to persuade policymakers of the need to act and to provide a sound basis for appropriate responses, there is an urgent need for better analysis, better data and better predictions.

As early as 1990 the Intergovernmental Panel on Climate Change (IPCC)[1] was arguing that the greatest single impact of climate change could be on human migration. So far, the scientific community has focused on establishing the extent and nature of anthropogenic climate change and its impact on our weather systems and coastlines. Much less time and energy, however, have been spent on empirical analysis of the impacts of climate change on human population distribution. Consequently, the figures that analysts have produced to date represent little more than well-educated guesswork. This is unsurprising; the science of climate change is complex enough, even before considering its impact on societies with widely differing resources and varied capacities to adapt to external shocks. To assess the future impact of climate change on complex changing communities is to heap prediction upon prediction, multiplying the potential margin of error.


IRIN/Dulue Mbachu

Flooding of slum housing in the Ebute Metta district of Lagos, Nigeria, September 2007.

Perhaps the best-known estimate for future migration forced by climate was made by Professor Norman Myers of Oxford University. Looking ahead to 2050 he has argued that "when global warming takes hold there could be as many as 200 million people [displaced] by disruptions of monsoon systems and other rainfall regimes, by droughts of unprecedented severity and duration, and by sea-level rise and coastal flooding."[2] This is a daunting figure, a ten-fold increase on today's entire population of documented refugees and IDPs. It would mean that by 2050 one in every 45 people in the world would have been displaced by climate change (from a predicted global population of nine billion people).

Other estimates vary widely in terms of numbers, time frame and causes. In 2005 the UN University's Institute for Environment and Human Security warned that the international community should prepare for 50 million 'environmental refugees' by 2010. The UN Environment Programme (UNEP) argues that by 2060 there could be 50 million 'environmental refugees' in Africa alone. Most apocalyptically, in 2007 Christian Aid suggested that nearly a billion people could be permanently displaced by 2050: 250 million by climate change-related phenomena such as droughts, floods and hurricanes, and 645 million by dams and other development projects.

However, Professor Myers' estimate of 200 million climate migrants by 2050 has become the generally accepted figure and is widely cited. But repetition does not make the figure inherently accurate. Professor Myers himself admits that his estimate, although calculated from the best available (and limited) data, required some "heroic extrapolations". The simple fact is that nobody really knows with any degree of precision what climate change will mean for human population distribution.

We know that climate change will redraw our coastlines, alter where we can grow food, move where and when we can find water, and expose us to fiercer storms or more severe droughts. We know that on current predictions the 'carrying capacity' of large parts of the world – the ability of different ecosystems to provide food, water and shelter for human populations – will be compromised by climate change. Intuitively we know that climate migration is likely to be a serious issue in future. We just don't know how serious. And it is hard to persuade policymakers of its importance without concrete (or at least more sophisticated) figures.

The estimates we have so far are no real foundation for an appropriate response either. The challenge now is to better understand how climate change could affect population distribution and then to develop effective ways to address the possible consequences of forced migration, such as social and economic dislocation, delayed development or conflict. For that we need clearer answers to some key questions: How many people are likely to move as a result of climate change? Where are they likely to come from and go to? How much warning will they have? Will they be able to return?

Better data on any or all of the questions above will help identify the most vulnerable populations, the regions of greatest concern and the potential effects of climate migration on development and stability. Ultimately, better data would move the debate towards the three questions of most relevance to policymakers: Who should be responsible for providing for climate-induced migrants? For how long will they typically need support? And how much will it all cost?

The problem of prediction

Developing more solid predictions will require a lot of hard number-crunching that is only now really starting. Those predictions are complicated by at least four factors:

Disaggregating causality:
Migrants' decisions to leave their homes are influenced by a number of complex factors; deciding causality between economic 'pull' and environmental 'push' is often highly subjective. Disaggregating the role of climate change from other environmental, economic and social factors requires an ambitious analytical step into the dark. In short, deducing cause and effect between climate change and forced migration is very difficult.

Eliminating the statistical 'white noise':
Future climate migration will take place against a background of unprecedented changes in the number and distribution of the world's population. The global population is currently growing at an annual rate of 1.1% and is predicted to peak at 9.075 billion by 2050 (from its 2005 level of 6.54 billion). Meanwhile, there is an accelerating move to urban areas. Already more than half of the world's population lives in urban settings and the growth rate of the urban population is nearly double that of total population growth. Clearly it would be absurd to attribute the entire urban drift to climate change but disaggregating the additional role of climate change on existing rural-urban migration is very hard.

Dealing with the lack of data:
Base-line data for current migration flows in many of the developing countries thought to be most vulnerable to climate change are patchy and incomplete. Nor is there much capacity in developing countries or the international community to gather this kind of data, particularly for internal displacement. Census data rarely include the kind of questions that would give a nuanced understanding of the reasons behind internal population movements. What limited capacity exists is focused on tracking cross-border migration – which only captures a part of the picture, given that the majority of forced climate migrants are likely to stay within their own borders.

Factoring in uncertainty:
Finally, although climate modelling techniques have progressed dramatically over the past decade, we have not yet developed the modelling techniques that even begin to adequately account for the impact of individual choice, the potential for international action and the variability of future emissions and meteorological scenarios.

Towards better data

We need more time, effort and energy to be put towards developing a better understanding of future forced migration. This will require an attempt to develop objective and empirically-based detailed numerical scenarios. To do so we will need to generate more advanced computer models, find better base-line data and build the capacity of institutions and governments to track movements of forced migrants both within and across national boundaries.

Some of this is already underway. UNHCR, for example, attempts to track refugees worldwide, UNFPA (the UN Population Fund) monitors patterns in the growth and location of the world's population, and analysts are investing an unprecedented amount of computer power in modelling the world's climate. We do not need to start from scratch; we can begin by applying existing knowledge and expertise to the specific problem of forced climate migration.

We need to undertake more detailed and nuanced case studies of how, why and where people migrate. We need to understand what that means for the welfare and prospects of the areas they leave, the places they go to and the migrants themselves. We will need to decide how long people should be counted as forced migrants (one year, five years, one generation?) and what their needs are at different stages of the resettlement process. Making sense of it all will require a multi-disciplinary approach that combines perspectives from, at least, sociology, economics, geography, computer modelling and climate science.

What impact climate-induced migration ultimately has on development, security and human well-being depends, of course, on whether 20 or 200 million people are displaced. And if we know what to expect, we can be better prepared.

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1. www.ipcc.ch

2. Myers, Norman, 'Environmental Refugees: An emergent security issue', 13th Economic Forum, May 2005, Prague. www.osce.org/documents/eea/2005/05/14488_en.pdf

Defining 'environmental migration'

Olivia Dun and François Gemenne

There is currently no consensus on definitions in this field of study. The resulting variety of terms is not just confusing but unhelpful.

Terms and concepts such as environmental migration, climate change-induced migration, ecological or environmental refugees, climate change migrants and environmentally-induced forced migrants are found scattered throughout the literature. The main reason for the lack of definition relating to migration caused by environmental degradation or change is linked to the difficulty of isolating environmental factors from other drivers of migration. Another major hindrance lies in the confusion of forced versus voluntary migration. Is environmental migration inherently a form of forced displacement? Can it take the form of voluntary relocation? What about government resettlement schemes in anticipation of or following an environmental disruption? Does the distinction between forced and voluntary matter? These questions impact on typologies of environmental migration and cannot be easily circumvented.

Aside from clear cases where sudden-onset environmental changes such as those resulting from earthquakes or floods lead to forced displacement, the problem is that environmental migration commonly presents itself where there is a slow-onset environmental change or degradation process (such as desertification) affecting people who are directly dependent on the environment for their livelihood and causing them livelihood stress. When environmental degradation is a contributing but not major factor, it becomes questionable whether such migration can be called environmental migration. The increased complexity of current migration patterns also contributes to the difficulty of finding a consensus over definitions.

Since the 1970s, a clear divide has existed between those forecasting waves of 'environmental refugees' and those adopting a more sceptical stance. Generally speaking, the former, who tend to isolate environmental factors as a major driving force of migration, can be described as 'alarmists' and the latter, who tend to insist on the complexity of the migration process, as 'sceptics'. Interestingly, alarmists usually come from disciplines such as environmental, disaster and conflict studies, while sceptics belong almost exclusively to the field of forced migration and refugee studies. Unsurprisingly, reports linking climate change with security issues usually side with alarmists.

Just as most classical theories on migration tend to ignore the environment as a driver of migration, most theories on environmental governance ignore migration flows. Bridging this gap should be the first priority of a research agenda in this field.

Making progress

For academic purposes the interest in developing a definition lies in understanding the factors underlying migration decisions. While this is also of interest and concern to policymakers, they have an additional need to know what rights such a person is afforded. Without a precise definition, practitioners and policymakers are not easily able to establish plans and make targeted progress. Migrants and displaced persons falling within the definition are not clearly recognisable and may thus not receive appropriate assistance. In this sense, while much of the scholarly debate and policy recommendations to date have rightly cautioned against mixing those displaced by environmental causes with those defined as refugees by the 1951 Refugee Convention, there are many helpful elements of the process of defining someone under the 1951 Convention that can contribute to defining people displaced by environmental change.

With respect to the question of environmental migration, the focus to date has been on somehow proving that environmental factors can be a single major cause for displacement and migration. However, it is interesting to note that in determining whether or not someone is a 'Convention refugee' it is not necessary to determine whether or not the reason leading to persecution (political opinion, race, nationality, religion or membership of a particular social group) is the main reason for displacement but whether or not it happened. Once this link is established then the decision maker can grant the person refugee status without considering whether or not the reason was the main cause leading to the persecution. Could/should the same be done for people displaced by environmental factors? Is it enough to prove the causal relationship between environment and displacement or should the causal relationship result in a certain degree of hardship or breach of human rights before there can be some form of long-term international protection?

Conclusion

The need for a definition is a crucial step in the conceptualisation of environmental migration, and the development of policy responses to address these flows. However, two main factors driving the need for a definition could hinder its development.

Firstly, many scholars would like to establish environmental migration as a specific field within migration studies. There is a tendency to fence off this area and consider it apart from classical migration theories, as if environmental migration were of

Returnee refugees building flood protection for Kalota, Kapisa Province, along Panjshir River, Afghanistan.

another kind. More would be gained by trying to integrate environmental factors into existing migration studies.

Secondly, there is a widespread appetite for numbers and forecasts amongst journalists and policymakers. In order to make their research policy-relevant, many feel compelled to provide some estimation of the number of those who are or may become 'environmentally displaced'. These numbers, obviously, need to rely on a clear definition of who is an environmental migrant. Larger definitions draw bigger numbers; there is a tendency to enlarge the definition so as to encompass as many people as possible. However, defining environmental migration too widely would be damaging for those in need of the most protection.

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Drowned in definitions?

Maria Stavropoulou

Refugees or migrants? In need of new forms of legal protection or adequately protected by existing instruments? No obvious or absolute answers.

Some say that those displaced as a result of environmental or climate change are refugees and advocate for the expansion of the definition of a refugee in the 1951 Refugee Convention in order to include them; others call for the adoption of new instruments to provide them with protection similar to that provided for refugees. And then there are those who believe that any notion of the existence of 'environmental refugees' and their need for refugee-like protection is at best exaggerated and at worst politically motivated and dangerous. According to them, such ideas serve only to confuse the traditional concept of a refugee and play into the hands of those – governments – who wish to classify all as economic migrants and thereby avoid their obligation to provide refugee protection.

The fierceness of the debate strongly recalls the one twenty years ago about the existence, definition and need for protection of the internally displaced. In those days, there were those who vehemently opposed the 'creation' of this category of people because they considered it would

provide an excuse to governments to contain them in their own country. Yet the wide acceptance and adoption of the Guiding Principles on Internal Displacement since 1998, and the increasing recognition by governments, UN agencies and NGOs of the needs of the internally displaced, and their competence and obligation to help alleviate some of them, tell a different story: that bringing issues to the surface and giving them a name may serve a good purpose. The internally displaced are no longer invisible. While sceptics may still contend that refugee protection has suffered globally in the last two decades, it remains to be proven that this is due exclusively or primarily to the 'creation' of the IDP category. The concern that refugee protection would be weakened, therefore, does not seem to be a good enough reason for rejecting the notion of 'environmental refugees' outright.

In fear of persecution?

There is nothing inherent in the ordinary meaning of the word 'refugee' that would suggest that people fleeing flooded homes or homes destroyed by an earthquake or forest fire should not be considered as refugees. And it is also hardly contestable that such people should not be sent back to their flooded or destroyed homes unless and until it would be safe for them to do so, from an ethical if not always a legal point of view. However, this is where any similarity with the refugees as defined in the 1951 Refugee Convention ends.

It is widely assumed that the great majority of people who flee natural disasters remain in their own country, and while they may be in need of humanitarian assistance, they do not fear persecution. The paradigm of victims of natural disasters being readily assisted by their governments has its exceptions. Where they find themselves on the other side of an international border, then international obligations of the host country may come into play; indeed many countries would offer some form of protection. Or they may qualify as refugees, in the legal sense, if their own governments are intentionally destroying their environment, are discriminating against them in the provision of assistance and/or are using the consequences of the disaster in ways that amount to persecution for one or more of the reasons of the 1951 Refugee Convention. And, with the advances of technology, people will increasingly expect their governments to take measures to protect them from the effects of disasters and to take measures to minimise their consequences. Conversely, there are many situations of gradual environmental degradation, such as desertification, where people adapt and may eventually migrate, and where the imperative to perceive or treat them as refugees is not obvious. Last but not least, there is a plausible scenario according to which sooner or later some states may disappear altogether, leaving their citizens not only without a home and obliged to seek refuge elsewhere but also stateless. Perhaps this is the most compelling scenario from an international protection perspective.

Inevitably the debate reverts to the original question: Why did a person leave? Human migration rarely has a single cause and it is now well established, theoretically as well as empirically, that voluntary and forced movement are sometimes hard to distinguish. Legally, however, the distinction is important to make. When migration is forced, and when this is combined with absence of protection by one's own state, then international protection considerations arise. And this is the point where theoretical exercises and generalisations come inevitably to a halt. A case-by-case determination of causes and needs is unavoidable in the debate about 'environmental refugees', as it is in the case of all refugees and displaced persons.

The Guiding Principles on Internal Displacement offer a yardstick for considering when displacement (not just internal) becomes a human rights issue of international concern even in the case of causes linked to environmental damage. Guiding Principles 5 to 9[1] describe the parameters of the right not to be arbitrarily displaced. These include guarantees to be observed in case displacement is unavoidable in order to minimise its effects, and the particular obligation of states to protect against displacement of groups with a special dependence on and attachment to their lands.[2]

The need for international protection will be present whenever the principles concerning protection from arbitrary displacement are not respected. In these cases the people of concern will be not just victims of natural disasters but also arbitrarily displaced, either internally displaced or refugees. Defining them further as 'environmental refugees' or 'climate change refugees' appears not to serve any purpose other than raising the profile of the issue. By extension, most 'environmental refugee' situations do not seem to warrant new international legal regimes.

Two areas, however, seem to call for additional legal measures: firstly, the 'disappearing states' scenario[3] and, secondly, a prohibition of deportation of people from countries hit by a natural disaster who are not refugees under the 1951 Convention yet should not be returned for humanitarian reasons.

Conclusion

Even though the term 'environmental refugee' is legally inaccurate, it is more compelling than the term 'environmental migrant' because it evokes a sense of global responsibility and accountability, as well as a sense of urgency for impending disasters. The term 'climate change refugee', on the other hand, seems to be going too far. It will generally be impossible to say whether a degradation in ecosystems leading to displacement has climate change as a major causative factor. What is important is that the debate remains on the right track, namely, that the paramount objective is not a new refugee regime but genuine efforts for better accountability, international cooperation, environmental protection standards and good governance.

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1. Guiding Principles online at www.brookings.edu/projects/idp/gp_page.aspx
2. See article by Sternberg and Chatty, pp25-6
3. See article by Kelman, pp20-1.

Field observations and empirical research

Koko Warner, Olivia Dun and Marc Stal

The Environmental Change and Forced Migration Scenarios (EACH-FOR) project is a systematic attempt to detect the degree to which, and the pathways through which, environmental stressors affect migration.[1]

Today, environmental change including climate change presents a new threat to human security. Faced with an unconceivable scale of environmental change, migration may be an adjustment mechanism of first resort, or a survival mechanism of last resort. Migration may be an adaptation mechanism for those with the resources to move early and far enough away from danger. Or, in extreme cases and for those with fewer means to move, migration may be an expression of failed adaptation. To explore these possibilities, the European Commission sponsored the Environmental Change and Forced Scenarios (EACH-FOR) project to assess the impact of environmental change on migration at the local, national, regional and international level. The project conducted fieldwork in 22 case study locations in six regions[2] of the world to address the following questions:

1. Who is migrating away from situations of environmental degradation/change?

2. Where are environmentally induced migrants coming from and where are they going to?

3. Why have people migrated? (i.e. what role has environmental degradation or change played?)

4. How does environmental degradation interplay with other social, economic and political factors in decisions about migrating?

5. What might prevent people from migrating when they are faced with environmental degradation? (i.e. what assistance was needed, what was lacking?)

6. Why do some people remain in areas of environmental degradation/change while others migrate? (i.e. what are their coping/adaptation strategies and capacities?)

7. How does environmentally induced migration occur? (e.g. choice of destination, networks used)

8. What is the role of people's perception of environmental degradation in triggering them to move?

Flooding and relocation in Mozambique

Extreme weather as a manifestation of climate change is increasingly problematic for the people of Mozambique. In 2001, 2007 and 2008 heavy rains caused flooding along the Zambezi River in central Mozambique. Flooding in 2007 was then exacerbated by the impact of Cyclone Favio. Many people were made homeless. Droughts, coastal soil erosion and rising sea levels – which may be connected to climate change – also affect a large number of people in Mozambique. The river delta regions and the 2,700km-long coastline are at particularly high risk of inundation and erosion.

In Mozambique, environmental stressors (particularly flooding) contribute to migration and displacement. People are displaced during the flood emergency period; following recurring flooding events, people are relocated on a permanent or semi-permanent basis. Along the Zambezi River valley, temporary mass displacement is taking on permanent characteristics. The field research did not detect large-scale international migration resulting from the Zambezi River flooding or significant rural-urban migration patterns for flood-affected groups. Instead, the research revealed that government-organised resettlement programmes dominate the environmentally induced movement pattern for flood-affected areas.

Resettlement removes people from the physical danger of extreme floods but can lead to other environmental, social and economic difficulties. Subsistence farmers and fishers are moved away from fertile lands on riverbanks and to higher, drought-prone areas. Some resettled people attempt to return periodically to work in their fields in low-lying river areas in order to maintain land ownership and their livelihoods as farmers. Resettlement often causes these people to lose their livelihoods, forcing relocated households to depend almost entirely on governmental and international aid. As extreme weather events continue to hit Mozambique, the Government of Mozambique will increasingly face decisions about how to manage people at risk and on the move due to environmental factors.

Complex flooding and displacement in Vietnam

Flooding is a driver of displacement in Vietnam. The country is also prone to water or water-related disasters. A World Bank study released in February 2007 noted that Vietnam is one of the countries which will be most severely impacted by potential sea-level rise.[3] Among the most affected areas will be the Mekong Delta, one of the most densely populated areas on earth.

Fisherman, Hau River, Mekong Delta, Vietnam.

The Mekong Delta, as the 'rice bowl' of the country, plays a crucial role in helping Vietnam meet its development goals. Flooding is a regular annual occurrence and is an integral part of the livelihoods of the population living in the area. Given the area's fertility plus various factors relating to territorial expansion and defence, Vietnam has a history of government-initiated (re)settlement and spontaneous migration towards the delta. Currently, however, the Mekong Delta is witnessing a net outflow of migrants, due to a complex blend of economic, social, and environmental factors.

Fieldwork in the Mekong Delta indicates links between flooding and migration/displacement. A questionnaire sample collected from Vietnamese migrants in Cambodia indicated that half of the migrants decided to migrate in part because of environmental problems. The findings illustrate some of the connections between flooding and population movement:

- During the flooding season, people undertake seasonal labour migration and movement towards urban centres to bolster livelihoods.
- People directly dependent on agriculture for their livelihood (usually rice farmers) are particularly vulnerable to environmentally induced migration. Successive flooding events can destroy crops and drive people to migrate in search of alternative livelihoods.
- Migrants and experts noted that human trafficking into neighbouring areas was one (extreme) coping strategy used by families exposed to water-related stresses.
- As part of a flood management and environmental sanitation strategy, the government is currently undertaking planned resettlement of people living in vulnerable zones along river banks.

Conclusions

Environmental factors contribute to migration in the cases observed, particularly through pressures on livelihoods. Environmental factors interact with multiple other drivers to influence migration. If environmental conditions change to the extent that certain regions experience systematic collapse in livelihood chains, then environmentally induced migration could affect a larger number of people than currently observed in initial fieldwork performed by the EACH-FOR project.

Environmentally induced migration occurs when ecological tipping points are exceeded – points in time when environmental pressures mount and so threaten human security that people begin to factor environmental conditions into their migration decisions. What is still unknown is how and to what degree mounting environmental pressures will affect and trigger migration. Neither is it known whether those who migrate first are relatively well off or those with the greatest direct dependence on the quality of the environment. Empirical research is needed to establish the degree to which migration is a coping mechanism and how migration helps households to secure desired standards of living.

Environmentally induced migration has profound policy relevance for

Central Asia

CASE STUDY

François Gemenne and Philip Reuchlin

Three of the 24 EACH-FOR case-studies are in Central Asia – Kazakhstan, Kyrgyzstan and Tajikistan – where environmental challenges are triggering displacement.

The environmental challenges facing Central Asia include the industrial legacies of the former Soviet Union – contaminated land and pollution of soils and rivers. The area is also prone to earthquakes and landslides and it is anticipated that the melting of mountain glaciers will increase the frequency of floods and mudslides. The area has already seen significant changes in water usage. By 1991, for example, the level of the Aral Sea had fallen by about 15 metres, its surface area had been halved and its volume reduced by two-thirds.

Nowhere better exemplifies the inter-twining relationship between environmental degradation, climate change and migration than the Ferghana Valley. The Valley has a complex history, unclear property rights over the land and access to water, a varied ethnic mix and an extensive list of present or potential environmental threats. There are an estimated 10.5 million people living in the Ferghana Valley, and a significant part of this population may potentially be affected by forced migration.

Migration patterns in the Valley involve internal migration, cross-border migration among the three nation-states sharing the Valley and migration out of the Valley into other regions or countries. In the southern provinces of Kyrgyzstan, the population is regularly affected by natural disasters and entire communities are often displaced and in need of resettlement to safer areas. There are also significant population and refugee movements from an increasingly unstable Uzbekistan into the south of Kyrgyzstan.

Border regions between Uzbekistan, Tajikistan and Kyrgyzstan (where most pastures and grazing areas are located) are becoming a place of tension. A shortage of land for newcomers (and subsequent pressure on forests) increases environmental impacts. In addition, about 3,000 earthquakes are registered annually in Kyrgyzstan. Floods and landslides are frequent in the Valley, and their

human security. Climate-related stressors combined with ecosystem change (such as land degradation and water shortages) and rapid-onset events (such as flooding and extreme storms) already drive migration or prompt national governments to plan for the relocation and resettlement of affected populations. Government responses vary from giving incentives to mandating relocation, with mixed results. Resettlement programmes also have their costs and benefits: people are moved away from physical exposure to hazards but may faced increased debt and loss of livelihoods after resettlement.

Recommendations

- build a strong scientific basis: research is needed to accurately identify, measure and characterise environmentally induced migrants.
- increase awareness: knowledge about environmental degradation and climate change can arm governments, migrants and potential migrants against human security crises. Awareness can help avoid maladaptation.
- improve legal frameworks at the regional and multilateral level: policy and legal frameworks need to address environmentally induced migration.
- ensure adequate and appropriate humanitarian response to avoid escalating crises
- strengthen institutions and policies: the magnitude of future environmentally induced migration depends in part on longer-term environmental and development policies. Institutions must be strengthened so that they can appropriately manage migration linked to environmental change.[4]

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1. EACH-FOR is a two-year scoping project funded through the European Commission's 6th Framework Programme: www.each-for.eu. The UN University – Institute for Environment and Human Security (UNU-EHS) is one of seven partners in the project.

2. See www.each-for.eu/index.php?module=field_research. For methodology, see Afifi and Warner *The Impact of Environmental Degradation on Migration Flows across Countries* Working Paper No. 5/2008. UNU-EHS, Bonn. www.ehs.unu.edu/article:476?menu=94.

3. Dasgupta S, Laplante B, Meisner C, Wheeler D and Jianping Y, *The impact of sea level rise on developing countries: a comparative analysis*, World Bank, February 2007: www.worldbank.org/reference/

4. These recommendations follow those discussed in Renaud, Bogardi, Dun and Warner (2007), *Control, Adapt or Flee? How to face Environmental Migration?* InterSecTions No. 5/2007. UNU-EHS, Bonn.

Kyrgyz Valley.

frequency is expected to increase as a result of climate change.

There is an urgent need to:

- secure better data in order to better analyse linkages between environment, migration, economics and security; this will require increased transparency from governmental agencies, harmonisation across countries and an increase in data-collection capacities.
- develop resettlement programmes for areas where public health and livelihoods are at risk
- reduce human vulnerability – i.e. adequately address the needs of victims of slow and fast natural disasters, uphold human rights and provide economic opportunities to settle and integrate elsewhere.
- forecast future flows: this is vital to help governments prioritise scarce budgetary resources.

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Ghana

CASE STUDY

Kees van der Geest and Richard de Jeu

Migration from northern Ghana is a strategy for dealing with structural environmental scarcity rather than degradation.

One of the problems in migration-environment studies is the difficulty of establishing causal relations. In an EACH-FOR case study survey among 203 internal migrants from north-west Ghana, the vast majority mentioned environmental reasons for leaving their homes.[1] The respondents – settler farmers living in rural areas of Brong Ahafo Region in Central Ghana – said they decided to migrate because of scarcity of fertile land, unreliable rainfall, low crop yields and/or food security problems. A minority mentioned non-environmental reasons for migrating – lack of non-farm income opportunities, family conflicts, witchcraft, cattle theft and the desire to be free and independent.

The survey findings indicate that this group of migrants indeed experienced a degree of environmental push. However, such findings are not enough to adequately assess the environment-migration link. For example, respondents with low levels of formal education and poor access to information will not mention certain underlying causes of migration. Complex explanations of migration will be hard to distil from this type of interviews whereas the environment easily becomes part of local discourses on migration because farmers experience environmental conditions every day.

Northern Ghana.

If the environment is an important factor in explaining migration from the West African interior savanna to the moister forest and coastal zones, one could reasonably expect the propensity to migrate to be higher a) in environmentally less well-endowed areas and b) in times of increased environmental scarcity. To test these two hypotheses, we carried out a cross-sectional and a longitudinal analysis of migration and natural resources.

Results

In examining the geographic relation between out-migration propensities and different indicators of scarcity of natural resources, we looked at four indicators of natural resources scarcity: rainfall, vegetation, rural population density and soil suitability for agriculture. Our results indicated that, firstly, as expected, there was a strong inverse relationship between precipitation and out-migration. Districts that receive less rainfall tend to experience more out-migration. Secondly, again as expected, there was an inverse relationship between the propensity to migrate and the amount of vegetation. However, the relation is not as strong as with rainfall.

Thirdly, again as expected, densely populated districts tend to have higher out-migration rates. High rural population density causes scarcity of land for farming, one of the prime motives for migrating mentioned by our survey respondents. Fourthly, contrary to what one would expect, districts with more land suitable for agriculture experienced more out-migration. Our explanation is that areas with good soils have historically attracted human settlement and are the most densely populated. Land scarcity and reduced soil fertility now push people off the land.

If environmental degradation is a prime driver of migration, then one would have expected to see an increase in migration at the time of the great Sahelian droughts of the 1970s and 1980s. Surprisingly, this was rather a period of reduced out-migration from northern Ghana. The 1970s and 1980s were also a time of widespread economic crisis, political instability and high food prices in southern Ghana. The adverse conditions in the South made many decide to refrain from migrating. In those years, many migrants also returned to the North. The late 1980s and 1990s were a time of environmental recovery in the North and political stability and economic growth in the South. In this period, North-South migration increased again. Hence, political and economic forces seem to have more influence than environmental push on migration flows.

Conclusions

The analyses show that migration propensities are higher in districts with more natural resource scarcity and that migration did not increase in times of environmental stress in the source areas of migration, due to adverse economic conditions in the prime destination area.

The picture that emerges for northern Ghana is not one of distress migration in the face of environmental disaster. The environmental driver of migration from northern Ghana appears to be structural scarcity rather than degradation.

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1. Full results are available at www.each-for.eu or www.keesvandergeest.nl See also: Van der Geest K. (2004). *"We are managing!" Climate Change and Livelihood Vulnerability in Northwest Ghana.* Leiden: Afrika-Studie Centrum.

Gaps in IDP protection

Khalid Koser

Gaps in protection still remain for those people displaced by climate change within their own countries.

The normative framework for people displaced by the effects of climate change inside their own country is better developed than that for people displaced outside their country. Many of the former are IDPs and their rights protected by human rights law and international humanitarian law as articulated in the Guiding Principles on Internal Displacement,[1] whereas few of the latter qualify for refugee status and international law does not currently protect their status in other countries.

While a priority is therefore to define the rights of people displaced outside their country by the effects of climate change, the prospect of growing numbers of people displaced internally should also be a catalyst to address gaps and implementation challenges in the normative framework that applies to them. The rights of the majority of the 25 million people already internally displaced by conflict and the many millions more displaced by natural disasters and development projects are currently poorly protected. The effects of climate change will inevitably increase their number and further test protection in law and practice.

Some of those moving as a result of the effects of climate change – for example, as a result of a general deterioration in living conditions because of regular flooding – will challenge the current distinction between voluntary and forced migration and may find themselves without protection. And in contrast to those displaced by conflict, many of those displaced by the consequences of climate change may never be able to return home because their places of origin have been destroyed or inundated. New approaches to durable solutions will be needed.

This may be the time to engage – or in some cases re-engage – in some of the debates surrounding the protection of the rights of IDPs.

One debate concerns the definition of internally displaced persons, a descriptive rather than legal definition provided in the Guiding Principles. Some commentators have argued that the description is too broad to be operational, covering as it does a wide spectrum of causes of internal displacement including conflict, natural disasters and development projects. On the other hand, the effects of climate change may result in internal displacement that does not clearly fit even this broad definition – for example, those moving pre-emptively or whose movement is triggered by economic factors. While these people would be protected by human rights law, the Guiding Principles would not apply. Is it appropriate to distinguish them from other internally displaced persons? Is there reason to suppose that they will be any less vulnerable than other IDPs?

Even though the laws and norms articulated in the Guiding Principles are derived from binding conventions, treaties and agreements, the Guiding Principles themselves are not binding. A second debate which may be worth revisiting is whether it is time to negotiate a binding convention. There are sound reasons not to. Negotiating a convention is a time-consuming process; there is unlikely to be significant consensus around a convention that ultimately concerns an issue of state sovereignty; even binding conventions sometimes have little impact in reality; and the Guiding Principles are increasingly being incorporated into national laws and policies, despite their non-binding character. At the same time, a draft AU Convention for the Protection and Assistance of Internally Displaced Persons in Africa may signal a new direction, at least at the regional level. Not only would it be binding upon signatories but it also increases the scope of the protection found in the Guiding Principles (for example, to include persons displaced as a result of a lack of development) and provides the AU with the right to intervene in member states in order to protect displaced persons.

While the development of a raft of national laws and policies addressing internal displacement is an important step, there still remains an implementation gap, in most cases because of a lack of capacity and in some notorious situations because of a lack of political will. How to plug this implementation gap remains an important debate to resolve. Once again, displacement caused by climate change may extend this implementation gap. For example, while it may be possible to plan for and mitigate the effects of slow-onset hazards associated with climate change, it is much harder to predict and prevent the effects of rapid-onset hazards.

Finally, perhaps the fundamental debate that underlies the protection of IDPs today and in the future is how to realise in practice the responsibility to protect. The tremendous and unnecessary suffering that resulted from the reluctance of the Burmese government to cooperate and the unwillingness of the international community to intervene after Cyclone Nargis is a clear reminder of the political challenges that need to be overcome to protect the rights of the internally displaced, whatever the cause of their displacement.

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1. Guiding Principles online at www.brookings.edu/projects/idp/gp_page.aspx

Human rights implications

Scott Leckie

An integrated approach to climate change demands that human rights and adaptation strategies are pursued hand-in-hand.

Taking a human rights approach to climate change, grounded in the principle of the inherent dignity of the human person, implies that it is not only the total numbers of those displaced that matter. Every single person who is forced from their home, against their will, must have a remedy available to them which respects their rights, protects their rights and, if necessary, fulfils their rights as recognised under international human rights law.

Discussing post-tsunami reconstruction in Tagaule, one of three submerged villages on Nias Island, Indonesia.

The rights found within the international human rights legal code which are particularly relevant to the discussion of climate change-induced displacement include the right to adequate housing and rights in housing; the right to security of tenure; the right not to be arbitrarily evicted; the right to land and rights in land; the right to property and the peaceful enjoyment of possessions; the right to privacy and respect for the home; the right to security of the person, freedom of movement and choice of residence; and housing, land and property (HLP) restitution and/or compensation following forced displacement. All of these entitlements and obligations are in order that people everywhere are able to live safely and securely on a piece of land, to reside within an adequate and affordable home with access to all basic services and to feel safe in the knowledge that these rights will be fully respected, protected and fulfilled.

Indeed, the normative framework enshrining these rights is considerable, constantly evolving and ever expanding. A very considerable body of international human rights laws and standards exists which can be used by governments to build the legal, policy and institutional frameworks required to ensure that any rights related to climate change, particularly those related to durable solutions to displacement, are fully respected, protected and fulfilled. However, when we look at the performance of states and the international community over the past 60 years of the human rights experiment and when we listen to the voices of the millions of rights-holders throughout the world who remain as far as ever from enjoying their legitimate HLP rights, it is clear that solving the HLP consequences of climate change will be a far from simple task.

Consulting with community leaders on building plans to ensure that houses to be built will fit the villagers' way of life. Aceh, Indonesia, 2005.

Millions upon millions of people have lost their homes and lands due to conflict or because of investor greed, poorly planned development and natural disasters such as earthquakes, floods and tsunamis. Sadly, far too few have seen either their rights respected or benefitted from a slow, gradual improvement in their housing and living conditions once the circumstances leading to their displacement have ended or altered. This should be a reminder for us to prioritise human rights-based strategies to address the displacement dimensions of climate change. The track record of most countries in treating victims of displacement as rights-holders, in particular HLP rights-holders, is very poor.

In many disaster settings, those who have been displaced return home once conditions permit and quickly begin the long and difficult task of rebuilding their former lives. In other cases, the displaced are arbitrarily and/or unlawfully prevented from returning to and recovering their homes. They may be relocated involuntarily to resettlement sites despite their wishes to return home. Thousands of those displaced in Sri Lanka and Aceh following the 2004 Asian tsunami are still physically prevented from returning home, despite their clear wishes to do so. While considerable efforts have been made to address displacement and return in the context of conflict, only recently have practitioners begun to explore the vital links between displacement, natural and environmental disasters and durable solutions to displacement, all within a rights-based framework.

HLP good practice

A number of important lessons appear to be increasingly recognised by those working in post-disaster contexts. For instance, best practice indicates that all displaced persons should have the right to voluntary return without discrimination,

to the homes from which they were displaced. In situ re-housing efforts have proven to be the most efficient and effective means of providing relief to victims in other post-disaster settings. International standards now support the rights of disaster-affected populations to return to and recover their former homes and lands should they so wish. Those involved in facilitating such return need to work to:

- remove any discriminatory inheritance and property ownership laws that may prevent the equitable transfer of property to survivors, particularly women and girls, and ensure that women and girls do not suffer direct or indirect discrimination as a result of the relief and reconstruction efforts
- ensure that all reconstruction efforts take fully into account the needs of especially vulnerable or marginalised groups including ethnic minorities, children, the elderly, the disabled, the chronically ill and households headed by single parents or children
- avoid the active prevention of return and land-grabbing by public officials or criminal networks
- ensure properly resourced and well-coordinated housing/shelter provision programmes
- encourage full community participation in the reconstruction process
- help local authorities to realise that housing reconstruction can often be the most long-term element of any recovery process and to plan accordingly.

Fortunately there is greater understanding that relocation or resettlement should only occur as a last resort, and only after all possible alternatives have been thoroughly explored. When resettlement is the only option available and all other avenues have been considered, there is growing acceptance of the principle that permanent relocation should never result in homelessness and that alternative accommodation, which complies with international human rights standards on adequate housing, should be provided to everyone as a matter of rights.

However, climate change-induced displacement is likely to present new and greater challenges. The impact and consequences of permanent, non-reversible displacement caused by climate change and rising sea levels have yet to be fully grasped by states and their peoples. Already, island groups such as the Carteret Islands, Tokelau and Vanuatu have begun to permanently resettle people because of land lost to rising seas and salinisation of fresh water supplies. Clearly, these and other cases are only the small beginnings of what is predicted to be the largest global mass migration in human history.

Short-term policy responses, of course, would be similar to those already in place following many conflicts and disasters, and consist largely of shelter programmes, forced migrant camps and settlements, and other short-term measures. Long-term policy responses should be grounded more comprehensively within an HLP rights framework, involving remedies such as the provision of alternative homes and lands, compensation and access to new livelihoods, based – one would hope – on lessons learned about permanent resettlement from previous efforts around the world.

Conclusions

Given the challenges presented by current and future climate change-induced displacement, there is a pressing need to:

- develop adequate domestic institutional frameworks: in February 2008, for example, local councils in Australia were instructed to carry out comprehensive climate change planning exercises in all communities threatened by inundation. This and other such examples could act as good models for other nations wishing to successfully mitigate and adapt to the climate changes ahead.
- develop adequate international institutional frameworks: states and UNHCR need to systematically examine the implications of incorporating these issues into both their legal mandate and their day-to-day operations.
- facilitate the evolution of international law: changing the 1951 Convention might not work but a new Protocol to the Convention may well yield results. One important outcome of the expanded attention to the human rights implications of climate change could be the adoption of a new international standard on these issues. Such a standard, or perhaps even a composite group of standards which together would constitute international principles on the relationship of climate change and human rights, could be of considerable assistance to national governments seeking guidance on addressing these challenges.
- augment the Global Adaptation Fund: established during the Bali meetings in 2007, this Fund faces a shortfall of at least US$9.75 billion. Now is not the time for the wealthy world to be stingy.
- develop rights-based measures of land expropriation and invest in land banking: governments throughout the world should be encouraged to review domestic legislation as it relates to questions of expropriation of land. Climate change-induced displacement will put immense pressure on cities and the slums that surround them. Governments should identify unused land for possible future use to resettle people and their communities should this become necessary.

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Displacement Solutions (DS) manages a Global HLP Rights Expert Registry in order to provide assistance – expertise, tools and human resources – on the full spectrum of housing, land and property rights issues in post-conflict and post-disaster situations. For more information, see www.displacementsolutions.org

Island evacuation

CASE STUDY

Ilan Kelman

Global environmental change is expected to have particular impact on islands around the world.

Islanders from Vanuatu and the Bay of Bengal have already been forced to move as a result of sea-level rise while many island communities in Alaska – in the face of fierce storms and rapid coastal erosion – are contemplating a move inland. Five main climate change-related factors, some interlinked, threaten the viability of living on some islands, especially low-lying atolls: sea-level rise, increased severity and frequency of storms, changes to marine resources, increasing acidity of oceans and changes to freshwater resources.

Sea wall in western Tongatapu, Tonga.

Examples of entire island countries which are threatened by sea-level rise are Kiribati, the Maldives and Tuvalu. Additionally, if ice sheets collapse, much of their land could end up under water. With the expectation of tropical cyclone tracks changing while storms might become more frequent and more severe, islands which had previously experienced few extreme events might have to deal with them more regularly.

Chemical, rather than geomorphological changes, could also reduce low-lying islands' habitability. Oceanic absorption of atmospheric carbon dioxide is leading to ocean acidification,[1] damaging coral reefs which in turn exposes islands to increased wave energy while changing the nature of near-shore fisheries.

For marine resources, the possible impacts are uncertain. In some places, numbers might decline and species might become extinct but many others could migrate. Some islands might gain more plentiful fish or other marine resources, while some could lose the food supply on which they have relied. Similarly, for freshwater resources – often already in limited supply on islands – many places will experience drier conditions; even if more tropical storms bring more water, the damage wrought by them could offset the benefits of increased water supply.

Depending on the exact impacts on specific islands, permanent displacement may be the only viable long-term option. Severe environmental change has led to islander displacement in the past. Approximately 700 years ago, sea-level fall and regional changes in the Pacific climate forced many Pacific islanders to abandon their settlements.

Decision making

If an island community decides that displacement or evacuation of an entire island is an appropriate option, the first decision is the timing of that migration.

Should the evacuation happen as soon as possible, before severe impacts of environmental changes are felt? This would enable migration to be properly planned. Or would it be easier to convince people to go only after a major disaster? Then they risk loss of life and loss of possessions (including cultural/community artefacts). The main disadvantage with long-term planning is that an extreme event could strike at any time. A combination of both solutions could be sought, perhaps planning to leave quickly as soon as an extreme event threatens or strikes.

After the timing of migration has been determined – or left to extreme events to decide – the second decision is where people should go in order to create a new community. Two options exist. They could abandon their identity and their community and integrate elsewhere. The 12,000 Tuvaluans still on Tuvalu, for example, could easily disperse among the millions of Sydney, Tokyo, Los Angeles or other large cities.

Rather than losing a culture, language and identity, however, island communities could instead be re-created. Resettlement on land (especially islands) similar to, but more secure than, their current location would be preferable but might not be feasible because most low-lying areas would suffer similar fates as the islands

being evacuated. As well, many potential island candidates for re-creating island communities are protected as environmental, tourist and/or scientific havens – or are uninhabitable due to their size or resource constraints.

Such resettlement could also require another state to cede territory. For the Pacific region, Australia and New Zealand are usually suggested as the most likely candidates to provide land. Other possibilities could be Indonesia, the Philippines, the Solomon Islands, Vanuatu, the US or Japan. Another option would be to create new land (perhaps through land reclamation) but this would involve legal ramifications – such as delineating the new state's territorial waters.

Sovereignty

Whether existing land or new land is used for resettlement, more decisions have to be made concerning levels of sovereignty or autonomy. Should sovereign states and non-sovereign territories be entirely re-created or should these governance regimes be adjusted? There are different options, including:

- joint access to an island's resources, as is the case of Svalbard in the Arctic
- a level of autonomy involving parallel and complementary justice systems, such as those for indigenous people in Canada and New Zealand
- a level of autonomy involving, for example, parallel currency systems.

Once a governance model is approved by all concerned parties, many practical and ethical questions remain. Who pays for the move and the construction of new communities or new land? How will any territorial or jurisdictional disputes be resolved? How will those to be displaced retain significant control over these aspects? If an island country is entirely evacuated but the islands are submerged only at the highest tides, who owns the fishing rights in the surrounding seas? Could those rights be sold, with oil and other mineral resources potentially being more valuable than fish? If a state is disbanded because of displacement rather than re-created, how do the answers to these questions change?

Security questions also emerge regarding locations where islanders are resettled. Could a country claim a security threat from potential future sovereignty demands if an entire island country population is settled there? Could resettlement be used to reduce enmity and to galvanise international cooperation in solving environmental issues? (Studies in disaster diplomacy that have investigated this last point conclude that such opportunities are usually squandered.[2])

These issues are not unique to islands. Many coastal settlements could suffer similar displacement for similar reasons. Although non-island coastal settlements have an 'inland' to which they can move, some islands also have that option, especially larger hilly islands such as Puerto Rico and Fiji's largest island, Viti Levu. Yet that would still result in significant changes, both for the people who must move and for the people already living 'inland'.

Learning from experience

Island evacuation due to global environmental change may be unique in living memory but island evacuation due to environmental change is not new. There have been many island evacuations, for example, related to volcanic activity. However, there are differences between evacuation because of volcanic activity and evacuation as a result of global environmental change. Most islanders evacuated after a volcano starts erupting expect the evacuation to be temporary; in many cases, they return home even earlier than recommended. For global environmental change, many islands are expected to experience such severe and irreversible changes that return would not be possible for centuries to come. Temporary displacement is very different from leaving one's land, home and identity for ever. We need to learn from mistakes made in the past, especially regarding who makes decisions and who pays.

There is time now to draw on the experience of previous environmentally induced displacement, both island and non-island. Precautionary planning now would be prudent, rather than reacting after it is too late.

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1. www.royalsoc.ac.uk/document.asp?id=3249
2. www.disasterdiplomacy.org

Resources on climate change and displacement

A new Resource Summary on climate change and displacement is now online at: www.forcedmigration.org/browse/thematic/climate-change/

The summary, produced by Forced Migration Online (of the Refugee Studies Centre), provides a selection of key web-based resources plus contact details of many of the organisations working in this field.

Also available is a Research Guide on the same subject, online at: www.forcedmigration.org/guides/fmo046

Social and political contexts of conflict

William A V Clark

It has been, and it will continue to be, difficult to identify any simple or straightforward links between environmentally induced migration and conflict.

Seeking single agent causality tends to hide the fact that environmental resources and impacts are channelled through social, economic and political factors which in turn play a significant role in population migration. Environmental stress is only one factor generating migration; political and social conflict also generate migration and adjustment. These two processes often overlap. However, while environmental scarcity can lead to conflict over competition for resources, there is only limited research that suggests that migration itself leads to conflict.

It is possible to identify regions likely to experience stress arising from a combination of demographic and environmental factors. Environmental stress is likely to be linked to conflict indirectly but significantly and to be greater in poorer nations. The impacts will come directly from declining resources and conflicts over those resources and from the tensions created by populations that are displaced or who move seeking improved life chances in other regions. However, most environmentally-induced conflict will appear in the guise of religious, ethnic or civil conflict.

It is probable that growing populations will result in scarcities of renewable resources at the same time as the amount of high quality agricultural land will decrease, as will the extent of renewable forests. The widespread depletion and degradation of aquifers, rivers and other water resources, either from human-induced stress or from climatic change, have the potential to produce violent conflicts. Environmental stress and acute conflict are most likely in those countries where the institutional capacity for adapting to environmental stresses is weak. These are the nations that are likely to be the most affected by three key conditions generally seen as leading to conflict:

- decreased quality and quantity of renewable resources
- increased population growth and increased per capita consumption
- unequal access to resources across local populations.

When these conditions co-exist, two processes may produce conflict: ecological marginalisation and resource capture. Ecological marginalisation occurs when population growth and unequal access to resources cause people to migrate to regions that are ecologically fragile, such as steep upland slopes or marginal agricultural areas adjacent to deserts. High population densities in these areas, coupled with lack of knowledge and capital to protect local resources, can result in severe environmental damage and eventually endemic poverty. In the Philippines, for example, the government has encouraged the expansion of large-scale lowland agriculture. This has increased the number of landless agricultural labourers, many of whom have migrated to steep and ecologically vulnerable hillsides where they have cleared land to establish subsistence agriculture. Civil dissent has increased in these areas which are largely beyond the effective control of the central government.

Resource capture describes the situation in which there is competition between powerful and less powerful groups for the declining quantity or quality of renewable resources. In Senegal and Mauritania, West Africa, dams were built along the Senegal River in order to regulate river flow, produce hydropower, enable expansion of irrigated agriculture and provide river transport to the ocean. While these may be laudable goals, the outcomes led to increased land values along the river and a struggle between power élites for the control of these lands. The more powerful élites then changed property rights and resource distribution in their own favour, which produced a sudden increase in resource scarcity for the ethnic minority and the expulsion of 20,000 marginalised Mauritanians to Senegal – from where they then launched raids to retrieve expropriated cattle.

Even though these two cases illustrate the potential for conflict resulting from environmental change or environmental stress, the conflicts themselves are embedded in social and political contexts. Environmental changes form the background to tensions in which some other event is a trigger for conflict. Poor countries will in general be more vulnerable to damaging environmental change than rich ones, and poor migrants are more likely to be affected than rich migrants.

The social and political context is immensely broad and complex and includes patterns of land distribution, family and community structure, and economic and legal incentives, including systems of property rights and markets. All of these interact with environmental change, and it is not simply environmental change that leads to conflict. Indeed, environmental conflicts may manifest themselves as political or social tensions, including ethnic and religious conflicts, rather than conflicts over resources per se.

All of the research on the broad issue of human security and the environment must be set within the context of three premises. First, we must recognise that human perceptions of environments, and the way we use environments, are socially, economically and politically constructed. Second, environmental problems must be addressed from a perspective that encompasses both poverty and

inequality. Third, the nation state may not be the appropriate level at which to examine these questions.

Likelihood of conflict

Where environmentally induced migration and conflict might occur is slightly more easily answered than whether it will occur and to what extent. Demographic stress (and possible conflict) can be categorised on a scale from very high risk (where there is a large 'youth bulge', rapid urban growth and low cropland or freshwater availability), high risk (large youth bulge and either rapid urban growth or low cropland/ freshwater availability), low risk (low cropland or fresh water availability) to no risk (none of these factors). This process identifies Africa and, to a lesser extent, the Middle East as primary areas of potential conflict and tension arising from rapid population growth and environmental stress. There are other 'hot spots' in Asia and northern South America.

Conflicts arising from environmental change are much less likely than conflicts generated by religious, ethnic and other rivalries. That said, it is clear that environmental stress in the 'high risk' nations is likely to be a factor in increasing population dislocation and potential conflict.

Twenty-five countries – of which the majority are in Africa – have been identified as falling in the highest risk category of civil conflict in the next two decades, and the likelihood continues to increase over time. All these countries have low cropland availability per person, half of them have fresh water availability problems and all are ranked amongst the poorest nations in the world.

Conclusion

Environmental stress is likely to be linked to conflict indirectly but significantly. Its impacts will come directly from declining resources and conflicts over those resources and from the tensions created by populations that are displaced or who move seeking improved life chances in other regions. However, most of the conflicts will embed environmentally induced conflict under the guise of religious, ethnic or civil conflict. It has been and will continue to be difficult to identify any simple or straightforward links between the environment, environmentally induced migration and conflict.

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Armed men from the Sudan Liberation Movement Army in Gereida town, south Darfur, Sudan, 2006.

Social breakdown in Darfur

CASE STUDY

Scott Edwards

What dangers does climate change pose to societies most vulnerable to changes in local environmental conditions?

Tribes and other groups have been in conflict in Darfur for as long as history records. These conflicts have largely been a function of resource competition, relative deprivation and dwindling subsistence opportunities in the face of rapid population growth. Perhaps it was this history of resource conflict that led the UN Secretary-General to identify climate change as one of the root causes of the Darfur conflict. The effects of climate change on natural systems have been well documented, and humans will inevitably be affected.

The increase in the length of drought cycles in Darfur combined with the southward expansion of the Sahara has amplified the effect of human behaviour on the environment. Small-scale but widespread farming and cattle grazing by the groups in Darfur have accelerated desertification. Environmental degradation in Darfur is not a new process, nor is it even one that has accelerated in any meaningful way in the past ten years. What is it then about environmental change in Darfur that has led to conflict now?

Today's Darfur conflict has an analogue in the 1987 Fur-Arab war which was one of resource competition; as drought and corresponding famine sent the largely Arab pastoralists of North Darfur southward in search of greener pastures, competition with Fur and other farmers was inevitable. Climate change not only forces migration but can also trigger conflict. However, the environmental degradation and corresponding migration in Darfur were not sufficient conditions for conflict. Conflict is rather the result of environmental pressures together with the breakdown of social structures designed to mitigate traditional resource conflict.

In the early 1970s Sudan's President Nimeiri took steps to consolidate power in Khartoum. One such measure was to abolish the tribal-based Native Administration in Darfur that had served as a venue for aggrieved parties to air complaints and build compromises that mitigated

tribal conflict. This action contributed to a cataclysmic breakdown in traditional dispute-reconciliation mechanisms in the region. By the late 80s and early 90s, Khartoum's strategy of dividing groups in Darfur had led to an unmanageable situation that, combined with resource scarcity, had created a situation where – with a history of violent interaction between tribes vying for resources – there were no mechanisms to address the underlying disputes. In 1991, the Zaghawa tribe of Darfur pleaded to President Omar al-Bashir to address the breakdown in the social order, stating: "The Khartoum government has created a major crisis by meddling with the system of native administration."

Destroyed village of Kamungo just east of Kabkabiya town, North Darfur state.

Support to adaptation

There is no doubt that desertification and drought altered the migration patterns of pastoralist tribes into new areas. There is also no doubt that the altered migration patterns, combined with more permanent migration by people in North Darfur looking for viable land for subsistence, led to conflict. The Janjawid militia were almost certainly enticed with promises of viable land belonging to those they would force to flee.

As the climate continues to change, and local environments degrade to such an extent that people feel they must move elsewhere in order to survive, the first step is to address the underlying need for migration. Migration as a result of climate change is less a result of the underlying change than a reflection of the ability of people and communities to adapt. The deployment of programmes designed to maximise environmental resources may mean, for example, the difference between having to migrate in the face of decreased seasonal rainfall, and being able to adapt to short-term cycles made more severe by climate change.

International aid providers should work with states to identify those groups at greatest risk of environmentally forced migration – not just those where conflict is an obvious risk – and develop long-term aid and development programmes to allow people to live in a way that is at least consistent with traditional standards of living without having to migrate.

Just as climate change occurs over long cycles, much of the migration resulting from environmental degradation will occur slowly but consistently over long periods of time. It is these situations that are the most neglected, and arguably the most dangerous types of environmental migration. As in Darfur, changing climate coupled with changing migration patterns threatens to bring groups of people into conflict, potentially creating a cycle of violence and displacement that can easily spread, intensify and exacerbate local environmental conditions. It is easier to integrate hundreds of people displaced as a result of environmental degradation than it is to resettle, return or integrate hundreds of thousands as a result of violent conflict created by inadequate responses to the initial migration.

It is for this reason that special care should also be taken to build up those local social institutions that allow for dialogue and dispute reconciliation where migration patterns make such disputes more likely. The causes of the Darfur crisis can be traced not only to environmental degradation and the overwhelming of local resources but also to social degradation and the inability or unavailability of local dispute reconciliation mechanisms to handle environmentally driven migration. As climate change continues to alter local environments, the international community must be prepared not only to provide the means for communities to develop in order to adapt but also to provide new host communities with the social and political resources to integrate those who have no choice but to find greener pastures elsewhere.

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Mobile indigenous peoples

Troy Sternberg and Dawn Chatty

In 2008 the theme of the UN Permanent Forum on Indigenous Issues (UNPFII[1]) was 'Climate Change, Bio-cultural Diversity and Livelihoods: the stewardship role of indigenous peoples and new challenges'.

Although climate change and the related issue of bio-cultural diversity have been major concerns in the developed and industrialised world, it is only with events like the UNPFII that the threats which climate change pose to the survival of peoples of the developing world are brought to light. Nomadic (mobile) peoples are already deriving their livelihoods from marginal and extreme landscapes; changes in physical and biological resources – and the impacts of increasingly severe weather and climate change – are therefore of particular concern to them.

The 2008 UNPFII session, held in New York, provided a rare opportunity for mobile people to discuss challenges and threats to their environments and livelihoods posed by changing climates and bio-cultural resources. The Standing Committee of the Dana Declaration on Mobile Peoples and Conservation[2] and the Secretariat of the World Alliance of Mobile Indigenous Peoples (WAMIP)[3] sponsored 14 representatives of nomadic and mobile peoples from Gabon, Kenya, Tanzania, Senegal, Iran, India, Jordan, Mongolia and the US to attend the session. They also took part in a special event during the UNPFII meetings to discuss the impact of climate change and extreme weather on the livelihoods and bio-cultural diversity of their particular communities.[4]

At this event they discussed how extreme weather events are jeopardising the viability of their livelihoods and limiting the effectiveness of their traditional adaptive strategies. The issues raised by these 14 representatives were often the same. They included:

- the increase in climate-related physical stressors such as more intense droughts, reduced and unpredictable precipitation, windstorms and increased flooding
- land degradation, limited water supply, reduced vegetation and decreased productivity of pastures
- externally imposed and inappropriate land tenure systems
- reduced migratory routes
- territorial incursion from development and conservation programmes
- alienation from traditional land and resources
- a lack of government understanding or support and difficulty in having input into policy-making
- the increasing marginalisation, sedentarisation and loss of identity, knowledge and customary institutions of mobile indigenous people.

Representatives from Africa stressed that open steppe and range land comprised much of their communities' land and that pastoralism provided a livelihood for millions of people. They made the case that pastoralists' dependence on the environment made them particularly vulnerable to climate change effects such as reduced biodiversity and new livestock diseases. As a result, there is more tribal conflict – often spiralling into cross-border disputes – over decreasing resources and increased settlement as livestock are lost due to physical conditions and loss of ecosystem resilience. The delegates expressed a need for greater dialogue, both locally and internationally. They want government recognition of the importance of such issues, and comprehensive strategies to address water, livestock and communal matters.

Bedouin from Jordan stressed their connection with nature in a desert environment. Their traditional adaptive approaches can no longer cope with all the challenges and they are being forced to seek new livelihoods. Issues such as extremes of temperature, diminished flora and fauna, fewer buffer zones and poor environmental management need to be addressed if mobility and pastoralism are to remain viable options in the region.

The Mongolian pastoralist representatives stressed their concern over the marked warming of the country over the last 30 years. Climate change-induced extremes of temperature are resulting in large-scale livestock mortality and thus

IRIN/Tugela Ridley

Tuareg nomads at an oasis, west of Timbuktu, Mali, 2008.

increased herder poverty. Pasture biomass, number of plant species and vegetation growth have decreased. The resulting poor economic conditions are driving herders from the land in search of alternative income sources such as small-scale mining. High transport costs, lack of government support and limited market organisation for products are all working against sustainability of livelihoods in Mongolia.

This negative picture was reaffirmed in a short documentary film from Iran which highlighted severe droughts – such as have not been seen for 100 years – and strange weather and wind patterns that are drying out wetlands and grasslands. Mobile tribes in Iran are unable to migrate to summer grounds as mist and fog that once nourished pastures have been absent for several years. The Iranian representative stressed that current conditions are more extreme than any in living memory.

The delegate representing India's 100 million mobile indigenous people emphasised the move away from traditional livelihoods among his peoples. Lost access to range and increasing political and economic pressure for pasture land have greatly reduced herd size and thus the viability of livelihoods. With physical change comes social transition, seen in reduced opportunities for women, dispossession and the settlement of pastoralists. This is perceived as the 'new imperialism' brought on by climate change and government disregard for mobile peoples' issues.

The difficulties facing mobile indigenous people were not limited to developing regions. The Navaho member of the delegation from Arizona in the US talked about nature being out of balance in his region. As water sources dry up and traditional ways are lost, fewer than 1% of his tribe continue their mobile lifestyle. Conflicts over water and business in pastoral areas (such as coal mining), reduced land availability and livestock numbers, and warming weather patterns also cast doubt on the viability of pastoralism for future generations of Navaho.

Out of their hands

Nomadic and mobile peoples were traditionally found beyond the boundaries of settled society, using adaptive strategies to encourage environmental resilience and reduce risks. Climate change now challenges these livelihood approaches but the major causes of environmental change lie beyond their lands and their actions.

While the UNPFII event brought together mobile indigenous people to confront these issues, it also highlighted the need for decision-makers – intergovernmental organisations, government officials and corporations – to acknowledge the special needs of mobile peoples. In a formal statement, Mossess Ndiyaine, a Maasai from Tanzania, called for greater awareness of their conditions, support for their concerns, recognition of their rights, strengthening of customary institutions and the active promotion of mobile indigenous peoples' involvement in identifying and addressing the impacts of climate change, both globally and locally.

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2. www.danadeclaration.org
3. www.wamip.org
4. Funded by the International Fund for Agricultural Development.

Water – new challenges

Aidan A Cronin, Dinesh Shrestha and Paul Spiegel

The essential sectors of humanitarian relief will all see major changes in the way that assistance is delivered.

Water is undoubtedly at the heart of the climate change debate. The principal associated effects are all water-related: sea temperature and sea-level rise, increased frequency and intensity of precipitation and flooding, more severe heat-waves and droughts, and increased intensity of tropical cyclones. The other major expected impact of climate change – increased land temperatures – will also have severe ramifications in terms of water resources and quality. The need for clean water and effective sanitation will become even more important as water-related climate change impacts such as flooding and drought begin to affect an increasing number of people.

Those countries that currently have the most severe water shortages and lowest sanitation coverage are most at risk. Of the 47 nations regarded as being either water stressed or water scarce in 2007, 25 are regarded as facing a high risk of armed conflict or political instability as a consequence of climate change.[1]

> According to UN Secretary-General Ban Ki Moon in December 2007: "The consequences for humanity are grave. Water scarcity threatens economic and social gains and is a potent fuel for wars and conflict."

A significant number of the world's population currently exposed to water-related hazards will experience increased problems, and total numbers affected will certainly increase with the effects of climate change. The number of people living in water-stressed river basins is expected to increase from around 1.4 billion in 1995 to between 2.8 and 6.9 billion in 2050. It is estimated that 250 million Africans will suffer increased water stress by 2020.[2] It is also estimated that in developing countries, the incidence of diarrhoea will increase by approximately 5% per °C increase in temperature.[3] These figures all underline the fact that small increases in global risk factors can impact and potentially displace large numbers of people.

In the East and Horn of Africa, refugee-hosting areas – such as Dadaab in north-eastern Kenya and Jijiga in eastern Ethiopia – are sited in semi-arid, water-scarce areas. In recent years these areas have seen significant changes to their climatic patterns, with lower rainfall and hence slower replenishment of underground water levels. This in turn increases the need for improved monitoring and protection of groundwater. The high population density on these vulnerable aquifers will surely pose major water challenges in the future.

Many refugee camps are increasingly subject to recurring water-induced disasters such as floods and landslides, particularly in tropical and semi-tropical regions. Such events have resulted in disruption of services for extended periods of time and in the forced relocation of refugees to safer areas. Furthermore, they not only involve additional costs for rehabilitation of infrastructure facilities and construction of flood protection works but also affect the health and well-being of the refugees during and after these events in addition to the huge social costs on these populations who largely depend on external assistance.

More and more humanitarian actors will have to ask how displaced persons can be hosted and provided for if regional water resources cannot support traditional camps and/or if the camps are subject to frequent and severe water-induced disasters. New and innovative solutions will have to be found to combat the effects of climate change on relief efforts.

Judicious use and protection of water resources must be central not only to mitigation and adaptation measures but also to relief planning. Water will remain a key triggering factor both in the area of flight and in the receiving area. This challenge requires a major rethink on how contingency planning, preparedness measures and emergency response have traditionally been undertaken. Addressing the assistance needs of the displaced in the face of climate change requires a holistic approach that is built on the principles of Integrated Water Resources Management, poverty reduction programmes and national socio-economic development strategies.

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The views expressed are those of the authors and do not necessarily reflect the views of UNHCR or the UN.

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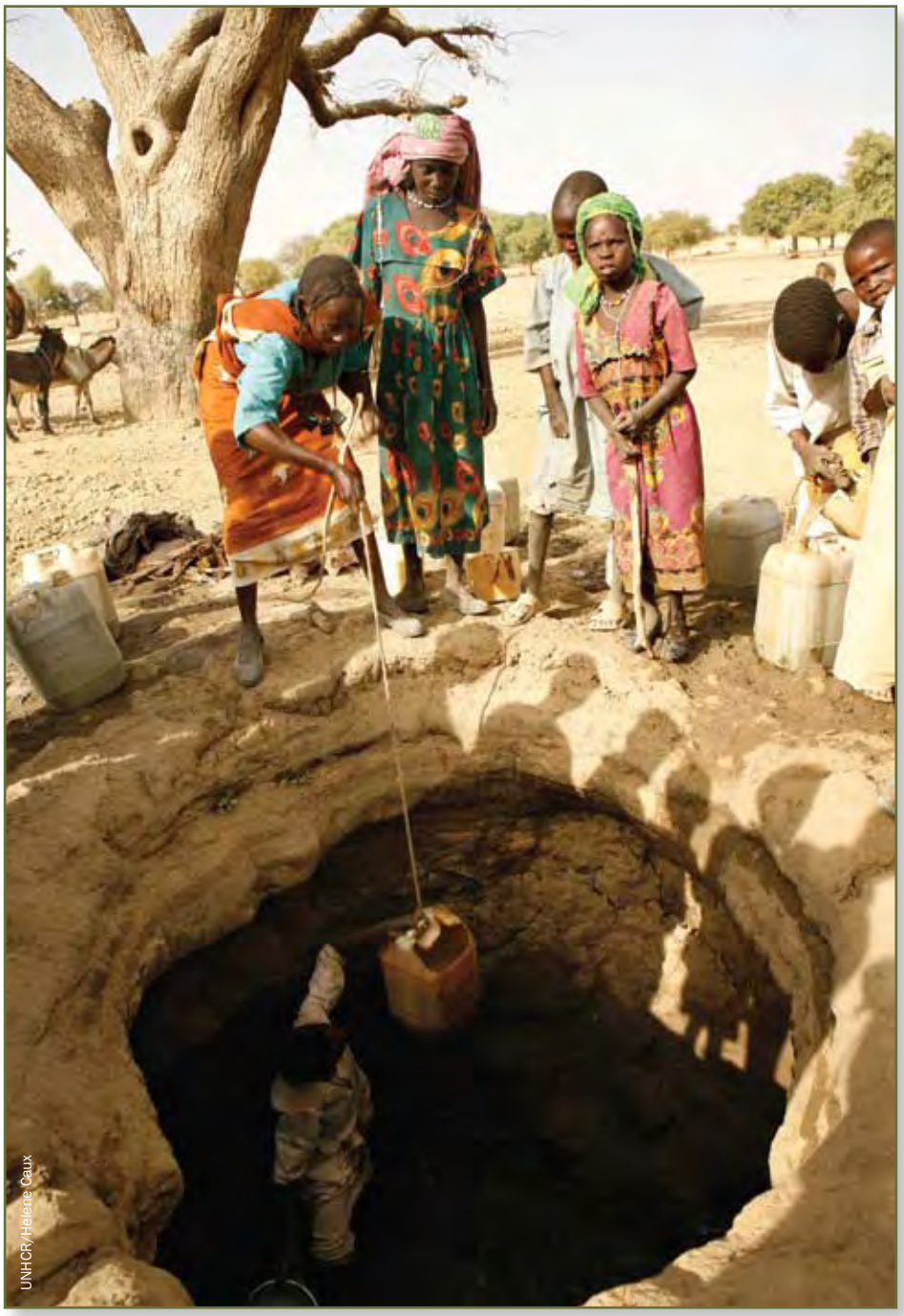

Darfur refugees near Seneit, Birak area, Chad, 2008.

CASE STUDY

Rural-urban migration in Ethiopia

James Morrissey

Environmental change in the highlands of Ethiopia contributes, in a variety of ways, to encouraging migration out of rural areas.

Discussion of the potential for environmental change to drive migration has often assumed migration to be an inevitable outcome of adverse environmental change. While this may be true in the case of permanent inundation due to a rise in sea levels, the link between environmental change and migration in the case of desertification is far less clear. Research in a specific area of the north-eastern Ethiopian highlands[1] shows that environmental change does, in some cases, trigger migration. However, ascribing sole agency to environmental factors is likely to be overly simplistic as it ignores the importance of social factors in mediating the decisions made by individuals whether or not to migrate.

Intensive cultivation, Ethiopia.

Drought is thought to be the environmental stressor of greatest concern in the highlands of Ethiopia. One-off major droughts encourage both temporary-distress migration and permanent migration. Permanent migration is employed as it allows people to escape livelihoods which depend on the availability of water but is also a strategy for managing drought. To this end permanent migration to towns is undertaken by certain members of a household who settle in urban areas so as to attain the capital necessary for the start-up and running costs of equipment (such as irrigation pumps) which will mitigate the impact of increasingly variable rainfall patterns in the highlands to which the rest of their household remains exposed.

Lack of availability of sufficiently productive land is the most common cause of rural-urban migration. Environmental changes put stress on rural livelihoods but it is not sufficient to focus simply on the degree to which environmental change is likely to have an impact on household incomes and thus lead to migration. Stories from the lives of a number of individuals highlight the degree to which factors other than environmental change are important in driving migration.[2]

The first story is that of a migrant who left the countryside because of limited availability and poor productivity of land. Without a means to access sufficiently productive land, he decided to migrate to Weldiya, a nearby town. He did so in the hope of finding work which would allow him to support an independent household of his own. Now twenty-nine years old, he has been living in Weldiya for five years. He currently makes a living weaving baskets and mats which he sells in town. Despite his success in starting his own household he remains disillusioned with his life in Weldiya.

The second story is that of a farmer living in the highland zone on the escarpment who is unwilling to migrate to the urban areas despite acknowledging that environmental conditions in the rural areas are becoming increasingly difficult: He thinks that his household was better off in the past. He also thinks that his land has become less productive as a result of the increasingly erratic nature of the rainfall which, as well as reducing crop production, exposes the soil to erosion by wind and rain, which in turn decreases soil productivity. He thinks that droughts have become worse, with the rainfall becoming increasingly unpredictable and falling at the "wrong time of year". As a response, he says, people have tried planting their crops at different times of year; however, this has not worked and people have had to resort to simply planting crops and hoping for the rains. He has begun selling cattle pre-emptively in an attempt to get better prices. He says that if conditions continue to worsen he will have to find other ways of making money. This, he thinks, will include more trading of beans, maize and timber. In order to raise the capital to make this possible he intends to take a loan from the local credit association.

What is immediately noticeable from these two accounts is that while both cite impoverishing environmental changes, one has been willing to migrate while the other has preferred to change his current livelihood strategy – with varying degrees of success – in an attempt to adapt to the changing environmental conditions. What we see is that household and individual responses to environmental change are conditioned by the degree to which migration constitutes a possible strategy for the individual. This may not seem a particularly insightful finding. It is somewhat obvious to claim that individuals will only undertake migration if it is possible. What is important, however, is to appreciate that structural forces other than environmental change are clearly important in determining the degree to which migration constitutes the major response to environmental change.

One might therefore surmise that as long as one incorporates the major structural force of land availability it might be possible to gauge the degree to which migration will constitute a response to environmental change. However, data from the field present a far more complicated picture. Accounts from migrants show that a great variety of individual factors are also important in determining whether the experience of environmental change will result in migration. The following accounts make this point.

In the face of environmental change, a middle-aged farmer with a large household and no skills is considering migrating to another, more productive rural area. He claims that if farming conditions continue to worsen he will look to migrate somewhere else. He says that his large family size means that he will not be able to migrate to an urban area. He says he would like to migrate to "somewhere productive" but he is not yet sure where that might be.

The fourth story is of a young urban migrant who came to town in order to continue his schooling so that he might escape the precarious agrarian life of his parents in the rural areas. He decided to come to Weldiya in order to continue his schooling in the hope that he might eventually be able to find work in the urban areas. He thinks that the main reason for the poor productivity of the land in the rural areas has to do with the availability of water which he ascribes to the erratic rains which now fall for only two months of the year. He says that he likes the rural areas and would like to go back but feels that this will not be possible unless some form of mechanised irrigation system is put in place which can guarantee water to farmers in the area.

From these accounts it is apparent that a multitude of factors need to operate together before the perception of adverse environmental change translates into migration. While conditions for rural farming appear to provide only a precarious livelihood, the experiences of migrants do not appear to be a great deal easier in the town. While virtually all the farmers who were interviewed described the deteriorating farming conditions in the rural areas, a large number of urban migrants similarly described their disillusionment with their life in Weldiya. Their story was primarily one of struggling to find work and battling the relatively high costs of living.

Individuals have to employ complicated strategies as they try to calculate the relative advantages of moving against the relative advantages of remaining behind. Such strategies might involve weighing up the chances of finding work in town against the possibility that one might come across a good deal on renting land in the rural areas. Access to both land and employment may depend on an individual either having friends or family already resident in the urban areas or having an ageing family member with good land in the rural areas. In a context where neither the rural nor the urban environment offers an absolute panacea for livelihood security, other forces within individual experience become important in determining the impetus to migrate.

In addition to these major structural factors there also appeared to be a myriad of 'idiosyncratic factors' which operate at the level of the individual to determine the degree to which the experience of environmental change manifests itself in migration. This shows the impossibility of providing a grand narrative, or simplistic model, of environmentally induced migration in which farmers experiencing adverse environmental change migrate out of those areas (and livelihoods) affected by environmental deterioration.

The other major structural factor influencing decisions to migrate is the degree to which ethnicity has been politicised in Ethiopia, culminating in ethnic federalism. This policy – where the country is divided up into a number of self-determining, ethnically defined and administrated territories – has left people less willing to migrate into regions administered by ethnic groups other than their own. The degree to which these large structural factors influence migration is clear in the fact that the majority of urban migrants who cited environmental change as a principal factor driving their migration tended to be young, without dependents and migrating within the local region.

Conclusion

Environmental change may very well be capable of forcing migration. It appears, however, that factors other than environmental change will be important in mediating migration and that the majority of these factors will be located in social structures which regulate access to those resources perceived to increase the chance of improving livelihood security post-migration.

Given the likely mix of social and environmental factors that will be required in order to drive migration, we should be wary of focusing too heavily on trying to identify migrants who have migrated solely for environmental reasons. To do so might obscure the fact that large-scale environmental change will, in all likelihood, precipitate large-scale forced migrations which could leave both sending and receiving areas the poorer.

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1. The town of Weldiya and its surrounds, in North Welo province in the Amhara administrative region.

2. These accounts were gathered during fieldwork in the northeastern Ethiopian highlands conducted in the rainy season of 2007.

Alaskan communities' rights and resilience

CASE STUDY

Robin Bronen

Forced migration due to climate change will severely challenge the resilience of communities forced to migrate as well as the capacities of local and national governments.

In Alaska, climate change is evident. Temperatures across the state have increased by between 2 and 3.5 degrees Celsius since 1974, arctic sea ice is decreasing in extent and thickness, wildfires are increasing in size and extent, and permafrost is thawing. These ecological phenomena are creating a humanitarian crisis for the indigenous communities that have inhabited the arctic and boreal forest for millennia. Four Alaskan indigenous communities must relocate immediately and dozens of others are at risk; meanwhile, government agencies are struggling to meet the enormous new needs of these communities.

The communities of Shishmaref, Kivalina, Shaktoolik and Newtok on the west coast of Alaska must relocate. The disappearance of sea-ice and sea-level rise are creating stronger storm surges that are eroding the land on which they are situated. These villages have active subsistence lifestyles and have existed on the coast of Alaska for thousands of years. Environmental studies indicate, however, that a catastrophic climatic event could submerge all communities within the next 15 years. There is no sustainable future for these communities in their present locations – and there is no higher ground to which they can move. Their only alternative is migration but, despite the consensus that these communities must relocate, no government funding has been specifically allocated to begin this process.

Each community is involved in an ad hoc process with state and federal government agencies that are struggling to provide protection to the communities while they grapple with the need to work out a relocation process. Government agencies have responded through their traditional methods of erosion control and flooding prevention but these adaptation strategies have proved ineffective in protecting the communities from a rapidly deteriorating environmental habitat.

The 2006 Alaska Village Erosion Technical Assistance Program – established by the US Congress – evaluated the different costs associated with erosion control versus relocation. It also identified a number of critical governance issues that need to be addressed if relocation occurs, noting that there is currently:

- no government agency with authority to relocate communities

Tony A Weyiouanna Sr, a resident of Shishmaref

- no funding specifically designated for relocation
- no criteria for choosing relocation sites
- no governmental organisation that can address the strategic planning needs of relocation and the logistics of decommissioning the original community location, including hazardous waste clean-up and preservation of cultural sites.

In 2007, the Governor of Alaska created the Alaska Climate Change Sub-Cabinet to implement a climate change strategy for the state. An Immediate Action Workgroup – an advisory group to the Sub-Cabinet – was tasked with identifying the short-term emergency steps that state government needs to take to prevent loss of life and property due to climate change in the communities that must relocate. Both state and federal government representatives co-chair the Workgroup; the multi-level governance structure is unique.

In April 2008, the Workgroup issued its recommendations, in which erosion control and community evacuation plans are central. The Workgroup also recommended that funding be allocated to communities to begin a relocation planning process. In recognition of the complex governance issues identified in the 2006 Alaska Village Erosion Technical Assistance Program report, the Workgroup recommended that one state agency lead the relocation effort and act as the coordinating agency with responsibility of maintaining federal, state and tribal partnerships. The report, however, does not detail the governance structure or jurisdictional authority that will allow the agencies to work together.

> We and our grandfathers have noticed that the water level has been rising, the seasons getting shorter, thinner ice, warmer winters, summers and shorter springs. The loss of land through erosive action and increasing risk to property and lives have caused a dangerous situation for the community of Shishmaref and the culture of its people. The only viable solution is to relocate the community off the island to a nearby mainland location that is accessible to the sea, suitable for the continued subsistence lifestyle of the community, and to preserve the culture and integrity of the community. The constant anxiety caused by the erosion is an excessive burden carried by all members of the community. The 'no action' option for Shishmaref is the annihilation of our community.
>
> Tony A Weyiouanna Sr,
> resident, Shishmaref

Newtok is the most advanced in its relocation efforts, having identified a relocation site and acquired the land through an act of Congress. The state planner facilitating the Workgroup is coordinating the work of the dozens of agencies involved with Newtok's relocation. She has no jurisdiction to require other agencies to join in her relocation efforts but federal and state agencies are working with the Newtok Traditional Council and willingly engaging in the relocation process. However, none of these agencies has a funded mandate to relocate communities endangered by climate change; there is no lead agency to create and coordinate a relocation strategy; and several of the agencies are bound by legal guidelines that throw up serious obstacles. For example, the Alaska Department of Transportation designated with the task of building airstrips and the Alaska Department of Education designated with building schools are unable to move forward with these projects at the relocation sites because regulations require that an existing community with a minimum population be at the site before any infrastructure is built.

The Newtok Traditional Council is a small local tribal government that has only limited capacity to coordinate the relocation work of dozens of federal and state agencies and administer and obtain funding needed for the relocation process.

The humanitarian crisis in Alaska clearly demonstrates the need to create clear principles and guidelines based in human rights doctrine that can serve as a model for other regions. These would help ensure that the social, economic and cultural human rights of individuals and the communities forced to migrate are protected during displacement as well as during resettlement. State and federal governments should be obliged to:

- allow the affected community to be a key player in the relocation process
- ensure culturally and linguistically appropriate mechanisms for participation and consultation
- ensure families and tribes remain together during relocation
- keep socio-cultural institutions intact
- protect subsistence rights and customary communal rights to resources
- safeguard rights to safe and sanitary housing, potable water, education and other basic amenities
- implement sustainable development opportunities as part of the relocation process (and thereby enhance community resilience).

Definition

An accurate definition of this displacement category is essential in order to ensure that the permanent relocation of communities only occurs when there are no other durable solutions. 'Climigration' has been coined as a word to describe this type of displacement. Climigration occurs when a community is no longer sustainable exclusively because of climate-related events and permanent relocation is required to protect people. The critical elements are that climatic events are on-going and repeatedly impact public infrastructure and threaten people's safety so that loss of life is possible.

A definition is also critical so that the design and implementation of institutional frameworks of humanitarian response are appropriate. Agencies that have traditionally provided 'disaster relief' and erosion control, for example, will continue to engage in these activities until it is determined that relocation must occur in order to protect the life and well-being of the community. At this point, the community, along with tribal, state and federal

governments, will shift their focus to create a relocation process.

Failure to recognise the signals of ecosystem changes will critically impede a community's capacity to adapt and may lead to social and economic collapse. Government agencies will also be hampered if they are unable to identify the early ecological warning signals requiring a community to relocate. Early indicators of community vulnerability may include: repetitive loss of community infrastructure; imminent danger; no ability for community expansion; number of evacuation incidents; number of people evacuated; predicted rates of environmental change; repeated failure of disaster mitigation measures; and viability of access to transportation, potable water, communication systems, power and waste disposal. The sooner a community and governmental agencies recognise that relocation must occur, the sooner all-important funding can be diverted from disaster relief to relocation.

In 2006, the Army Corps of Engineers built a new seawall to protect the community of Kivalina. The day after the dedication ceremony, a storm ruined a critical component of the seawall, leaving the community vulnerable and exposed. In 2007, the community was forced to evacuate when a storm threatened the lives of community members. Strategies to temporarily evacuate the villages, rebuild public infrastructure and erosion control structures and then return the population to original locations no longer afford adequate protection. Permanent relocation is the only durable solution for Kivalina, as for other Alaskan indigenous communities. The experiences of these communities should be used to guide the creation both of principles that secure their human rights and an institutional response that ensures their safety.

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Health challenges

Manuel Carballo, Chelsea B Smith and Karen Pettersson

There are no easy solutions to the emerging implications for health of climate change-related migration.

Among the obvious diseases that will plague health planners, health care workers and policymakers in an era of climate change-related migration, some of the most likely diseases are mosquito-borne. Malaria and dengue have always moved with people, and in some countries the circular labour movement of people between the countryside and cities has given birth to new urban reservoirs of both these diseases. Dengue fever in Rio de Janeiro has been linked to rural-urban migration as well as to urban environmental degradation. Even temperate regions – where one would not normally expect to find malaria and dengue – have seen a growing number of cases linked both to tourist travel and to the migration of people from countries where these diseases are prevalent.

Chikungunya fever, which was reported in Italy for the first time in 2007, is now expected to become more frequent elsewhere too. Some of the regions of South-East Asia and Central and South America likely to be most affected by rising sea levels or by more freshwater flooding are areas where malaria, dengue and chikungunya fever are endemic. Population movements from these areas to other parts of the same countries or across borders, where higher temperatures and more humidity might favour mosquitoes, could lead to a significant spread of these diseases.

Changing water distribution patterns in the wake of repeated flooding, together with an increase in temperature and the forced mass movement of people, could also have far-reaching implications for water-related diseases such as schistosomiasis. This already affects an estimated 200 million people around the world and causes high rates of morbidity and mortality.[1] Water development projects in a number of countries have amply demonstrated how easily schistosomiasis can be spread by population movement. Other less obvious means of spread could occur too; in Brazil schistosome-carrying snails have been unwittingly moved from rural to urban communities on fishermen's nets.

Although many of the health implications of climate change-related displacement will probably be felt in 'the South', they will not be unique to developing countries. North America and Europe could well experience further growth in the number of new migrants and refugees and, if so, could see new or more pronounced public health challenges. Most parts of Western Europe have already seen the pattern of new cases of tuberculosis change with increased migration from Eastern Europe and other areas where the prevalence of TB has remained high or even grown with the AIDS epidemic.

The movement of people from poorer parts of Europe and developing countries has similarly increased the prevalence of hepatitis A and B in other European countries where it had become far less problematic. In many parts of Europe, moreover, new cases of HIV and other sexually-transmitted infections are more and more concentrated in and around newcomers from countries where prevention of HIV has been less successful than in most western EU countries. In North America migration has similarly been associated with changing health profiles and challenges. The seasonal movement of

agricultural labourers from Central and South America, for example, where up to 13 million people are living with Chagas disease, has been linked to an estimated 500,000 new infections in parts of the US such as Louisiana, southern Texas and California, where many of these seasonal workers go to find work.

The spread of communicable diseases is not the only health challenge that will result from increased migration. Everywhere there is growing evidence that the processes of (even temporary) migration and re-settlement are drivers of non-communicable diseases such as cardiovascular conditions and Type II diabetes. Not only do people on the move seem to be more at risk of these diseases but their outcomes are also worse than those of non-migrants, a reminder that, for whatever reason, migrants rarely have the same type of access to health care services as non-migrants and often remain on the margins of access to care that could help them.

Psychosocial problems also arise because migration is always stressful. It typically involves breaking family ties, leaving without any assurance of success in finding work and not knowing if and how receiving societies will respond. In many cases the routes migrants take and the ways in which they reach their destinations are fraught with risks to health. In a political climate of resistance and lack of sympathy for newcomers, the trauma of movement could become even more profound and far-reaching than it already is.

Countries everywhere have begun to raise both virtual and real barriers to newcomers, making not only their entry more difficult but also their insertion and eventual integration. Experience has time and again shown that where migrants are less well accommodated, they are likely to be less socio-economically productive and more likely to suffer from a variety of physical and psychosocial problems. These are the same migrants who tend to be directed towards the least attractive areas of cities, to the worst and cheapest housing that is also furthest from essential health care services. The lives they lead and the work they do offer little health security. Earning poor wages and with little job stability, while still struggling to send badly needed remittances home, migrants often fall into a spiral of poor nutrition, weakened health and vulnerability to new diseases.

Conclusion

Preparing for the health implications of climate change-induced migration will require a mapping of the epidemiological profile of the areas that may become 'sending' areas and of those that could become 'receiving' ones. Some people will be forced to move from areas with a history of certain diseases to places where such diseases are uncommon; not only will there be little if any 'herd immunity' but also medical practitioners may be unfamiliar with the symptoms and treatments that are required. Conversely, many other people may be forced to move to areas where they will be exposed to health threats they have not previously had to confront, and for which they have neither preventative nor therapeutic experience. Because many of the regions that will be most affected are located in economically disadvantaged countries where public health resources are already lacking, the health challenges of potentially massive displacement of people from one region to another call for far more attention than has been given to date.

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1. www.who.int/schistosomiasis/en/

Haiti after Hurricane Gustav, 2008.

Pastoralists in Kenya

CASE STUDY

Mohamed Adow

The pastoralist community of northern Kenya has been ravaged by both droughts and floods.

In the past 100 years, Kenya recorded 28 major droughts, four of which occurred in the last ten years. These droughts have had a devastating impact on people's lives and livelihoods. For the three million pastoralists of northern Kenya, climate change is today's reality.

The way of life that has supported them for thousands of years is falling prey to the impact of climate change. It is estimated that close to one million have already been forced to abandon pastoralism.

Along an 800-kilometre stretch of road to Mandera in northern Kenya, a number of new villages have sprung up. These villages are now hosting the very first 'environmental refugees' in northern Kenya whom, in our language, we call 'pastoralist dropouts'. In this region livelihoods today are almost entirely dependent on emergency food aid.

Pastoralists traditionally move from one area to another in search of pasture and in search of water for their livestock. They will move with their livestock in response to drought, so every time there is climatic stress – which manifests itself in failure of the rains – pastoralists will traditionally migrate, following the rains. With the increasing frequency and severity of the droughts, pastoralists' land can no longer sustain them and people have been forced to migrate.

Migration comes now in two forms. Firstly, some completely drop out of the pastoralist lifestyle and system, moving to urban centres to seek casual work or to depend on gifts from relatives – the first line of defence against climate stress. Secondly, many move near to urban centres to seek emergency food aid. These are people who would traditionally have migrated in search of better opportunities – water and pasture – to elsewhere in East and Horn of Africa, particularly to neighbouring Somalia and Ethiopia. But these cross-border avenues are now closed because of the geopolitical situation. People can no longer move where they need to for better opportunities. Their only option is to live on the periphery of urban centres as internally displaced people. Waiting for emergency aid is now their main system of livelihood.

There are certainly many other factors that bring about poverty in the region, that make people vulnerable to these climatic conditions, but the one that is now tipping things over, that is bringing the people's livelihoods to their knees, is climate change.

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Change in Peru

"... the Incas enforced sustainable handling of the forest and applied severe penalties to those that destroyed it. My father told us that he recalls having seen the foothills of the Coropuna snow peak full of woods. Between the trees, water would spring and pasture was always green. Nowadays we see a few woods only, and some of them are very thin.

The problem is that there is no water and the people need money. I try to talk to the people and beg them not to cut trees any more because there is no more green pasture and there are no more springs. The little we have is sacred. The deer and the puma and now the Coropuna snow peak, all those marvels, are leaving us."

Guillermo Escolástico Góngora, Becerra farmer in the forest of Quewiña Huamanmarca in Andaray, Peru

From *Adapting to Climate Change: Practical Perspectives*, GTZ, 2008. Online at www.gtz.de/en/dokumente/en-climate-adaptation.pdf

Thomas J Mueller, SPDA/DED

Thomas J Mueller, SPDA/DED

Disasters and what to do about them

Reid Basher

With the prospect of more extreme weather events, it makes sense to strengthen the efforts of governments and communities to reduce disaster risks.

Poor countries are disproportionately affected by natural hazards, owing to their intrinsically greater vulnerability to hazards and comparatively low capacities for risk reduction measures, while richer countries tend to sustain large economic costs. Over the period 1991-2005, developing and least developed countries suffered 884,845 deaths and $401 billion in economic losses, while OECD countries suffered 61,918 deaths and $715 billion in economic losses. Disasters can disrupt a country's development progress by decimating production and diverting scarce national resources to rebuilding activities, and are thus a threat to the achievement of the Millennium Development Goals. Grenada's losses of $919 million as a result of Hurricane Ivan in 2004 were equal to 2.5 times its GDP. Disasters create social and economic stresses that can result in significant dislocation and migration.

Of great concern is the evidence that the reported numbers of disasters approximately doubled over the last 20 years, and that the reported economic costs grew at an even faster rate. Hurricanes Katrina, Rita and Wilma in 2005 together caused record reported losses of $166 billion. It is tempting to blame climate change, which is already affecting the weather, but of more critical importance is the growing exposure and vulnerability of communities to natural hazards, especially for the poor, and the resulting accumulation of latent disaster risk.

Certainly, the view of the experts is that disaster risks are increasing.[1] More people inhabit risky places and risky dwellings, undertaking large-scale activities that raise risk, like settling on flood plains, storm-exposed coasts and landslide-prone hillsides, and building schools and apartments that will collapse in cyclones or earthquakes. Protective mangroves are cleared for shrimp farms, flood-buffering wetlands are filled for industrial zones, and rainfall-absorbing forests are stripped from steep and unstable hillsides. The increase in disasters can be seen as a red light, a warning of unsustainable development.

The risk of disasters is often neglected until revealed by a major event. Then people are shocked and ask how such devastation could possibly occur. Enquiries are held and public officials are held to account. This is a time when lessons can be learned and advances made. In this technical age, it is assumed that we can engineer our way out of problems but this is often not the solution. The reasons for the inadequate state of the levees protecting New Orleans and for the reportedly disorganised response of the authorities to the accurate and timely warnings about Hurricane Katrina are now being revealed by sober analysis to be essentially social and political in nature. This is a common lesson worldwide. Social factors also strongly differentiate the impacts of disasters. In particular, gender and age are important risk factors, for example with studies showing greater death rates for women in the Indian Ocean tsunami and for elderly people in both the 2003 heatwave in Europe and Hurricane Katrina in 2005.

Climate change is likely to result in more extreme events of the type associated with disasters, such as heatwaves, changes in weather patterns, longer and more intense drought, more intense rainfalls, and more frequent coastal and inland flooding. The most vulnerable areas are the existing areas of vulnerability to hazards: Africa, on account of its rain-fed subsistence agriculture and its generally low risk reduction capacities, the low-lying and heavily populated deltas of Asia and Africa, and the small and low-lying islands.

While the control and reduction of greenhouse gas emissions is a fundamental objective at the centre of the current climate change debate, there also looms the problem of adapting to the inevitable changes that we face as a result of past and ongoing emissions. Adaptation may be an unfamiliar concept but its methods and tools look very similar to those of disaster risk reduction – risk maps, improved zoning of land, enforcement of building codes, safer hospitals and other critical facilities, better early warning systems, accessible insurance schemes, and programmes to enable communities to assess and manage their own risks. There are many examples of disaster risk reduction initiatives that have high benefit-cost ratios and therefore offer no-regrets actions for adaptation.

Action plans and frameworks

In this way, we have a new opportunity to simultaneously reduce disaster risks and adapt to climate change. Happily, climate change negotiators have begun to think along these same lines. The Bali Action Plan's directions for adaptation call for the consideration of: "…risk management and risk reduction strategies, including risk sharing and transfer mechanisms such as insurance; and disaster reduction strategies and means to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change."[2]

This convergence is easier said than done, as the two issues of disaster risk and climate change are usually dealt with as separate policy processes and by different government departments. Ministries responsible for climate change policy, such as ministries of environment, will need to talk with those responsible for disaster risk

reduction, such as ministries of civil protection or the new disaster risk reduction offices that are increasingly being established to tackle the root causes of disasters and to cut national disaster risks. And vice versa: ministries and offices concerned with disaster reduction and response will need to engage with climate change groups in order to prepare for the changes in future risks.

Longstanding concerns about the growing threat of disasters, amplified by the shocks of the Indian Ocean tsunami disaster, led to the formulation of the internationally agreed Hyogo Framework for Action, which aims to jumpstart and guide action over the decade 2005-2015 to achieve "the substantial reduction of losses, in lives and in the social, economic and environmental assets of communities and countries."[3] This landmark document stresses the need to link disaster risk reduction to sustainable development policies and to shift attention towards addressing the root causes of disaster risk, away from the traditional preoccupation with responding to disasters. It specifically identifies the need to promote the integration of risk reduction into strategies for adaptation to climate change, and its subtitle – 'building the resilience of nations and communities' – could equally apply as a motto for adaptation strategies.

Villagers start to reconstruct their houses in the Irrawaddy Delta region of Burma, after Cyclone Nargis.

The Hyogo Framework elaborates five priorities for action, which are based on a careful review of past successes and failures in reducing disaster risks:

- Ensure that disaster risk reduction is a national and local priority with a strong institutional basis for implementation.
- Identify, assess and monitor disaster risks and enhance early warning.
- Use knowledge, innovation and education to build a culture of safety and resilience at all levels.
- Reduce the underlying risk factors.
- Strengthen disaster preparedness for effective response at all levels.

Many individual organisations and inter-governmental mechanisms are now using the Hyogo Framework to structure and guide their own strategies and programmes on disaster risk, for example the Asian Ministerial Conference on Disaster Risk Reduction, the World Bank's Global Facility for Disaster Risk Reduction and Recovery[4] and the World Meteorological Organization[5]. The five priorities offer a strong basis for developing concrete measures both for disaster risk reduction and for adaptation to climate change.

The factors that make us vulnerable to natural hazards are often of our own making, arising from how we exploit the land and how we build our houses and our cities. But we can easily factor disaster risk into our planning and management and make use of readily available knowledge, tools and policy frameworks – particularly the Hyogo Framework – to substantially reduce disaster risks globally. It is now time that we scaled up the level of action to achieve this important goal.

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For more information, please explore the following websites: www.emdat.be, www.un.org/climatechange/, www.ipcc.ch, www.unfccc.int, www.unisdr.org, www.preventionweb.net

1. UN/ISDR, 2007. *Disaster Risk Reduction: Global Review 2007*. See www.preventionweb.net/globalplatform/first-session/docs/session_docs/ISDR_GP_2007_3.pdf
2. unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf#page=3
3. www.unisdr.org/eng/hfa/hfa.htm
4. www.gfdrr.org
5. www.wmo.int

Internal displacement in Nigeria

CASE STUDY

Ujah Oliver Chinedu

Climate change in Nigeria is having a very real impact and needs urgent attention.

Nigeria is experiencing increasing incidence of disease, declining agricultural productivity, increasing number of heatwaves, unreliable or erratic weather patterns, flooding, declining rainfall in already desert-prone areas in the north causing increasing desertification, decreasing food production in central regions, and destruction of livelihoods by rising waters in coastal areas where people depend on fishing and farming. Climate change is making some land uninhabitable and affecting water supplies – threatening people's basic needs and triggering displacement. One of the easiest ways of adapting to climate variability in Nigeria is internal migration.

EM-DAT – the international Emergency Events Database[1] – shows that in 2007 about 5,650 people in Nigeria were displaced by floods, with 34 deaths reported. These floods contaminated unprotected water sources, exposing people to the risk of water-borne diseases, severely damaged crops and disrupted the planting season (which certainly affected the 2007 harvest). Some areas of the country were cut off, preventing more than 5,000 children from attending school and hindering access to health and other social services.

In 1999 and 2000, more than 200,000 people were displaced by floods in Niger State. In 1988, flooding in Kano State displaced more than 300,000 people. About a million people living in the low-lying plains of the River Niger are considered to be at risk. Flooding is recorded every year in all the states along the Niger River and its tributaries, frequently causing disasters. Moreover, two-thirds of Bayelsa State and half of Delta State are inundated by devastating floods for at least a quarter of each year. In districts under water, schools and markets are suspended for weeks at a time.

In the face of global warming there has been a paradigm shift in disaster management towards disaster risk reduction, preparedness and response within the context of the Hyogo Framework for Action (HFA).[2]

Nigeria is working to meet the HFA's five priorities for action.[3] Eight years after being set up, Nigeria's National Emergency Relief Agency (NEMA) has achieved great improvements in terms of structures put in place for managing disasters. However, it is obvious that in many cases there has been poor execution of responsibilities by the authorities at state and local government levels. Most flood victims do not get compensation or relief during flood disaster; if it comes, it usually comes too late or with strings attached. Even in the face of threatening disasters, there are no coordinated efforts to evacuate the population. Although these floods occur almost annually, local, state and federal governments appear to take no precautions, and their interventions are usually reactive rather than preventive.

Among the shortcomings of the Act establishing NEMA are its silence on the roles of local government in disaster management, non-listing of disaster and emergency matters in the 1999 Constitution of the country, and the inability of the federal government to impose any structure or directives on any state or local government. As a consequence, disaster and emergency matters are treated as peripheral.

When benchmarked against the guiding principles of the HFA, Nigeria seems far from achieving disaster resilience for vulnerable communities. For instance, policy commitment to and investment in disaster reduction are still low; there are no early warning mechanisms; and no efforts are being made to tackle or reduce underlying risk factors. However, a National Policy on Disaster Management is currently being drafted. In order to be effective it must include measures to:

- ensure disaster management is backed up by national legislative and financial frameworks with clear, definite roles for all levels of governance as well as for local communities and NGOs
- facilitate collaboration with relevant meteorological and hydrological institutions for developing early warning systems and hazard prediction/forecasting
- use knowledge, innovation and education to build a culture of safety and resilience at all levels
- advocate and campaign for proper planning for land-use and house building at community, local, state and national levels.

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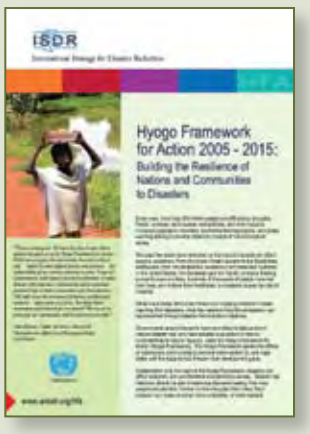
1. www.emdat.be
2. www.unisdr.org/eng/hfa
3. See previous article by Basher, pp35-6.



Brochure and key Hyogo documents are online at www.unisdr.org/hfa

Disaster risk mitigation – why human rights matter

Walter Kälin and Claudine Haenni Dale

Existing human rights obligations already require states to take measures to mitigate the risks of natural or man-made disasters – including those due to climate change – and thus to prevent displacement.

The European Court of Human Rights recently clarified these obligations when it had to address the question as to whether and when deaths caused by a man-made or natural disaster can amount to a human rights violation by the state, thus obliging it to compensate the survivors. The Court's case-law allows us to conclude that failing to take feasible measures that would have prevented or mitigated the consequences of foreseeable disasters amounts to a violation of the right to life and therefore incurs the responsibility of the state under international law. Two judgments of the European Court of Human Rights, the Öneryildiz case and the Budayeva case, are particularly relevant.

The Öneryildiz case[1] deals with the consequences of a methane explosion in a public rubbish dump, used by several city districts, situated on a slope overlooking a valley in Ümraniye, Istanbul. Ten slum dwellings in the immediate vicinity of the dump were engulfed by the refuse and 39 people were killed. Some two years previously, experts had warned the authorities of the risk of such an explosion but no steps were taken – either to burn off the gases that had built up in the waste disposal site or to evacuate neighbouring houses.

In the Budayeva case,[2] in July 2000 a mudslide swept through Tyrnauz, a town situated in a mountainous region in the central Caucasus, killing several people and destroying many buildings. The mudslide was triggered by the Gerhozhansu River that runs through the town and was the last in a long series of similar events. Tyrnauz had been protected by various mud retention dams but these were badly damaged by particularly heavy mudslides in 1999 and never repaired, despite warnings by the state metrological institute. Two weeks earlier the agency had informed the local Ministry for Disaster Relief about the imminent danger of a new disaster and had requested that observation points be set up in the upper sections of the river and that an emergency warning be issued if necessary. None of the proposed measures were taken.

The day before the main disaster, a flow of mud and debris hit the town and flooded some of the residential quarters – but without causing any casualties. The local authorities ordered the evacuation of affected parts of the town but did not stop

A landslide destroyed 30 homes and left 24 people dead and many missing, the Philippines, September 2008.

evacuees returning to their homes the following day when the mud level lowered. It was then that the main mudslide hit the town and at least eight people were killed.

Human neglect kills

In both cases, relatives of those killed tried to obtain compensation from the domestic authorities. Their claims were rejected by the courts which argued that the causes of death were natural and could not have been foreseen or prevented; the state could therefore not be held responsible. The relatives then appealed to the European Court of Human Rights which found that both countries were in violation of their duty to protect life, having failed to take preventive measures, and ordered them to pay substantial compensation.

The Court based its findings on the recognition of a duty to protect life against the consequences of disasters by reaffirming that the right to life "does not solely concern deaths resulting from the use of force by agents of the State but also […] lays down a positive obligation on States to take appropriate steps to safeguard the lives of those within their jurisdiction" and stressing that "this positive obligation entails above all a primary duty on the State to put in place a legislative and administrative framework designed to provide effective deterrence against threats to the right to life."[3] While the Court in the Öneryilziz case recognised such a duty in the context of risks created by industrial and other "dangerous activities", it expanded this approach to cover natural disasters in the Budayeva case.

In implementing this obligation to protect, states have considerable flexibility with regard to the operational choices which they must make in terms of priorities and resources. However, the Court made it clear that a state becomes liable for deaths if they have occurred because the authorities neglected their duty to take preventive measures when a natural hazard had been clearly identifiable and effective means to mitigate the risk were available to them.

In the Öneryildiz case, Turkey had breached this obligation because the municipal authorities, though aware of the danger, had failed to take the necessary safety measures and had permitted dwellings to be built in the danger zone. In the Budayeva case, a causal link was found between serious administrative flaws that impeded the implementation of necessary measures and the deaths of the victims.

Conclusion

Other covenants and conventions contain the same obligation to protect life and the approach taken by the European Court of Human Right is likely to be followed in other jurisdictions in similar cases. In summary, the individual right to life and the corresponding state obligation to protect life require that, with regard to natural disasters, including those caused by climate change, the relevant authorities must:

- enact and implement laws dealing with all relevant aspects of disaster risk mitigation and set up the necessary mechanisms and procedures
- take the necessary administrative measures, including supervising potentially dangerous situations
- inform the population about possible dangers and risks
- evacuate potentially affected populations
- conduct criminal investigations and prosecute those responsible for having neglected their duties in case of deaths caused by a disaster
- compensate surviving relatives of victims killed as a consequence of neglecting these duties.

These human rights standards are of great practical import as they empower actual and potential victims of natural disasters to demand that authorities take the necessary measures to prevent deaths. For humanitarian agencies they highlight the relevance of a rights-based approach to disaster management.

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1. European Court of Human Rights, Öneryildiz v. Turkey, Application 48939/99, judgment of 30 November 2004.

2. European Court of Human Rights, Budayeva and others v. Russia, Applications nos. 15339/02, 21166/02, 20058/02, 11673/02 and 15343/02, judgment of 20 March 2008.

3. Budayeva case, §§ 128-129

Climate change persecution?

The 1951 Refugee Convention has come under attack for not catering for today's problems of generalised violence, natural disasters and mass migration. Importantly, 'persecution' is not defined in the Convention, and there is certainly room for evolution of the concept. Serious or systematic human rights violations are normally considered to amount to persecution. Could one eventually talk of climate change persecution? Who, in that case, would be the persecutor(s)? The state that directly fails to protect its citizens from the impacts, and/or the states that are the most responsible for the climate change? This sort of reasoning may lead to innovation in the development of international norms. We have already seen litigation against the biggest polluters – most prominently, the Inuit case against the US[1] – based on human rights and concepts of joint liability.

Furthermore, the Convention definition covers situations both where the state does not provide protection and where someone is persecuted but the state does not protect them adequately or at all. If a particular ethnic, religious, national, social or political group is discriminated against and left to live in an area prone to environmental degradation or sudden disasters, and the government does not protect them through, for example, adaptation schemes, one could argue that some of them may become refugees because of persecution on one of the recognised grounds. There may also be cases of more direct persecution related to the environment whereby persecutors use environmental destruction to undermine people's livelihoods.

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1. See www.earthjustice.org and article by Robin Bronen on pp30-2. For climate change law and jurisprudence in general see www.climatelaw.org

What humanitarians need to do

Jenty Kirsch-Wood, Jacob Korreborg and Anne-Marie Linde

Until recently, the humanitarian community had largely ignored the problem of climate change, thinking that mitigation – the reduction in greenhouse gas emissions – would minimise the need for adaptation to the effects of climate change. Events appear to be proving us wrong.

It is now clear that humanitarian preparedness and response to extreme weather events and other changes are a small but extremely important emerging component of the climate change adaptation debate. Two trends are of particular humanitarian concern.

First, climate change is increasing the frequency and intensity of extreme natural hazard events, particularly floods, storms and droughts. Nine out of every ten disasters are now climate-related.[1] Second, climate change is altering the morbidity patterns of diseases such as malaria and dengue fever that are major killers in emergency settings. Trends such as sea-level rise are of critical importance over the longer term but will have less of an immediate humanitarian impact within the current planning cycles of relief organisations.

Humanitarian expertise lies in preparing and responding to hazard-related disasters, conflict and situations of forcible displacement. Climate change will act as a 'threat-multiplier', exacerbating humanitarian need in each of these core areas of our work. Climate change is rapidly becoming a key contributing factor – though not the sole cause – of increased humanitarian need. It exacerbates existing human vulnerability and environmental degradation, which in turn threatens to intensify the struggle for access to, or control of, scarce resources – potentially increasing the likelihood of migration and armed conflict. The level of existing human vulnerability is likely to be the determining factor in the distribution of future humanitarian need associated with climate change.

The geographic area at risk from flooding is expanding, placing new, often less prepared areas at risk. Between December 2006 and March 2007, the coasts of Madagascar and Mozambique were hit by five successive cyclones, several of which affected the same areas and caused multiple waves of population movement. In the last 20 years the recorded number of disasters caused by floods has increased by 300% – from about 50 to more than 200. In terms of humanitarian response, floods and storms now trigger the bulk of sudden-onset international disaster responses. Of the 26 UN Flash Appeals issued since January 2006, 18 have been in response to floods and cyclones.

The intensification of climatic extremes associated with climate change will also increase both the likelihood and geographic range of drought. While drought itself does not necessitate increased humanitarian response, when combined with vulnerability it can result in 'slow-onset' disasters. Intensified periods of drought combined with unsustainable land use will intensify desertification in already vulnerable areas. This will reduce the capacity of these areas to support human populations.

However, the picture is not entirely bleak. Over the past two decades, while the number of recorded disasters has increased significantly so too has disaster resilience. When communities are prepared, they are less likely to be permanently displaced in the face of a hazard event. Well planned initiatives for environmental protection, land-use planning, natural resource management and settlement development can substantially reduce disaster risks.

WFP delivers food aid after cyclone Ivan hit Madagascar in February 2008.

Access to basic needs

Climate change will affect both water quantity and water quality. Increased salination of water supplies in coastal areas and pressure on existing water management systems are likely, due to flooding. Drought will also exacerbate salination and degradation of water systems.

Drought, and climate unpredictability, will also have an impact on agricultural yields. Agriculture fed by rainfall is projected to halve in some African countries by 2020. In addition, the cost of basic food commodities has increased 50% in the past five years, and in-kind food donations are decreasing. This suggests that rapid changes in agricultural practices and access to food are required if increases in humanitarian levels of malnutrition are to be mitigated or prevented.

WFP/Anna Yla Kauttu

The humanitarian community will in all likelihood be required to respond more frequently to drought-related food insecurity resulting in emergency levels of malnutrition, particularly in complex emergency settings where development actors will be less able to intervene.

Increases in temperatures resulting from global warming have also begun to extend the range in which diseases such as malaria and dengue fever can thrive. While populations in well-established high-prevalence zones often have a degree of local immunity, newly exposed populations are more susceptible.[2]

Displacement and migration

There is growing debate over whether climate change-affected populations are a 'new' group in need of protection and if existing legal frameworks are sufficient to provide for their protection. Within the humanitarian and risk reduction communities, however, these same populations have generally been seen as falling within existing, and expanding, caseloads.

It is clear that climate change will contribute both to increased temporary displacement and longer-term migration. The results of modelling longer-term changes in coastlines as a result of rising sea levels suggest that governments may be required to support mass movements of coastal populations after approximately 2080. However, in the period up to 2030, sea-level rise is less likely to be a major source of migration and humanitarian need. Prior to that period, increased flood and drought vulnerability are likely to be the main driver of temporary displacement and will result in increased humanitarian needs. Flood risk may be particularly intense in coastal areas and among growing urban slum populations. Drought and increased food insecurity may also increase migration in some cases, particularly into urban areas. For example, research in sub-Saharan Africa in the 1990s indicated that some 7 million people – out of the 80 million considered to be food-insecure – used migration as a coping strategy during periods of drought.[3]

Increased vulnerability and heightened competition for basic resources may also exacerbate migration and the potential for conflict. Humanitarian systems must expect that a significant number of disasters will occur in conflict settings, such as Afghanistan, Somalia, Haiti, Sudan or DRC, and it is likely that this will fuel migration, social tensions and a need for increased international humanitarian assistance.

In 2008 the Inter-Agency Standing Committee Principals[1] chose climate change and its impact on humanitarian action as one of the strategic priorities for their agenda. In April a paper[2] was presented to their meeting, whose purpose was to position humanitarian impacts of climate change within the broader disaster risk management framework and stimulate a debate in relation to climate change adaptation strategies. Specifically in relation to forced migration, it said, among other things:

"Displacement is likely to increase, as land becomes less productive and livelihood options diminish, and continuing informal urbanisation and slums will put more pressure on crowded land and create potential disaster hotspots. In this context, the risk of discrimination and violation of economic, social and cultural rights will require special attention as will the need to revisit the current international protection system to address more effectively the challenges of different types of forced migration caused by environmental degradation.

Climate change will require measures at different regional scales, in addition to national and sub-national levels. The focus needs to be on mobilising and supporting the efforts of local communities that are facing the heaviest burden. All sectors of society – public and private, civil and military – need to scale up attention and resources dedicated to climate change adaptation."

1. www.humanitarianinfo.org/iasc/content/Princip/

2. A full version of the paper 'Background Document: Humanitarian Action and Climate Change' is available at www.humanitarianinfo.org/iasc/content/documents/princip/20080430-1470/Humanitarian%20Action%20and%20Climate%20Change.doc

How big will the problem be?

The actual extent and humanitarian impacts of this trend will be based on a complex mix of factors, making modelling of these trends

extremely difficult. The complex inter-relationship of vulnerability, exposure and capacity means it will not be possible to accurately predict migration flows likely as a result of climate change, any more than we can accurately 'predict' wars. Increased drought in an area of very low population density will not have the same impact as drought in a populated area. Less water may be manageable in a richer area but may lead to the depopulation of a poorer community. The needs of different affected populations will be extremely diverse. It will be important, therefore, to place trend analysis at least within broad timeframes and to differentiate between the humanitarian short-term migration impacts and those that are perhaps more extreme but essentially longer-term in nature.

It is also essential to recognise that it is not, and will not, be possible to isolate climate change as a cause of either migration or displacement. Rather climate change may contribute to environmental and social trends that make it difficult for vulnerable people to survive where they are. Reliable attribution that can link a particular hazard event first to climate change, and then to migration, would be extremely difficult, if not impossible.

We must be careful in considering new categories of 'environmental migrants' and 'climate change migrants' not to undermine existing rights. There has been an increasing body of work to link international human rights law and customary legal norms on internal displacement to situations of disasters associated with natural hazards. The IASC Guidelines on Human Rights in Natural Disasters[4] are an example of this. Creating new, perhaps overlapping, categories should not undermine hard-won gains in these areas.

Voluntary migration should also not be confused with forced displacement. And, particularly in the context of disasters, short-term migration should not be confused with long-term displacement. It was precisely Bangladesh's capacity to help three million people to voluntarily move out of harm's way in the wake of Cyclone Sidr that saved thousands of lives in November 2007. In the context of rapid-onset disasters, even short-term forced displacement is legally sanctioned under certain conditions, as it is precisely the ability to move that saves lives. The vast majority of those displaced return home, and can and should be supported to rebuild in a risk-appropriate manner. These disaster-affected people should probably not be included in calculations of 'environmentally induced migrants'.

Conclusions

We are currently at a critical moment in time. We know enough to be able to prevent significant migration

related to climate change – if we can harness the vision and action that can bring about actual change.

However, policymakers should recognise that over the next two decades one of the major impacts of climate change will be an increase

Asking the right questions

David Stone

What does climate change mean for potential returnees to, for example, South Sudan – a land from which many had fled several decades ago? Will people who have lived in camps for the intervening years be able to resume a productive agricultural livelihood, should they even wish to? Will the crops that they may have traditionally grown still be productive in an area that may now be drier and hotter than before? Has anyone assessed the groundwater availability and recharge capacity? Are the varieties of trees that aid and development agencies are planting to rehabilitate the environment in former refugee- or IDP-hosting areas the most appropriate for what may be a changing climate? Answers to such questions are largely unknown, not necessarily because people cannot work out the consequences but because – by and large – the planners and managers of relief and development operations are not asking these questions.

More proactive, focused and appropriate assistance is urgently needed for returnee situations, for example where people who are finally leaving camps or camp-like situations are able to return to their former homes and attempt to re-establish their lives and their

UNHCR/E Denholm

Returning Sudanese refugees load trucks at the Ikafe transit camp near Yumbe, Uganda, December 2007.

Ruins of a home destroyed by Cyclone Nargis.

in existing types of climate-related humanitarian need. Scaling up existing investment in disaster preparedness and response is therefore essential. The 2005 Hyogo Framework for Action provides a framework for how to reduce disaster risk, and includes early warning and preparedness for response as key priorities.[5] Current disaster preparedness and response mechanisms will need to be adapted to conflict settings and to address issues such as migration, protection and conflict prevention.

Proactive analysis of the probable costs of increased disaster response activities for international humanitarian actors is also necessary. According to the UN's humanitarian Financial Tracking Service, funding for natural disaster responses currently accounts for roughly $804 million – 10% of overall humanitarian funding of approximately $7.7 billion. The 2007 UNDP Human Development Report[6] estimates that, as a result of climate change, an additional US$2 billion will be needed annually to strengthen disaster response by 2015 (although this figure is subject to considerable debate). Solutions to key questions such as whether increased funding will be expected to come from humanitarian, development or climate change adaptation funding 'pots' are basic but as yet unresolved issues that may have a huge impact on emerging systems to meet increasing need.

While some improvements may be possible, the complexity of both climate modelling and social systems means that clear reliable projections of future trends in key areas such as migration, conflict, urbanisation and financial cost are impossible. We must act on a sound analysis of past trends – and on best guesses. Without improved multi-disciplinary analysis, legal definitions to try to capture the impact of climate change on human lives will be meaningless.

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1. P Hoyois et al, CRED 2007b, *Annual Disaster Statistical Review 2006*, Brussels, May 2007, pp18-25. www.em-dat.net/documents/Annual%20Disaster%20Statistical%20Review%202006.pdf

2. See article by Carballo, Smith & Pettersson, pp33-4.

3. Myers (2005) based on Myers, N, and Kent, J (1995), *Environmental exodus: an emergent crisis in the global arena*, The Climate Institute, Washington, DC

4. www.humanitarianreform.org/humanitarianreform/Portals/1/cluster%20approach%20page/clusters%20pages/Protection/IASC_Op%20Guidel&Manual%20on%20HR&Nat%20Disasters_2008.pdf

5. www.unisdr.org/eng/hfa/ Se article by Basher pp35-6.

6. http://hdr.undp.org/en/reports/global/hdr2007-2008/

livelihoods. In most situations of this type, people are provided with only the most meagre levels of support – on a one-off basis. Families trying to rebuild their lives and livelihoods are often unable to make ends meet and may have no option but to turn to environmental exploitation as a source of revenue and income.

Many communities in northern Uganda are currently in this situation, being unable to afford fuel and food prices, and with restricted access to safe drinking water. While waiting for their first harvest to mature, people are turning to illegal charcoal making as a means of income, exporting it to South Sudan where market prices are five to six times the local cost in Uganda. The consequences of wholesale land clearance for charcoal making and agriculture must be expected to have longer-term negative consequences for such regions, for the people who may once again live there as well as for the environment.

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As agencies scramble to catch up with this issue and be seen to be 'responsible', there is a risk that some basic requirements will be overlooked or deliberately set aside. Amidst the flurry of international discussion and activity, the people who are likely to have to bear the brunt of the consequences of climate change hardly figure. They are rarely being consulted as to their situation, their needs or possible options which may well shape their future well-being. They are not being enabled or encouraged to enter the global debate. Part of the reason why they are ignored relates to the level at which dialogue and decisions are taken and resources allocated. Another and more chilling reason, however, is because many of these people and communities may not be aware that they are, or could well be, on the frontline of a series of events that are likely to change their lives, perhaps forever.

Hotspots – predictions and action

Jock Baker, Charles Ehrhart and David Stone

A recent study using mapping techniques to analyse vulnerability over the next 20 to 30 years highlights potential 'hotspots' and offers insights for mitigating the effects.

Climate change appears to be taking place at a rate that outstrips many worst-case predictions. This has implications in terms of human costs that are difficult to fathom.

There is mounting evidence that climate-related disaster events are having an impact on more communities around the globe. 'Bad development', conflicts and poor governance weaken the resilience of communities and adversely affect their environment, making it difficult to withstand the impacts of hazards and slowing down the process of rebuilding livelihoods following a disaster. Humanitarian organisations are starting to realise that climate change does not mean 'business as usual'. The nature and pattern of natural hazards and disasters has been changing and is very likely to continue to do so.

Global climate change is likely to affect everyone on Earth to some degree, whether in the form of social, psychological, economic or environmental change, or a combination of these. Some people will invariably be more affected than others. Typically these will be the poorest people and the most vulnerable communities who may have little information about impending hazards and are often the least able to rebuild their lives and livelihoods after having suffered a setback.

The usual response to disasters by UN agencies, international and national NGOs and governments has traditionally been just that – to respond. Insufficient attention is given to addressing impacts of a disaster ahead of time and even less to actually doing something about it. A recent study commissioned by CARE International and the UN Office for Humanitarian Affairs (OCHA) has attempted to identify regions and communities most likely at risk of specific climate-related disasters.[1]

What are 'hotspots'?

Using Geographical Information Systems (GIS) technology, the study examined the potential humanitarian consequences of climate change during the next 20 to 30 years. Specific hazards associated with climate change, such as floods, cyclones and droughts, were mapped in relation to factors influencing human vulnerability. The resulting maps identify hotspots of high humanitarian risk linked to climate change.[2]

The intensity, frequency, duration and extent of weather-related hazards are expected to increase in many parts of the world during the next 20 to 30 years. Many of the countries and regions that currently suffer weather-related disasters should thus expect conditions to worsen in the short term.

- **Flood-risk hotspots** were identified in Africa (particularly in the Sahel, the Horn of Africa, the Great Lakes region, Central Africa and South-east Africa); Central, South

Hurricane Mitch

and South-east Asia; and Central America and the western part of South America.

- **Drought-risk hotspots** are mainly located in sub-Saharan Africa, South Asia (particularly Afghanistan, Pakistan and parts of India) and South-east Asia (notably Burma, Vietnam and Indonesia).

- **Cyclone-risk hotspots** include Mozambique and Madagascar, Central America, Bangladesh, parts of India, Vietnam and several other South-east Asian countries.

The map above[3] shows hotspots of humanitarian risk for floods, cyclones and drought (combined) overlaying a population density gradient. Blue areas with striped overlay represent areas of high population density that are also at-risk hotspots. These areas could be interpreted to be at higher risk of future population displacement as a result of climate hazards.

Areas at risk from more than one climate-related hazard warrant special concern. These areas include much of sub-Saharan Africa, especially the east coast, and much of South Asia. In addition, some areas are at-risk hotspots for all three of the above-mentioned hazards. These include South-east Africa and parts of South and South-east Asia.

The same approach can be used to produce maps giving a more detailed view of predicted human vulnerability, based on a number of natural, human, social, financial and physical variables. High levels of vulnerability, for example, often reflect national indicators for governance and risk of conflict while lower vulnerability can reflect greater availability of water and fertile land. A clear message emerging from this study, however, is that high incidences of hazards need not necessarily result in similarly high levels of human vulnerability.

Predictions into action

This study also suggests some important actions:

- **Increase investment in disaster risk reduction (DRR).** This means concentrating on reducing vulnerability rather than just reacting to emergencies, especially in poor countries that are hazard-prone but are experiencing an increase in extreme weather events. Future agreements on how to adapt to climate change need to clearly reflect the importance of disaster risk reduction and preparedness for response.

- **Ensure faster and more appropriate responses to disasters.** Climate change will increase the need for 'intelligent' humanitarian responses which preserve livelihoods as well as saving lives.

- **Invest in improved hazard and vulnerability analysis and mapping systems** to better assess risks arising from climate change. Such investments include improving climate-monitoring technology in order to improve mapping, improve the reliability of forecasts and model good practice. This information then needs to be translated into policy to ensure appropriate support to vulnerable populations affected by climate change.

- Last but by no means least, **mitigate climate change.** Without this, many efforts to reduce vulnerability are likely to fail – even with more accurate modelling systems.

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For more information on this study visit www.careclimatechange.org

1. Thow, Andrew and de Blois, Mark (2008) 'Climate change and human vulnerability: Mapping emerging trends and risk hotspots for humanitarian actors' Maplecroft

2. Given the complexity of climate change science and measurements of human vulnerability, the results should be interpreted as indicative only. Additional more detailed research is required at both regional and local levels to improve reliability.

3. This map, and others referenced in this article, were developed with support from the Policy and Development Studies Branch of OCHA. The views expressed, however, are those of the authors and do not necessarily represent the official position of the UN.

No regrets

Vikram Odedra Kolmannskog

Adaptation in the most exposed and vulnerable states must be an international task.

Refugees gather water from a stagnant puddle in Hargeisa IDP settlement, Somalia, 2006.

Prevention and mitigation must be priorities for action but, with global warming already a reality, there are some impacts for which adaptation is the only available and appropriate response. The Intergovernmental Panel on Climate Change stresses the importance of addressing climate change adaptation in vulnerable states, especially where these responses are so-called 'no regrets' measures – that is, measures that turn out to be of benefit no matter how or if the predicted climate change impacts materialise. Their report[1] notes that most analyses of adaptation propose that successful adaptations involve marginal changes rather than fundamental changes in location and development paths.

From environmental conflict research and migration/refugee studies, it is clear that addressing factors of conflict and forced migration can help prevent the worst impacts of climate change. Climate change has impacts that may trigger conflicts but they need not rise to the level of violent conflict. The capacities needed to adapt successfully to climate change are similar and often the same as those needed for development in general and to reduce the risk of conflict and forced migration. Strengthening and improving state structures and capacities as well as economic and distributive justice are ways of adapting. In this way, conflict- and migration-sensitive climate change policies can actively promote development, and climate-proof humanitarian and development policies can be effective climate change adaptation strategies.

Although the responsibility for climate change and its impacts primarily lies with developed countries, vulnerable states also need to address the realities of forced migration and conflict. Protection of people on their territory is the primary responsibility of nation states. Adaptation is to a large extent a question of resources, information and infrastructure but the role of the state, its institutions and other political and socio-economic factors is crucial in preventing conflict and displacement in the context of climate change.

In our globalised, privatised and free trade world it is increasingly difficult to isolate politics in one country and place blame on individual states alone. Much of the economy of vulnerable states is often largely controlled by western-owned, western-based transnational companies. These companies are motivated by profit and may even have vested interests in the malfunctioning of states as well as an inherent opposition to adaptation and mitigation measures. The trade in arms illustrates the role of large, transnational companies in contributing towards conflict and displacement. Attempts to control the illegal trade in small arms have failed several times because US arms manufacturers, in the name of market freedom and backed by their government, have rejected controls. The challenges facing developing countries must be seen in this larger context. If we want to deal with the causes of forced migration and conflict, we should also seek to locate them in the policies and practices of developed countries.

Climate change could foster a new and stronger sense of solidarity. It provides an opportunity for cooperation in addressing global issues such as conflict and displacement. Climate change reminds us how everything is connected. The world may be divided and people categorised in many ways but we all share and are part of the same Earth.

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1. www.ipcc.ch

The future is now

Craig L Johnstone

Our generation has failed to live up to its obligations to prevent climate change and any steps we take now, however welcome, will not totally reverse the trends. We need urgently to prepare now for the human consequences of climate change.

Firstly, we are in desperate need of a better understanding of the size and the characteristics of this issue. We need data to help us plan effectively. We have hit an analytical stone wall in terms of understanding what the consequences of this issue are and we are going to have to deal with extraordinary levels of ambiguity. Climate change can take so many different forms in terms of how it impacts on migration or even on refugee flows. The first requirement is to get better analysis.

The second issue is who is actually going to handle this issue. This is a global problem which will require action at the national, sub-regional, regional and international level. The UN clearly has a role to play, and the Secretary-General has made this a system-wide priority.

UNHCR has a clear mandate to protect and assist refugees and stateless persons. Some substantial percentage of the people who will be displaced will be escaping conflict or persecution brought on by civil strife caused in turn by climate change. Those who flee their country because the country no longer exists may well become stateless and therefore become charges of UNHCR. In all of these situations UNHCR has the mandate and responsibility to assume the responsibility to protect.

But UNHCR is called upon frequently to assist in international emergencies caused by natural disasters, such as earthquakes, floods and violent storms, not because the people affected by these events fall under the UNHCR mandate but because UNHCR has the experience and capability to assist and has a humanitarian obligation in these situations to do what it can. By extension, it is hard to envisage a true international emergency of forced displacement precipitated directly or indirectly by climate change in which UNHCR would not play a key role. So we have to be ready to assume our share of this responsibility. We will need to consider whether or not additional international legal frameworks are necessary to tackle the issues or whether existing mechanisms coupled with intense and careful coordination will suffice.

Who is going to cover the costs? It has been proposed that the costs should be borne by those who have caused the problem. And, although no country or group is free from blame on this issue, the industrialised countries of the world clearly bear the greater part of this burden. I would argue, however, that rather than assigning blame we achieve the same result by asking those who have the funds and the technologies to rise to the occasion and carry out their duty to humanity. Recent studies show that though the investment required may be large, the payback in economic terms can also be large. In sum, the developed countries of the world should be able to shoulder this burden if the will exists to do so. If funding is available I am confident we can find the international mechanisms necessary to address the problem. But funding availability will be problematic.

Displaced by floods, Sudan, August 2008.

Another – very pressing – issue of concern is who will accept these forced migrants when they can no longer live in their own countries? On the basis of our experiences to date, I predict that dealing with the resettlement of those who have been forcibly displaced by climate change will be a formidable, and possibly insurmountable, task.

We are not talking about an issue that will begin to affect us in the future. The future is now. We are dealing with a global crisis and we need a unified call to action.

Craig L Johnstone (johnstone@unhcr.org) is UN Deputy High Commissioner for Refugees. This article is based on a speech he gave at a conference on 'Climate Change and Forced Migration' organised by the Institute for Public Policy Research in London, April 2008.

Adaptation and cooperation

Britta Heine and Lorenz Petersen

Adaptation to climate change has become an important issue, both at international climate policy level and at the level of practical implementation on the ground.

Adaptation focuses on reducing (poor people's) vulnerability and thereby preventing both displacement and conflicts over scarce resources. Developing countries are especially vulnerable to the consequences of climate change, particularly where their livelihoods are directly dependent on climate and weather conditions. Poverty itself is a major cause of vulnerability to the consequences of climate change. A lack of capacity (technical, human and financial) makes it harder to adapt to changing conditions and to mitigate the risks. In other words, climate change will first and foremost intensify pre-existing problems in developing countries, which will generally have difficulties in coping with and adapting to these additional challenges.

Climate change adaptation means re-examining and, if necessary, modifying our policies, programmes, investments and, ultimately, behaviours in the light of our knowledge about climate change and its impacts. This may mean coping with changing risks but it may equally mean capitalising on positive impacts of climate change.

It is important to distinguish between non-climate drivers, such as government policies or population growth, and actual climate drivers. Climate drivers can be processes with slow-onset changes such as sea-level rise, build-up of salt in agricultural land, desertification and growing water scarcity. Climate events are sudden dramatic hazards such as monsoon flooding, storms and outburst floods from glacial lakes. All contribute to increasing the number of vulnerable people living on marginal land exposed to climate change. While climate processes – being long-term by nature – need to be addressed by long-term adaptation strategies, climate events require measures of disaster risk management. In combination, the application of adaptation strategies and the implementation of successful disaster risk management will lead to less vulnerability.

Adaptation strategies

Adaptation calls for the collective efforts of various actors, working on different levels and across sectoral boundaries. Every adaptation strategy involves three main steps. The first step is to gain a clear picture of the anticipated climate impacts in order to gauge the vulnerability of societies and ecosystems. In contrast to disaster risk management, this extends beyond an appraisal of the immediate hazards and vulnerability; it also encompasses an assessment of future trends or the possible range of anticipated climate changes.

The second step is to compare climate impacts with vulnerabilities in order to derive possible adaptation measures. Establishing financial and economic costs by carrying out cost-benefit analyses helps to identify priority measures. The third and final step in this sequence is to determine the governance aspects. Who should most usefully tackle which area, with which risk management intervention? By following this sequence it is possible to develop local, national or regional adaptation strategies.

These steps have been applied within existing projects and programmes of German development cooperation focusing on climate change adaptation and disaster risk management. In view of the dimensions of the problem, however, international development cooperation can only contribute a part of the necessary resources for adaptation measures. Hence, supporting local governments in formulating adaptation strategies and priority setting is an important task for development cooperation.

Disaster risk management in Mozambique

The core aim of disaster risk management is to reduce the risk of disaster for societies living in regions threatened by natural hazards (risk management) and to prepare them to cope if disaster strikes (preparedness). In Mozambique, German development cooperation has successfully implemented a community-based programme which exemplifies the important role of disaster risk management for successful adaptation to climate events.

Mozambique is one of the poorest countries in the world. The watershed of the Búzi River in Sofala province is affected by very severe floods and neighbouring communities are also regularly hit by flooding and cyclones. Flooding in 2000 affected some 4.5 million people and claimed the lives of 800. According to reports from the IPCC, a further increase in heavy rainfall events and more intensive and widespread droughts in Mozambique are very likely.

In 2001 – one year after the flood – GTZ initiated a rural development programme with a disaster risk management component.[1] A participatory risk analysis identified one-third of the district's inhabitants as particularly vulnerable to extreme natural events. The most risk-prone areas have since been mapped in detail, along with areas of higher ground which could be used for emergency evacuation purposes. On the basis of the risk analysis, local Disaster Management Committees were established in nine communities and trained with the help of experts from Costa Rica and Honduras. Villagers and volunteers also established a local early warning system based on relatively simple resources. Readings of daily rainfall and river water levels are taken at seven measuring stations; these trigger early warnings when necessary. The local Disaster Management Committees receive these warnings, mainly through Radio Comunitarió do Búzi (in

Portuguese), and then inform the neighbourhood – in the local dialect, Ndau – and organise transport and evacuation. Translation into the local dialect has been an important factor for the success of the project.

Furthermore, a syllabus and lesson plans were developed at four project schools to raise awareness among children and young people about the impacts of climate change and to familiarise them with the theme of disaster risk management at an early age. Both themes have been integrated into local curricula.

As a result of these activities, villagers and local government representatives, teachers and schoolchildren have been sensitised to the issues, and disaster risk management measures for climate change adaptation have been integrated into the district's development plan. The robust disaster risk management system now makes it possible to deliver an early warning of flood events and the system has already proven its efficiency. During the rainy seasons of 2005 and 2007, extreme flooding struck the area once again but most of the inhabitants escaped and survived. In the meantime, the system has been further calibrated and refined.

The success of the project is ascribed to its high level of participation of and ownership by the people of the Búzi River. Moisés Vicente Benessene, Director of the National Institute of Meteorology, describes it as a "people-centred early warning system", based on local knowledge, customs and cultural values. As local leaders, doctors and teachers have all volunteered to serve in local Disaster Management Committees, taking on responsibility has become highly respected in the communities. Some challenges remain, however, such as keeping the system running and constantly maintaining people's awareness of climate risks and the use of disaster preparedness.

The experiences of Búzi have been shared with other districts, where plans are now also in hand to establish local disaster risk management mechanisms. The people of Búzi have shown that climate-driven disasters and threats can be effectively met by concerted, decentralised community action and self-organisation at low cost.

> "We realised that many lives could be saved with better capacity and structure for disaster management at all levels in the areas of prevention, preparation and response to such climate disasters."
>
> Moisés Vicente Benessene, Director of the National Institute of Meteorology

Mainstreaming adaptation in Indonesia

Adaptation is a cross-cutting task, requiring the coordinated efforts of different actors within and also beyond the state. Adaptation needs to build on and be supported by activities by relevant ministries (e.g. environment, finance and planning) and those responsible for identifying budgetary priorities as well as specialised agencies such as geological and meteorological services and institutions for disaster prevention. National Strategies can help provide a framework for coordinating adaptation activities, enabling informed decision-making, mobilising national and international support and developing appropriate institutional structures for adaptation.

Indonesia faces increased vulnerability to the effects of climate change, especially rising sea levels, changes in precipitation and extreme weather events. Climate projections indicate that the mean wet-season rainfall will increase across most of Indonesia while the length of the dry season is expected to increase, bringing increased risk of floods during the rainy season and drought in the dry season. This will have a particular impact on water resources, agriculture and forestry, health and infrastructure.

Dr Sutardi of Indonesia's Ministry of Public Works and Executive Secretary of Indonesia Water Partnership[2] explains that "most people have not yet integrated the issue of climate change into their everyday life. They still feel there was just a bit 'too much rain' during the rainy season or 'too little' in the dry months." However, adaptation to climate change is now a major concern of the Indonesian government. The Ministry of the Environment has initiated the development of a national strategic approach to adaptation planning. Challenges faced include the availability and dissemination of relevant information and planning tools, awareness of the issue among decision-makers, and

the involvement of line ministries and local-level administrations that are key to implementing adaptation.

GTZ is working on a project to help enhance the capacity of policymakers to mainstream climate change issues into development planning. It provides assistance in assessing vulnerability to and the economic impacts of climate risks as well as prioritising adaptation options in the water sector. The second focus is on cooperation between different institutions concerning adaptation. The assessment of impacts, vulnerabilities and adaptation options should lead to increased awareness and informed decision-making in water resource management and beyond. The integration of measures into development and financial planning should contribute to the sustainable management of public resources. And, finally, systematic priority setting should improve the efficiency of measures that reduce vulnerability to climate change.

Throughout the project, the importance of providing relevant information at different levels and to different stakeholders has become evident. In the water sector, detailed technical information is necessary to inform decision-making while awareness-raising requires there to be more aggregated knowledge. Improving institutional capacities for coordination is of particular importance at all levels.

Migration as an adaptive response

At some point a region may become no longer capable of sustaining livelihoods. People will be forced to migrate to areas that present better opportunities. Generally, the international adaptation community tends to regard migration as an 'adaptation failure'. However, migration is (and has been for a long time) an adaptive response to climate stress in many areas.

Temporary migration, for example, in times of climate stress can help top up a family's income (from paid work elsewhere) and reduce the drain on local resources. In Botswana, for instance, many of the urban poor rely on livestock and farmland in rural home areas for food and income reserves. Yet, as non-residents in their home area, they are not entitled to drought relief and risk heavy losses without compensation in the event of failure of the rains.[3]

Policies attempting to limit migration while disregarding causes and circumstances are likely to increase poor people's vulnerability. National (and regional) adaptation strategies should therefore incorporate migration as an adaptation option – recognising, for instance, that people often live and keep their assets in more than one place. In this respect, development cooperation can help improve local government's capacity to address migration as an adaptation option and accommodate migration rather than attempting to limit it.

Floods in Mutarara district, Mozambique, 2007.

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See also: GTZ (2008): **Climate Change and Security. Challenges for German Development Cooperation.** *Copies can be obtained electronically or as hard copies by writing to climate@gtz.de*

1. On behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ)

2. www.inawater.com/

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Kiribati – relocation and adaptation

CASE STUDY

Maryanne Loughry and Jane McAdam

As well as developing adaptation strategies, the people of Kiribati are having to consider the possibility of permanent relocation.

According to the Intergovernmental Panel on Climate Change (IPCC)[1], sea-level rise is expected to threaten vital infrastructure and structures supporting the livelihood of many Pacific island communities. By the middle of the 21st century, climate change is expected to reduce their water supplies to the point where they become insufficient to meet demand in low rain periods. Already a significant numbers of people in the Carteret Islands of Papua New Guinea are preparing to evacuate to Bougainville in 2008, and scientists suggest that these islands and the Pacific nations of Tuvalu and Kiribati are at risk of disappearing altogether by the middle of the century.

The Republic of Kiribati is an island nation consisting of one island and 32 low-lying atolls (with a total land area of 811 square kilometres) in the Pacific Ocean. The people of Kiribati – known as I-Kiribati – all share one common language, Gilbertese. Kiribati includes the largest coral atoll in the world, Kirimati or Christmas Island. Most of the land of Kiribati is less than three metres above sea level and on average only a few hundred metres wide.

The population is approximately 92,000, of whom nearly 50,000 live in South Tarawa, a highly dense area with a population growth rate of 3% per year. Most of the I-Kiribati are engaged in subsistence activities, including fishing and the growing of bananas and copra (dried coconut). The soil on the atolls is very poor and there is little opportunity for agricultural development. However, the fishing grounds are rich and copra and fish represent the bulk of production and exports. Nevertheless, Kiribati has one of the highest poverty rates in the Pacific.

Kiribati is also thought to be one of the nations most vulnerable to the impact of climate change. This is due in combination to the low-lying land mass with the population having no recourse to higher lands, the nation's limited sources of income, and the concentration of the majority of the population on one dominant atoll. These factors, combined with increasing changes in climate, pose a threat to Kiribati's food and water security, health and infrastructure, as well as the ability of the Kiribati government to cope with increasing climate-related disasters.

In 2004, the people of Kiribati acknowledged, in the Otin Taai Declaration,[2] that human-induced climate change will have an extensive range of negative impacts on peoples of the Pacific Islands, including:

- loss of coastal land and infrastructure due to erosion, inundation and storm surges
- increase in frequency and severity of cyclones with risks to human life, health, homes and communities
- loss of coral reefs with implications for the sea eco-systems on which the livelihood of many Islanders depends
- changes in rainfall patterns with increased droughts in some areas and more rainfall with flooding in other areas
- threats to drinking water supplies due to changes in rainfall, sea-level rise and inundation
- loss of sugarcane, yams, taro and cassava due to extreme temperatures and rainfall changes
- human health impacts with an increase in the incidence of dengue fever and diarrhoea.

They are clearly aware of the effects of climate change on their environment and fishing patterns. However, they are unsure of the science of climate change and frequently attribute the changes they are experiencing to the actions of God rather than human activities. Some believe that the current changes and water surges are signs of God punishing wrongdoing. Others believe that the future of Kiribati, though grim, is assured because God promised in the Book of Genesis that there would never again be a flood like the one experienced by Noah. Both explanations restrict the people of Kiribati's sense that they can be active in addressing the climate changes they are experiencing.

Regardless of explanation, the immensity of the problem facing the I-Kiribati calls into question whether adaptation is merely putting off the inevitable. A 2006 World Bank report, aptly called *Not If but When*,[3] stressed the inevitability of these extreme climate events for nations such as Kiribati – and the likelihood of them becoming more extreme. The report stops short, however, of saying that populations may need to migrate to avoid these extreme climate events. Rather, the onus is put on Pacific nations to address risk management of natural hazards and to build adaptation plans into their national development policies.

Relocation?

At the 60th session of the UN General Assembly in 2005, Kiribati's President, Anote Tong, mentioned the need for nations to seriously consider the option of relocation – the ultimate form of adaptation to climate change. He acknowledged that other forms of adaptation might be too late for his nation, and that now is the time to be discussing what might need to happen in the coming decades.

The option of migration is not unfamiliar to the people of Kiribati. In the 1940s, Kiribati's Banaba Island was decimated by phosphate mining and the vast majority of the population moved to the island of Rabi in Fiji. There has also been a movement of the population of Kiribati to the atoll of South Tarawa, resulting in over half of the total population of Kiribati residing on this one atoll. In reaction to the high population density there, in the 1990s the Kiribati government moved nearly 5,000 people to outlying atolls.

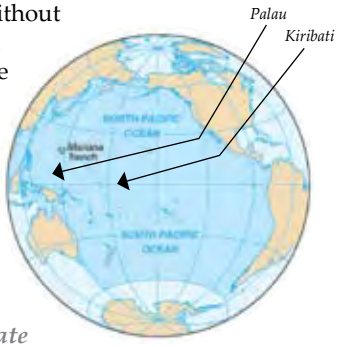
The infrastructure of Kiribati is under huge pressure. Many of the houses lack modern sanitation and are frequently not connected to the town sewage system (where it exists). Beaches and other agricultural land are frequently used for washing and toilet needs. In addition, the South Tarawa sewage system is over 25 years old and, because of limited funds, was not constructed of sufficient length to take sewage beyond the reef, resulting in effluent returning to the atoll with the tide. This, coupled with more extreme weather conditions and extra high tides, has meant that the domestic water supply is already compromised, with ground water at risk and the Tawara lagoon polluted. These pressures on the population add to the urgency of an adequate response for the I-Kiribati.

President Tong has called for urgent discussions on adaptation options, including migration, for the people of Kiribati. In particular, he hopes for increased labour migration options so that family members can support their extended family in Kiribati through remittances. Not surprisingly, Australia and New Zealand are two of the countries that President Tong is asking to be more receptive to increased labour migration from Kiribati. However, this is seen as a short-term response, pending a more comprehensive and radical response to be considered in the next decades.

Significant actors like the World Bank[4], in collaboration with partners such as AusAID and NZAID (the Australian and New Zealand governments' overseas aid programmes), and the European Union have invested in adaptation projects such as increasing popular awareness in Kiribati of the effects of climate change and developing infrastructure such as building higher and stronger sea walls. What is still not in place at present, however, is an adequate forum for discussions of realistic options available. Nor is there an institution mandated to assist the population of Kiribati to negotiate the most appropriate response to their pending plight.

In September 2007 the Pacific Conference of Churches called upon the churches of the Pacific to be welcoming and compassionate to those people of Kiribati, Tuvalu and the Marshall Islands who wish to resettle in Pacific countries. The statement also called for a regional immigration policy giving citizens most affected by climate change rights to resettle in other Pacific Island nations or Pacific regional countries of their choice.

For many people and nations, climate-induced displacement is a reality. However, the assistance and protection needs of the displaced are still being addressed primarily by the world's poorer, more vulnerable nations, frequently in a piecemeal manner and without the weight and resources of the international community.



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3. World Bank, *Not If but When: Adapting to Natural Hazards in the Pacific Islands Region* (2006) http://siteresources.worldbank.org/INTPACIFICISLANDS/Resources/Natural-Hazards-report.pdf

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Palau – coral reef protection

CASE STUDY

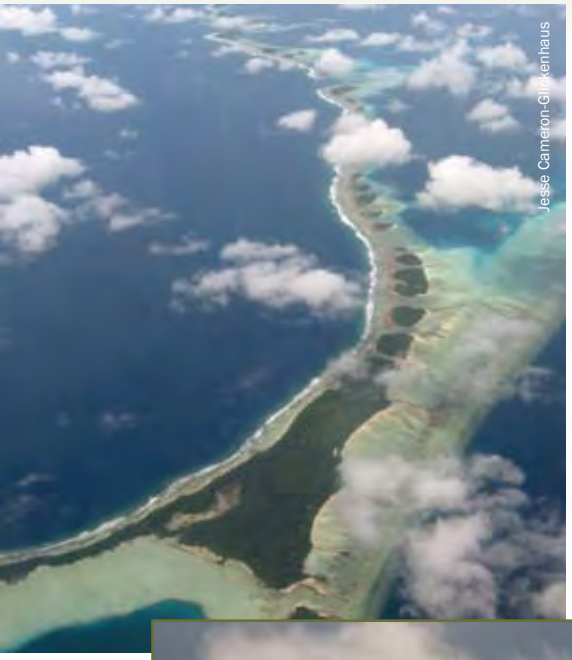
Jesse Cameron-Glickenhaus

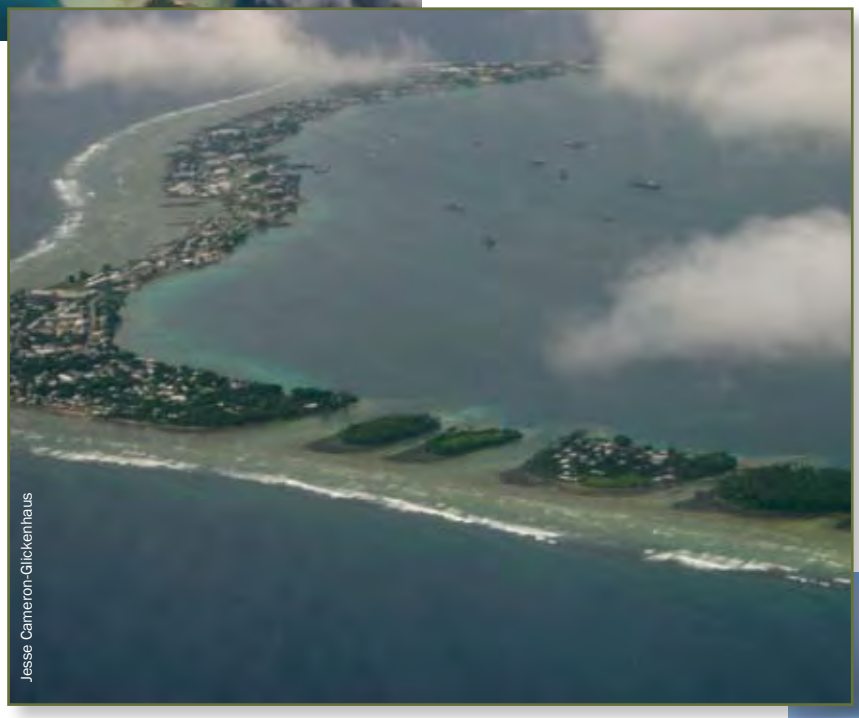
Climate change threatens to destroy coral reef ecosystems. When reefs die, economic and food security is threatened, forcing people to move.

Coral reef ecosystems are home to an estimated one million species and are among the most productive ecosystems on the planet. They are critical for food supply; over a billion people rely on reef-related fisheries worldwide. In addition, reef-related diving and tourism provide billions of dollars of revenue each year. The impacts of climate change – increasing ocean temperatures, ocean acidification, storm severity and sea-level rise – threaten to destroy coral reef ecosystems.[1] Unusual warming events have already caused massive coral bleaching throughout the world and the destruction of over one-third of the coral reef ecosystems of Palau, an island nation in the western Pacific.

> "...the destruction of our coral reefs is tantamount to the destruction of our country." Ambassador Stuart Beck of Palau, speaking to the UN Security Council on 17 April, 2007

Palau is attempting to adapt in several ways. Firstly, the people of Palau are protecting their reefs to increase resilience to climate change threats; healthier reefs are less likely to be destroyed by unusually high ocean temperatures than reefs under


Jesse Cameron-Glickenhaus


Jesse Cameron-Glickenhaus

stress. Local dive shops collaborate with government and other environmental agencies to ensure that tourism leaves no negative impact and, following Palauan tradition, certain areas of the reef are restricted during times of ecological stress and higher temperatures.

Palau has been a leader in promoting sustainable fishing practices that help protect coral reefs and is working with the Marshall Islands, the Federated States of Micronesia, Guam and the Northern Marinas Islands to further protect coral reefs. Together they have created the Micronesia Challenge, agreeing to conserve 30% of near-shore marine resources and 20% of land resources by 2020.[2] The project covers 9.6 million square kilometres of ocean and will help protect over half of all known species of corals.

Secondly, people in Palau and its International Coral Reef Center[3] are researching factors that make certain reefs more resilient to temperature increases, as well as methods to help speed up the growth and recovery of reefs.

Thirdly, Palau has led international efforts to reduce non-climate change destruction and stress to coral reef ecosystems, working for example to ban bottom trawling, a destructive fishing practice that destroys coral reefs.

Finally, Palau has spear-headed efforts to raise international awareness regarding climate change threats to coral reef ecosystems, securing additions to draft texts and resolutions as well as raising the issue for debate in international fora such as the UN Security Council and General Assembly.

Countries with coral reef ecosystems need to:

- reduce non-climate stress to coral reef ecosystems, including destructive fishing practices and chemical run-off
- diversify food supply to include non-fish sources of food
- prepare emergency plans to provide temporary food aid for subsistence fishers and their families; coral bleaching can occur within a matter of weeks with especially high temperatures, and reducing pressures from fishing can help corals recover.
- develop bilateral and multilateral contingency plans to relocate people in case massive coral reef destruction threatens local economic and food security
- ensure local participation and support for such plans and, if possible, give people a choice for relocation options
- ensure that any relocation plans include provision for job training so that populations can remain self-sufficient after relocation.

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Jesse Cameron-Glickenhaus

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Community-led adaptation in Bangladesh

CASE STUDY

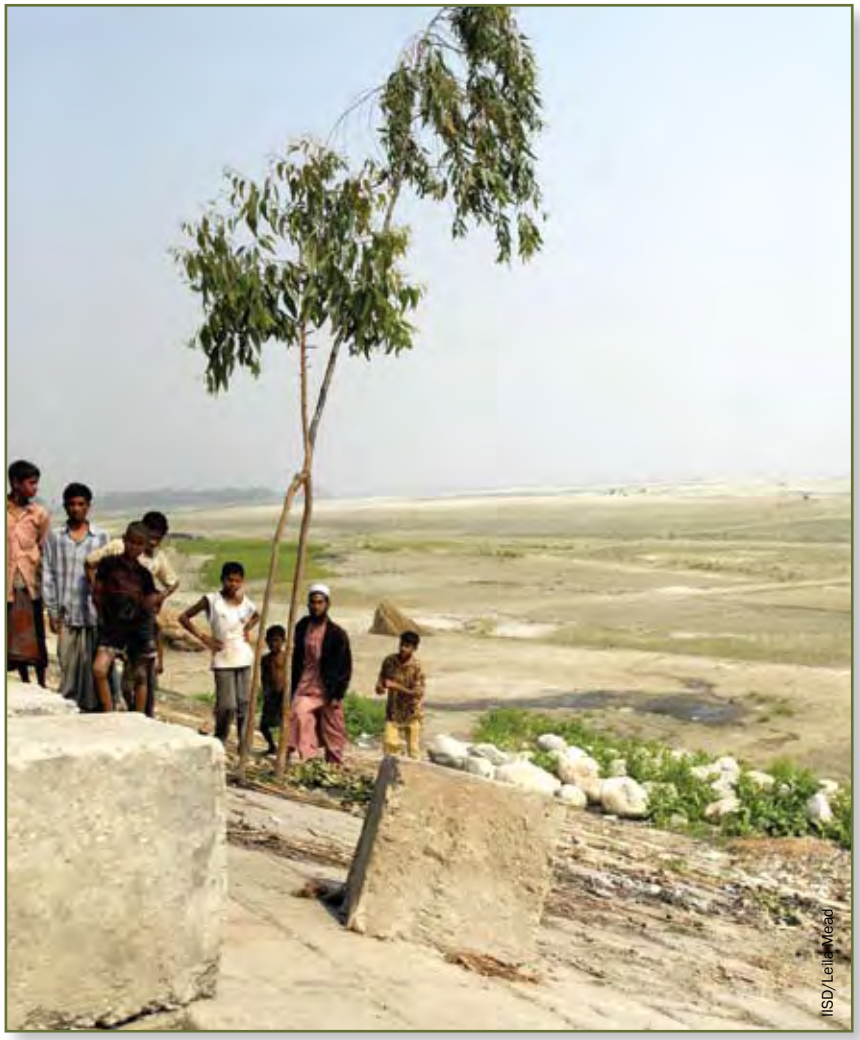
James Pender

Climate change adaptation strategies are urgently needed in Bangladesh but they must be community-led.

In terms of the impact of climate change, few places in the world will experience the range of effects and the severity of changes that will occur in Bangladesh. These global warming-induced changes will almost all have negative impacts on the population of Bangladesh, a country that already has around half of its citizens living below the poverty line. Forced migration threatens to be a major consequence.

Bangladesh is the world's third most vulnerable country to sea-level rise in terms of the number of people and in the top ten in terms of percentage of population living in low-lying coastal zones.[1] Currently, almost 40 million people live in the coastal areas of Bangladesh. Loss of coastal land to the sea in this vulnerable zone – currently predicted to reach up to 3% by the 2030s, 6% in the 2050s and 13% by 2080 – is likely to generate a steady flow of displaced people.[2] However, there are a number of other more insidious problems associated with sea-level rise.

Firstly, a higher sea level means that the gradient of rivers will be reduced, resulting in slower drainage to the sea. This will be compounded by higher rainfall in the Ganges-Megna-Brahmaputra river basins and greater Himalayan glacier melt in the monsoon, resulting in more devastating floods. In 1998 flooding submerged 68% of the country for ten weeks, temporarily displacing 30 million people.



IISD/ Leila Mead

River bank protection along the Brahmaputra River, Bangladesh. 2007

Secondly, cyclones may get more frequent and are likely to be more powerful. A higher sea level means that storm surges that accompany cyclones will drive sea water even further inland. A cyclone in 1991 killed 138,000 and affected over 13 million, with a surge 7.2 metres high. Surges in future may surpass 10 metres in height, penetrating far inland in this country of which two-thirds is lower than five metres above sea level.

Thirdly, sea-level rise will increase salinity in surrounding coastal areas, dramatically reducing yields from food crops and jeopardising drinking water supplies.

Food shortages caused by loss of agricultural land in the coastal zone as well as by flooding and droughts elsewhere in the country may lead to large numbers not only of internally displaced people but of refugees as well. Bangladesh's Adivasi tribal minorities – such as the Garo and Santal in the north and west, and the Chakma and other tribes in the Chittagong Hill tracts – are particularly vulnerable; they have lost much of their ancestral land to encroachment by settlers from more overcrowded parts of Bangladesh and are already concentrated on drought-prone or hilly agricultural land.

Community-led adaptation

Climate change adaptation urgently needs to be developed and applied in Bangladesh. Adaptation strategies can include:

- doing nothing: the least ideal strategy, obviously, but a

common one, due to lack of adaptive capacity

- sharing losses: whereby those affected do not bear the full cost of the effects of climate change; this may include insurance schemes as well as international aid
- modifying threats: includes, for example, changing agricultural cropping patterns or building a breakwater on an island to safeguard industries
- preventing effects: usually requires pre-planning and investments such as the building of large embankments to protect areas from flooding
- changing use: a different use of resources such as growing shrimps in newly submerged areas
- changing location: moving homes or businesses to safer areas
- restoration: restoring an area damaged by the effects of climate change to its previous condition (though of course leaving it open to similar damage in the future)

Whatever strategy is adopted, however, it should start with and be led by the local community wherever possible for it is local village people who are often the real experts on climate change. Rather than implementing highly technical, expensive and outsider-led interventions that are often untried in field conditions, priority should be given to using and modifying traditional coping mechanisms developed in the communities in Bangladesh and around the world.

In saline areas this may involve using ancient local technologies such as the huge locally fired clay pots that harvest and store rainwater from roofs, the selection of saline-tolerant rice varieties that have traditionally been cultivated by the sea, or belts of salt-tolerant trees such as mangroves planted along coastal areas to prevent saline intrusion. In seasonally flooded areas, local people from the south-west of Bangladesh have developed ingenious floating rafts with a bamboo base, upon which water hyacinth is piled and then covered by other aquatic plants or coconut husk to form a seed bed ready for planting. These floating gardens *(baira)*, which are cultivated in the rainy season and float above monsoon floods, are now becoming popular in many other areas in the south of Bangladesh.

At other times adaptation requires some infrastructure development, which may be as straightforward as raising tubewells on concrete platforms in order that a clean source of water is available above floodwaters. Concrete cyclone shelters on stilts along the coast have already saved thousands of lives – and are often used as schools and offices outside emergency periods. (Such adaptation measures may also require outside technical engineering input.)

Meanwhile, dry-land agricultural techniques that have been used for centuries in highly drought-prone areas in other parts of the world are also now proving useful as climate change adaptations in increasingly rainfall-deficient areas in the north-west of Bangladesh. These techniques include the use of intercropping and other agroforestry techniques, bunds and low walls in fields to help capture scarce rainfall, compost to retain soil moisture, drought-resilient plants and roadside tree plantations to shelter land from wind. The challenge is to spread the use of both local and foreign good practice throughout vulnerable areas.

Conclusion

Climate change will affect all areas of development work; mitigation and adaptation policies therefore need to be integrated into all existing projects and programmes. Climate change puts populations, particularly in low-lying poor countries like Bangladesh, at huge risk of becoming displaced. Increased attention and funding to support adaptation initiatives that enable communities to sustain their livelihoods despite increasingly hostile environmental conditions will enable families to remain on their land.


James Pender

'Baira' – floating vegetable nursery, Bangladesh.

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For more examples and photos of local adaptation techniques, see website of the 2nd International Workshop on Community Based Adaptation to Climate Change, held in Dhaka, Bangladesh, February 2007: www.iisd.ca/ymb/sdban

1. www.tiempocyberclimate.org/portal/bulletin.htm
2. www.ids.ac.uk/climatechange/orchid
3. His report summarising published literature on the effect of climate change on Bangladesh and possible. adaptation techniques is available at http://english.nca.no/article/view/5765

What it means for women

Women's Environment and Development Organization

Although climate change affects everyone, it is not gender neutral.

Climate change magnifies existing inequalities, reinforcing the disparity between women and men in their vulnerability to and capability to cope with climate change. During natural disasters, more women tend to die or suffer injury than men because they are not warned, cannot swim or cannot leave the house alone. When poor women lose their livelihoods, they slip deeper into poverty and the inequality and marginalisation they suffer from because of their gender increases.

Women's responsibilities in the family make them more vulnerable to environmental change, which is exacerbated by the impacts of climate change. As access to basic needs and natural resources – such as shelter, food, fertile land, water and fuel – is hampered, women's workload increases. Drought, deforestation and erratic rainfall mean that women have to work harder to secure resources and livelihoods. In such situations, women have less time to earn income, get an education or training, or to participate in governing bodies. Girls regularly drop out of school to help their mothers to gather wood and water.

The relocation of people severely impacts on social support networks and family ties – mechanisms that have a crucial value for women and on their coping capacity.

Women, however, can also be positive agents of change and contributors to livelihood adaptation strategies, and natural disasters can provide women with a unique opportunity to challenge and change their gendered status in society. Local strategies for adapting to climate change provide valuable lessons. In studies from areas where flooding was problematic, women's adaptation strategies and mechanisms included:

- moving to safer places: higher locations, temporary shelters, increasing the plinth level of their houses or homesteads, and migration
- saving their assets: trying to store seeds and moving livestock to higher places
- dietary adaptations: skipping meals or eating non-traditional foods
- preserving food to be used in lean times
- using alternative energy-related technologies
- adapting agricultural practices: e.g. switching to crops and/or varieties that are flood- or drought-resistant, multiple cropping and inter-cropping practices, alternative irrigation facilities, changing to more easily marketable crop varieties or to other animals
- earning income as labourers, borrowing money from money lenders, saving part of their earnings, or selling livestock
- organising and collective action: e.g. setting up of group savings or systems of group labour.

Environmental issues, including policies, laws and programmes, are often treated as being gender neutral. Whereas there is clear evidence of a direct link between gender relations and impacts of and adaptation to climate change, women's participation in decision-making structures and processes is still inadequate. Climate change debates, processes and mechanisms at national level often fail to sufficiently adopt a gender-sensitive strategy, and there is little evidence of specific efforts to target women in adaptation activities funded by bilateral and multilateral programmes.

A broader evaluation of women's vulnerability to climate change can be achieved through the National Adaptation Programmes of Action (NAPAs)[1] and by estimating the degree of vulnerability to natural risks. Many NAPAs emphasise the vulnerability of women and the importance of gender equality in broad terms. However, few describe how women are affected by climate change, much less how they might be identified as powerful actors and agents of change. Prioritised activities in many NAPAs fail to include women as contributors and target groups.

Where NAPAs do take gender aspects into consideration, substantial work still has to be done to mainstream gender in climate change policies. The Millennium Development Goals (MDGs)[2] and Poverty Reduction Strategies (PRSPs)[3] could serve as important reference documents in that respect. Civil society groups can play an important role in support of marginalised groups and in addressing equity considerations – and therefore are significant in strengthening gender responsiveness in climate change, enhancing human security.

Greater inclusion of women and inclusion of a gender-specific approach in climate change adaptation and decision-making may reverse the inequitable distribution of climate change impacts. And greater inclusion could improve adaptive decision-making itself, reducing the negative impacts on the entire community, thus enhancing human security.

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1. http://unfccc.int/national_reports/napa/items/2719.php
2. www.un.org/millenniumgoals/
3. www.imf.org/external/NP/prsp/prsp.asp

Communicating changing risks

Maarten van Aalst

Communicating about climate change is crucial for effective disaster risk management.

Climate change is increasing disaster risk, particularly for the most vulnerable people. Instead of starting new programmes to address these new risks by themselves, the challenge is to integrate them into our humanitarian work. The international community needs to understand and accept that traditional ways of thinking about disaster response no longer apply. Preparing for, reducing the risk of and responding to natural hazards is what many humanitarian actors already do, in collaboration with those most at risk. In the face of climate change, we just need to do more, and do it smarter, shifting from response to risk reduction, and making use of relevant climate information.

Nicaragua Red Cross Society

Winner of climate change poster contest in schools in Nicaragua, 2006, organised by the Nicaragua Red Cross Society.

The solutions may lie in early-warning systems, storm-resistant housing or in alternative crops that can thrive in soils turned saline by the seepage of rising sea levels or coastal floods. Or in commonplace measures: educating children on how to behave in emergencies, evacuation plans, action teams, escape routes, disaster calendars or planting trees on hills and shorelines against landslides and surges.

Indeed, many such strategies for climate change adaptation are indistinguishable from conventional risk management. The important difference is not so much in the outputs but rather in the process; in a changing climate, we have to reassess risk patterns, and communicate and address those changing risks rather than prepare for the disasters we have witnessed in the past, or wait to respond to the steadily rising number of disasters.

Ground-breaking work by the Samoa Red Cross has shown that adapting to climate change in the Pacific is not just about building expensive sea walls. The process begins with internal communication, reassessing priorities, rethinking strategies and approaches.

When first starting to address this issue, Maka Sapolu, the Samoa Red Cross Society's climate change and disaster preparedness officer, led workshops with staff and volunteers on Samoa's two main islands. They discussed what climate change was, what it meant for their people and how the Red Cross could assist in addressing it. Then they sat down with community leaders and government to see how climate change could be integrated into disaster management. The process brought new contacts with the Departments of Meteorology, Environment and Health, the National Disaster Management Office, the Water Authority and NGOs. Common concerns were soon found, such as growing water shortages. Samoa holds some of the oldest weather records in the Pacific and they show a steady increase in temperature and a decrease in rainfall. Community talks confirmed that scarcity of water had become a major issue, and government departments have made it a key priority.

One of the National Red Cross Society's most practical steps has been to assist with the interpretation of meteorological information and weather warnings. Nearly every village in Samoa has a different term for north, south, east and west, making it somewhat problematic to issue early warnings or direct people to shelters when an emergency approaches. The Samoa Red Cross now assists with the interpretation of meteorological information and weather warnings.

> The Samoa Red Cross organised a drama, puppet shows and poster competitions at schools, incorporating climate change and disaster risk reduction. Poster competitions have also been carried out by other Red Cross Societies in the Pacific like the Solomon Islands and Tuvalu.

Recent advances in science and technology have led to a remarkable growth in the development of forecasts that can help reduce the negative impact of expected

conditions. With predictions ranging from seasonal forecasts of a heavy monsoon to shifts in rainfall patterns due to climate change, humanity faces two new challenges: not just preparing for the foreseeable climate but also modifying decision-making processes in order to incorporate the availability of new information.

Prediction is not enough

People must both understand and trust warnings, and they must have the capacity to respond in an adequate manner. In the year 2000, the Limpopo river basin in southern Africa experienced a very substantial rainfall for many days as a result of unusual cyclones. Experts knew that it would result in serious flooding – of a magnitude never experienced before by rural communities in Mozambique. Yet very few villages were informed about it.

Most communities had no electricity or radio, yet people had previously been able to successfully predict floods by observing ants. Ants build their homes underground; when groundwater rises, they leave their nests – and people know that the water is rising. On this occasion the flood came so rapidly there was no time for the groundwater to rise, or for ants to react before the river overflowed. When someone who had heard the experts' prediction drove to a certain village to tell them to evacuate, the local chief asked him, "Who are you and why should I do what you say? Since the times of my ancestors, floods have only occurred after ants leave their homes. Now the ants are not moving and you come and ask me to leave?"

As in most of the Limpopo valley, many people did not evacuate. About 700 people drowned. The global climate is changing, and traditional knowledge is increasingly unreliable because our past experience does not necessarily apply to present and future risks. In that light, the key is to learn how to communicate new knowledge about future conditions in ways that can be understood and trusted.

While most people in vulnerable communities have already noticed unusual extreme events taking place, they often explain such events through supernatural forces, such as divine punishment or intervention by angry ancestors. This kind of explanation leads to the belief that things will soon return to normal or to fatalism and inaction. As a Mozambican woman farmer said during a Red Cross workshop: "If God wants to punish me, I will be punished, no matter what I do."

However, that form of thinking can be changed by access to new information. After learning about the very basics of the climate change process and watching a short video on the impacts of more frequent flooding in Argentina and Bangladesh, the same farmer said: "I thought my community was the only one punished this hard, and that it wouldn't happen again. But now I see that women all over the world are suffering in similar ways; so maybe it is true that the rains are changing and will continue to change, and maybe I can do something about it."

Now the cyclone warning system set up by the Mozambican government uses a colour-coded system with flags to label approaching cyclones. The Mozambique Red Cross helped design and implement the system, asking communities about traditional forecasting methods and sharing information about new ways to make predictions. A recognisable system was set up, based on radios, flags and whistles for broadcasting alerts. Escape routes and other response options were identified and publicised at community level. This greatly contributed to minimising human losses during the next intense cyclones to hit the country.

In Colombia, a number of activities were organised around a forum on climate change. In two villages schoolchildren wrote and produced a play about climate change. Communication students at Javeriana University made banners and developed materials for children on what climate change is and what children themselves can do to contribute to preventing climate change and address rising disaster risks. The students also produced a very successful puppet show about the earth being ill and running a temperature; the script, with music, is available in Spanish from the Red Cross/Red Crescent Climate Centre.

Climate change is with us and is already making humanitarian work more difficult. Things are expected to get worse. We will have to be smart and efficient, not just to keep up with the changes but to stay ahead of them.

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Predictive modelling

Christopher Smith, Dominic Kniveton, Sharon Wood and Richard Black

Empirical modelling techniques are the only way to effectively simulate migration resulting from a complex combination of pressures and opportunities.

There is considerable uncertainty in predicting climate change-induced migration. Firstly, we do not know the extent and magnitude of the climate changes responsible for pushing and pulling migrants. Secondly, the individual contexts, perceptions and behaviour of those affected by climate changes vary considerably. An agent-based modelling (ABM) technique can be used to simulate the relationship between the influence of environmental factors, climate variability and change and migration. According to the rules created for a particular simulation,

each 'agent' (representing a person or a household) assesses its personal situation, the climate risk, its ability to act, and the behaviour and views of others and then makes appropriate decisions to achieve its aims.

One advantage of ABM is the understanding that a series of interactions between individuals may result in more complex outcomes than could have been predicted by aggregating the behaviour of many individuals. ABMs are therefore an effective means of analysing the behaviour of individuals who interact but may think and act differently from each other and who also exhibit newly emerging traits. An important feature in the context of climate change is the capability of an ABM to allow scenarios to be simulated for which historical analogues (e.g. experience from past climate events) do not exist.

Migration

In developing an ABM to simulate the impact of climate change upon migration, it is important to consider the influence of social structures, institutional influences and the actions of individuals. When perceived risk from climate change is greater than a specified threshold, the individual considers adaptation and the options available – which may include adaptation or migration, or a maladaptive strategy such as denial or ineffective livelihood adjustments.

The basic cognitive process that each agent undertakes in consideration of climate stimuli, and the resulting selection of adaptation strategies, underpins the formation of the ABM. However, the individual context of each agent's unique combination of experiences, biases, assets and perceptions defines the differences among individual agents and their different responses to both environmental stimuli and the actions of others.

In order to refine the attributes of the agents and the rules of their interaction within an ABM, detailed country-specific knowledge is required.[1] With adequate data from which to develop the rules of interaction and thresholds for action of agents, the response of a community to a given or forecast climate scenario may be undertaken to provide a simulation of how that community will respond on the individual, household and community level. By developing an ABM from comprehensive data, the degree to which recent migratory movements have been affected by climate stimuli can be assessed and the influence of climate isolated from the multiple drivers behind migration.

Developing a model to simulate existing migrant flows provides an opportunity to investigate both the sensitivity of drivers of migration to climate and the thresholds and ranges of climate conditions that lead to migration. As a result of these findings, such a model can also be used to identify scenarios where there is a significant likelihood that communities and individuals will migrate. This could lead to an agent-based modelling approach that can produce a more detailed prediction of the number of people driven to relocate as a result of environmental conditions than has previously been possible.

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1. For more details, including information on the existing model for Burkina Faso, please see www.informatics.sussex.ac.uk/users/cds21/publications/

A global research agenda

Koko Warner and Frank Laczko

Given the magnitude of the challenges ahead, we urgently need to develop a policy-oriented global research agenda.

The topic of environmental change, particularly climate change, and migration is exploding onto the global policy agenda. Yet little evidence-based research exists to inform sound decision making. To address the need for more sound empirical research and to identify how to carry forward a global research agenda, the UN University Institute for Environment and Human Security (UNU-EHS) together with the International Organization for Migration (IOM) and the UN Environment Programme (UNEP) brought together 35 experts in the fields of migration and the environment in April 2008. They assessed the current knowledge base and identified research gaps and priority areas for research, which fell within three main areas:

1. Measurement and identification

More work is needed to conceptualise and quantify migration responses to the impact of environmental change and degradation. The existing, speculative estimates about the potential scale of environmentally induced human displacement underline the fact that we know very little about how changes in the environment affect migration and that we lack the data and research necessary to move beyond such estimates. We do not understand well how slow-onset events, including desertification, sea-level rise and deforestation, affect migration within and between countries. Nor do we know much about how expected changes in migration patterns are likely to affect the environment. Policymakers lack the information necessary to prepare for, prevent or respond effectively to environmental migration.

While experts felt that policymaking would benefit from a differentiated definition of environmentally induced migration, a working definition such as the one proposed by IOM[1] was deemed helpful for the purpose of framing the debate and measuring the phenomenon. Long-term environmental degradation interacts with migration in complex ways that make it difficult to clearly attribute people's reasons for moving and whether they are in fact environmentally induced migrants. An absolute number of environmental migrants, as often demanded by the media, is difficult to arrive at and current numbers are, at best, estimates.

2. Interactions and linkages
The meeting explored the complex interactions of environmental change with economic and social factors that drive environmental migration. **How** are they linked? The links between migration and environmental change are multi-directional, making it necessary to examine other factors such as governance, poverty, lack of social cohesion and conflict. Environmental change may have a multiplier effect on other drivers of migration.

Who migrates, **where** and **when?**
In the face of slow environmental change those who are able to move – those with money, social networks and alternative livelihoods – may tend to migrate independently. The vulnerable poor, those with no capacity to move when environments deteriorate, the very young and the elderly may be left behind or forced to resettle later. Gender and demographic structure also play a role in patterns of environmentally induced migration. While internal migration is likely to increase pressure on urban areas, international migration may become a more prominent feature of environmental migration as environmentally induced migrants draw on existing networks formed between source and destination countries.

Research and policy must make distinctions about the type of environmental stressor and the nature of human movement. Slow- and rapid-onset environmental situations will contribute to different migration patterns, ranging from temporal displacement and permanent displacement, to cyclical migration and permanent migration. Experts discussed identifying crisis tipping points or migration thresholds in the case of slow-onset environmental change.

What are the responses and **how** do people migrate? The tendency to migrate in the face of environmental stress may increase when temporary migration is already an established phenomenon. Migration should not be seen solely as a failure but also as a form of adaptation to environmental change. More investigation of possible positive effects of migration on the environment is needed.

3. Scenarios and policy
Migration needs to be discussed more within the context of adaptation strategies. For this to happen, policymakers need to better understand thresholds and critical tipping points. Other key policy areas include relocation and resettlement. Relocation has profound impacts on both displaced populations and receiving communities – but most policy currently focuses almost entirely on the process of the move. Looking at other forms of displacement and policy response can help shape appropriate policies.

A global research agenda and action plan

With agreement on the need for a global inter-disciplinary research programme to respond to these priority areas, the experts laid out four imperatives for further work on environmental migration:

1. Systematic review of available research evidence on environmental migration. This baseline will highlight where new methods and approaches need to be developed, and lay the path for future coordinated work.

2. A global multi-disciplinary research programme based on new in-depth field studies and using a common research design. The field studies will focus on those parts of the world currently, and expected to be, worst affected by environmental degradation and climate change.

3. Information and knowledge management, using networks, databases and websites, to ensure that research findings and key policy developments are shared effectively between key stakeholders and to encourage exchange of experiences and good practice.

4. Capacity-building projects to enhance data collection and use to ensure that countries likely to be most affected by environmental migration will have an adequate research base, training workshops for policymakers and best practices based on policy-oriented research.

To achieve human security in the face of expected climatic shifts, there must be careful multi-stakeholder involvement, particularly in resettlement and accelerated adaptation. Coordinated policy attention and action based on sound empirical evidence are needed today.

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For more details of the workshop, see www.iom.int/jahia/Jahia/eventEU/cache/offonce?entryId=16923.

1. "Environmental migrants are persons or groups of persons who, for compelling reasons of sudden or progressive changes in the environment that adversely affect their lives or living conditions, are obliged to leave their habitual homes, or choose to do so, either temporarily or permanently, and who move either within their country or abroad." Discussion Note: Migration and the Environment. IOM Council 94th Session 2007.

Flooding in Somalia, September 2007.

Changing climate, changing policies?

Dhananjayan Sriskandarajah

It remains doubtful whether national and international policymakers are yet willing or able to act to prevent or mitigate the displacement impacts of climate change.

There is of course no shortage of political or media interest in the nexus between climate change and migration. Yet there seems to be a dearth of analysis on how exactly climate change will lead to displacement and on what should be done to minimise adverse impacts. This has resulted in limited commitment to action.

Identifying the contexts in which climate change is or will be the determining factor in causing displacement (as opposed to one of many factors that may motivate people to move) will be crucial. Until we are clearer about this many policymakers will argue that, despite the importance of the issues, there is insufficient evidence upon which to act. This is not helped by the fact that most researchers working in this area are not yet confident enough about how the causality works to be prepared to recommend policy action.

Unfortunately, the relationship between climate change and migration, each a massive subject on its own terms, seems to be rather marginal to those who focus primarily on one of the issues. Sharing methodologies and findings across these communities more effectively will be a key step not only in advancing knowledge but also in generating policy solutions. Such cross-pollination will help resolve some of the key questions about what action is needed.

Even when it is clear how and where climate change will lead to displacement – and concerted research efforts currently underway should yield a reasonable picture soon – the difficulty of getting policymakers to act should not be underestimated.

The very task of identifying responsibility will be a huge challenge. The politics of climate change are plagued by collective action problems. International climate negotiations are regularly undermined by the fact that climate change is a global phenomenon that knows no boundaries, while some of the most important actors (sovereign nation states) are inherently bounded. Add to this the challenges of responding to international migration, another area where global consensus seems far off, and achieving multilateral action to prevent or respond to climate change-induced displacement seems incredibly difficult.

Any international action in this area will need to manoeuvre around several potentially thorny policy issues. For example, policymakers will need to decide whether they want to use legal interventions or new operational mechanisms, or both. And should policymakers prioritise agreeing universal principles around protection or proceed on a more ad hoc basis?

In the absence of good quality research and strong political leadership, we may actually see the worst of all possible outcomes: sensationalist headlines that exaggerate the scale of what might happen, reactionary policies to prevent the entry of environmental 'refugees' and very little genuine protection for those who might be vulnerable to the impacts of climate change, often through little fault of their own.

Researchers hold some of the responsibility for avoiding this by providing better analysis of exactly how the relationship works but the onus is equally on national and international policymakers to show leadership and respond appropriately to the challenges ahead.

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IRIN/Manoocher Deghati

"My personal experience is that most people have not yet integrated the issue of climate change into their everyday life. They still feel there was just a bit "too much rain" during the rainy season or "too little" in the dry months. It is not easy to realise that these are the first signs of a permanent change."

Dr Sutardi, Ministry of Public Works and Executive Secretary of Indonesia Water Partnership

From *Adapting to Climate Change: Practical Perspectives*, GTZ, 2008. Online at www.gtz.de/en/dokumente/en-climate-adaptation.pdf

Legal and normative frameworks

Roger Zetter

How the legal and normative frameworks are addressed will be critical to the security of people threatened by climate change.

A dominant theme of rights-based discourse is that rights should not be violated by displacement. There are, accordingly, well established international, regional and national legal instruments, covenants and norms to protect the rights of people forcibly displaced by conflict, persecution, natural disasters and development projects. It is therefore surprising that a similar framework to protect the rights of people forced to move because of climate-induced environmental change does not exist.

The key questions explored in this article are, first, the case for developing the capacity of domestic and international legal apparatus to support the needs of people vulnerable to displacement induced by climate change. The second is to what extent these legal and normative frameworks could support the capacity of local and regional governance and civil society structures to implement adaptation and resilience strategies in order to avert population displacement.

The aspiration is not to promote a case for developing binding conventions but to initiate a bottom-up process – much as the debate on the Guiding Principles on Internal Displacement did in the early 1990s – which might afford firmer support for the rights of those forcibly displaced by environmental change and of those at risk of displacement but who remain behind.

Conceptual and policy questions

Recognising the role of human agency and the need for states to articulate and address the protection of rights in relation to environmentally induced displacement is a pressing issue. What forms of protection for environmentally displaced people currently exist and, more significantly, should be developed as these migratory processes increase?

This same question has recently been posed by, for example, the IASC, IOM, EC and NRC[1], and at the Hague Debate.[2] A number of issues flow from this question.

It is essential to recognise the multi-causality of environmental displacement in which climate change may be only one of the factors triggering forced migration; this raises the question as to the extent to which it is possible to consider specific forms of protection for a migratory process which does not have a clearly established 'cause'.

A second, and related, challenge is to explore the extent to which people forcibly displaced by environmental factors are subject to violations of basic human rights in the way that refugees and IDPs are. It is necessary to establish the particular nature of threats to human rights caused by ecosystem degradation induced by climate change.

Thirdly, in contrast to one of the fundamental factors on which the 1951 Convention and the Guiding Principles are predicated, those who are forcibly displaced by environmental factors will often not return home. Moreover, whilst it is almost certainly the case that the majority will remain internally displaced and will thus fall within the sphere of national norms and legal instruments to protect their human rights, what has enforced displacement is a global process, not a local crisis. This reflects one of the most fundamental issues related to climate change: accountability – the obligation on the polluting countries of the global north to address the needs of countries that will suffer most in the global south. The interplay between national and international frameworks and issues of state sovereignty in applying protection instruments takes on unique meanings in this context.

Fourthly, much of the current discourse treats environmentally induced migration as a reactive response of last resort where migration is seen as failure. However, migration is sometimes a positive and proactive diversification and development strategy that households, individuals and sometimes whole communities adopt to improve their lives and to reduce risk and vulnerability.

Fifthly, and conversely, the focus of much current academic and political debate is on the interests of those forced to migrate because of environmental factors over the equally important rights of those who remain. For some, remaining may be a positive choice – a strategy of adaptation and resilience. This challenges the notion of vulnerable groups as passive victims, highlighting instead people's skills, strategies and agency. Equally, there may be those who are forced to remain because they lack the opportunities, skills and resources to migrate. In either case we need to consider how a rights-based protection regime and the application of principles of human security might support those who remain.

Lastly, it is in the global south where the incidence of climate-induced environmental displacement is, and will be, most severe. Many of these countries and regions have weak governance and civil society structures and are least able, or willing, to protect human rights and security. How can their protection capacity be enhanced? In this context it is important to recognise that environmental factors do not undermine rights and security in isolation from a broader range of socio-economic rights.

A new framework of guiding principles?

Acknowledging the strong resistance of the international community to developing new international instruments but recognising the need to protect the increasing numbers of environmental migrants, what

existing norms and instruments might be embraced in a new framework of guiding principles?

I believe the case is very weak for extending the 1951 Convention and 1967 Protocol to include so-called 'environmental refugees' as has recently been advanced by some researchers and humanitarian agencies. Conversely, the 1998 Guiding Principles, however, are not just a fundamental starting point in their own right but also a model for the process of aggregating and adapting the norms and principles from a wide range of international instruments to protect the rights of the 'environmentally displaced'. The 1948 Universal Declaration of Human Rights protects freedom of movement and other social, cultural and economic rights which can be enjoyed under international human rights law and international humanitarian law but which might be threatened when people are forced to migrate by climate-induced environmental degradation.

There are 'subsidiary' norms and instruments which afford different forms of human rights protection for migrant groups either directly or indirectly, for example: the 1966 Covenant on Economic, Social and Cultural Rights and the 1996 International Convention on Civil and Political Rights, as well as a range of international conventions dealing with specific social groups, such as the 1990 International Convention on the Protection of the Rights of All Migrant Workers, the 1989 Convention on the Rights of the Child 1989, the 1981 Convention on the Elimination of All Forms of Discrimination against Women and the 1991 ILO Convention on the Rights of Indigenous People. Given that statelessness is the likely condition for citizens of small island states which will be submerged by rising sea levels, their protection is a critical challenge under the 1954 Convention Relating to Stateless Persons, the 1991 Convention on the Reduction of Statelessness and the protection mandate of UNHCR for stateless people.

Alongside this framework of international human rights and humanitarian law is a substantial body of sovereign state domestic law and regional instruments providing subsidiary and/or temporary protection. Although implementation is limited in precisely those fragile states where protection is most needed, these laws and instruments offer scope for debate and possible expansion to protect the rights of those displaced by, or affected by, environmental degradation.

A number of international bodies, guidelines and standards buttress the protection and security rights of international law and give practical support to them. Although fraught with the same political challenges which accompany development of the framework of principles, in time we might conceive that the protection mandates of a number of international bodies could be extended, for example that of UNHCR or of the Office of the High Commissioner for Human Rights.

Standards and guidelines that could be extended include the UN Inter-Agency Standing Committee's Guidelines on Human Rights and Natural Disasters, the Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief, and the Responsibility to Protect of the International Commission on Intervention and State Sovereignty. Equally, the Sphere Project's Humanitarian Charter and Minimum Standards in Disaster Response and the humanitarian clusters under the Humanitarian Response Review process also provide essential features of protection regimes of relevance to those who are environmentally displaced. Interagency coordination, problematic enough now, will be vital.

Policy relevance

Protection and human security instruments and norms will not have the immediate impact of the physical, spatial and developmental strategies and policies needed to respond to climate-induced displacement – but providing and enhancing protection capacity remain essential components of a comprehensive approach to the challenge of displacement at both national and international levels.

Linking the protection discourse to climate-induced environmental displacement and strengthening protection norms and instruments are essential for supporting the potentially very large numbers of people forced to move as well as those who stay behind. Promoting a rights-based perspective of protection and an analysis based on entitlements can also be used as a tool to indicate the parameters for other 'hard' and 'soft' policy responses to the environmentally displaced – for example, rights of access to land and housing, freedom of movement, and participation and empowerment in decision-making on resettlement. Addressing the impacts of displacement as a rights-based challenge inevitably demands that affected populations are fully involved in developing response strategies, and that advocacy tools and processes are enhanced to promote their rights.

Finally, the policy relevance of developing protection norms, instruments and guidelines is emphasised by the extreme cases where ecosystem degradation and the depletion of environmental resources might lead to conflict and violence – and therefore to refugees in the strictest sense of the 1951 Convention. It is necessary to be cautious about these links, for there is little solid empirical research and it is clear that environmental factors do not work in isolation. Nevertheless, given the inevitability of ecosystem degradation and the resulting increase in the numbers of those who will be forcibly displaced, there is a strong case to be made to ensure that the protection machinery does embrace environmental displacement in these specific contexts.

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1. Inter-Agency Standing Committee, see p41; Norwegian Refugee Council, see p46; International Organization for Migration see pp59-60.

2. See podcast on Human Displacement and Climate Change in International Law at www.forcedmigration.org/podcasts/hague-climate-debate/

REFUGEE STUDIES CENTRE

Recovery and the rule of law: what have we learned?

Kathleen Cravero

While the tragedy and suffering have made a deep impression, it is people's courage and hope that keep me going.

It has been my privilege to serve the UN for the past 25 years, working for four different agencies in five countries. Now, as Director of the Bureau for Crisis Prevention and Recovery (BCPR), I am involved in supporting communities ravaged by conflict or natural disaster to rebuild and recover. For more than two decades, I have seen people at their most vulnerable and most resilient. I have seen courage in places where children torn from their families and forced into battle, women brutally raped and families dispossessed are ready to pick up their lives and start afresh.

The challenge has always been to re-think old ways of doing business and to support and serve people in their most vulnerable moments. The strengths of women, in particular, have defined both my professional career and my personal ambitions. Women suffer disproportionately during crisis and are often barred from the recovery process. Yet they remain the backbone of their communities before, during and after crisis strikes.

I recall vividly an encounter I had with young girls in Uganda. At the age of 13 they were taken from their beds in a school dormitory and forced into sexual servitude for the Lord's Resistance Army. These girls bore children, they bore arms and they survived unspeakable horrors. And yet, when they escaped and returned to their communities, they had the resilience to resume their education and get their lives back on track. Helping them achieve this is the essence of recovery.

One of the most important elements of the work of BCPR is access to security and justice, which are preconditions for sustainable peace and the cornerstone of our mission.

And since women victimised during crisis are so frequently denied justice, much of UNDP's rule of law programming focuses on the needs of this neglected half of the population – whether by training lawyers and police forces to respond to gender-based violence, establishing free legal clinics or working with governments


IRIN/Manoocher Deghati

to bring national legislation into line with international standards.

Establishing rule of law in a region ruled by force is not easy but we have learned a lot about what works. In recent years, five very important lessons have become clear:

- Engage early in a crisis.
- Instil a sense of national ownership.
- Promote women as leaders of recovery.
- Recognise security as a long-term process.
- Be flexible and adapt to realities on the ground.

Engage early

Responding early to a crisis is key to success. As humanitarian workers rush in to distribute blankets, food and medicines, recovery must also begin. UNDP serves as a bridge between humanitarian relief and long-term recovery, helping to restore the capacity of national institutions and communities in areas such as security and rule of law.

Immediately after any crisis – whether one prompted by armed conflict or natural disaster – there is a short-lived window of opportunity to 'build back better'. In crises, days and even hours can make a difference. With this in mind, UNDP developed a rapid crisis response strategy in 2007, creating a network of specialists around the world deployable within 72 hours. Last year, these specialists supported 15 countries hit by crises, including Bangladesh, Liberia, the Solomon Islands and Sudan.

The introduction of a rule of law programme in Darfur is an example of progress against all odds. Since this programme was launched in 2004, seven legal aid centres and four legal information centres have been established, granting legal aid to displaced people, many of them women seeking justice for sexual abuse and gender-based crimes. The programme has also provided training to over 40,000 legal professionals, police officers, traditional leaders and members of civil society.

Focusing on security and justice issues immediately after conflict may seem premature to some people. But restoring people's human rights and dignity – sometimes after generations of chaos and brutality – is essential to peace. The very idea that justice is possible, that the rule of law might be re-established, that brutality will be punished – these ideas create hope. They motivate people to abandon violence in favour of a future of peace and prosperity.

Instil national ownership

The success of the Darfur programme lies in its empowering of local authorities and communities to drive their own recovery process. It is not an imposed solution; it is rooted in the local context. We cannot underestimate the importance of national ownership.

National ownership is about humility. It's about listening to what women, men and children who have lost their limbs to machetes, their family members to marauders and their homes to warring militias want from us – not what we think they want or what we want from them. National ownership is about patience to cultivate a constructive relationship with government and other national partners and to empower local authorities to do the right thing at the right time. It is about trust and believing in the people we are mandated to serve; about recognising that beneath the sometimes corrupt leadership lies the inherent strength of societies; about reinforcing their own capacity to recover and rebuild; and about empowering communities when they are most vulnerable. In the end, our role is to catalyse national ownership by providing the space for national partners to pursue change on their own terms.

Promote women as leaders of recovery

One of the most common and disturbing images of war is of women on the road, uprooted from their homes and communities, reeling from unspeakable brutalities, clutching terrified children to their breasts. They must not only take care of themselves but also provide for extended, exhausted families. Women bear the brunt of suffering in crises.

In passing Resolution 1325 in 2000, the UN Security Council recognised the impact of armed conflict on women. Resolution 1325 is ambitious in scope and comprehensive in its directives; among other important issues, it identifies rape and sexual violence as war crimes and calls upon states to end impunity for perpetrators. Equally importantly, it recognises women not only as victims of war but as valuable partners in peace-building and recovery.

During conflict, in flight and in refugee camps, women and girls are vulnerable to violence, sexual abuse and exploitation. As community structures collapse and violence escalates, their protection crumbles. I have come across women who have been raped while gathering wood for their cooking fires or while walking to a distant latrine. I have met girls forced into sexual slavery by roaming militias. I have seen widows eke out a living for themselves and their children when their livelihoods have been destroyed and their rights to property and assets have been denied. In times of crisis women have shown extraordinary resolve and strength, often forming networks to provide services and support to each other. Yet they are too often excluded from the recovery process. This exclusion not only denies them their rights to services and to participate in government; it also denies recovering communities the benefits of their insight and resourcefulness.

Women can be empowered through opportunities to 'build back better'. With appropriate, sustainable and innovative support to governments and civil society, post-conflict recovery can provide better prospects for women to live free of violence and to emerge as leaders of their communities and governments. When the destructive forces that cause crises are weakened in post-crisis settings, we should seize the opportunity to challenge prejudices against women.

During my tenure at UNDP, together with our partners we have launched an eight-point agenda that seeks to realise women's rights in post-crisis situations. This 'action plan' aims to end sexual violence, reduce security risks to women in crisis, address discrimination that prevents them from claiming land and property, and transform social norms that exclude them from the recovery and peace-building process.

These efforts are already bearing fruit in Somalia, for example, where the first Women Lawyers' Association was established, providing legal assistance to victims of rape and domestic violence. UNDP's support has also helped ensure that women made up an estimated 10% of police academy graduates, and in September 2007 50 of the nearly 600 graduating police officers were women. In Afghanistan, East Timor and southern Sudan UNDP is helping governments ensure that national laws protect women.


Norwegian Red Cross/ Olav A Saltbones

Against the horrific backdrop of crisis, leaders are born. Left without the protection of fathers, husbands or other male relatives, women in crisis often discover new strength and an ability to protect themselves and loved ones from danger. Once peace returns, these women want to continue to make a difference. They want their voices to be heard. The UN should support this resolve and should not allow them to fade – or be pushed – into the background.

Recognise security as a long-term process

The rule of law programmes in Somalia and Darfur help bring conflict-ridden countries closer to peace. Yet improving the security of a country takes time, and the recovery work is designed with long-term goals in mind, not short-term exit strategies. To make the shift from military rule to civilian governance may require decades of investment. Our security and development work serves as an important complement to the more robust security deployment provided by UN peacekeepers. Peacekeepers protect civilians. But civilians' rights must also be protected by law and by the institutions of law enforcement and justice institutions. Our work empowers national rule of law institutions to protect citizens without outside help, by supporting national judicial commissions, courts, community policing and prison administration and by promoting democratic oversight over security institutions.

Adapt to realities on the ground

Over the past year, UNDP has developed a Global Program on

Strengthening the Rule of Law in Conflict and Post-Conflict Situations. This programme – rolled out in 17 countries in crisis – promotes complementarity and inter-action between humanitarian agencies that handle immediate needs, peacekeepers who provide security and stability, and development agencies with their long-term perspective. This yields better results on the ground. The Global Program is built on a strategy and clear areas of focus:

- strengthening the rule of law within an early recovery framework and during transitions
- addressing women's security and access to justice
- supporting capacity development of justice and security institutions
- facilitating transitional justice
- promoting confidence-building and reconciliation.

The strategy will be adapted to the challenges in each country. In an area such as the rule of law, flexibility is key. We must listen to our partners and respond to their needs, not some misguided desire for comparable data.

I work for a big institution. We think on a global or national scale: millions of people reached; thousands of livelihoods restored; hundreds of communities rebuilt. Yet recovery is built on the strength, hopes and determination of individuals. For me, recovery is about a woman called Immaculata. I met her in Burundi in October 1999 as we both fled an ambush in the displaced people's camp in which she was living. She ran alongside me with her four children, one of whom ended up on my back for much of the day. We ran for hours before finally making it to the relative safety of another village. I remember thinking that, while this may have been the worst day of my life, it was Immaculata's life. Day after day, year after year, she picks up her children and runs, never knowing where to or what awaits them when she gets there.

Recovery means that Immaculata can stop running. It is as simple as that. It means she can live with dignity, her children safe and in school, her livelihood assured. It means she will feel secure and have access to justice when and if she needs it. The value of our efforts lies in practical, concrete outcomes for the people we serve.

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Protecting human rights in Darfur

Maarten Barends

Rule of law programmes usually take place after conflicts have ended but it is never too early to start programmes which encourage a return to the rule of law and respect for human rights.

The sun rises over a flat expanse in Darfur. A seemingly endless number of plastic-sheeted domes and mud-brick structures cast long shadows. A low hum of quiet conversation grows louder as one hundred thousand displaced people begin to stir. As might be expected of a population this size – hemmed in by the constant threat of banditry and violent physicalattacks – conflicts are not rare.

Today, through an innovative Rule of Law Programme jointly managed by UNDP and an international NGO, Darfurians are coping with the many stresses of camp life with the help of specially trained paralegals. These paralegals, largely IDPs themselves, help manage and resolve camp-based conflicts by offering free legal advice and mediation services. They also facilitate justice by referring the most serious cases (e.g. rape, murder or torture) to the 61 Darfurian lawyers of the UNDP Legal Aid Network.

Jemeela, a 50-year old woman, originates from a village 30 kilometres south of the camp and has been displaced for nearly five years. Today, she is one of 154 paralegals in Darfur. Her paralegal team comprises 26 women and men of different ages and of different tribes. Some paralegals also serve as sheikhs[1] in their respective camp sectors. All are trained in mediation practices, human rights standards and Sudanese domestic law, and they help people to negotiate peacefully along the lines of entitlement and responsibility rather than to resort to physical force. Paralegals like Jemeela arguably provide the most important entry point for the dissemination and application of international human rights principles, especially those involving women's rights.

Paralegals conduct weekly training sessions in international human rights and domestic law, targeting both duty-bearers and rights-holders as it is equally important for people to be aware of their rights as for the authorities to live up to their responsibilities under national and international law. Such training provides a catalyst whereby people begin to question given norms of justice. Additionally, the exposure paralegals receive when providing training raises their standing in their communities and they are increasingly invited to participate in difficult mediations. During these mediations paralegals encourage sheikhs to apply and

incorporate human rights values and international standards of justice.

Procedures and principles

The displaced population in Jemeela's camp is predominately Fur and Muslim. Here, as in most places of Darfur, strong Islamic beliefs coexist with longstanding local customs and traditions. Among the most important cultural values is the belief that community problems should be resolved by the community. According to Ahmed, a local sheikh, "If someone wants to go to a formal court, the neighbours will intervene… You see, people here do things differently." There is a strong aversion to state-imposed solutions from local statutory courts and thus mediation figures largely on the list of sheikh obligations.

Most cases brought to the paralegals involve assaults: two women fight each other at a water source over their place in line; a youth is hospitalised in a fight over the interpretation of the Holy Quran; a divorcee fights with a new husband in a bout of jealousy. In cases of sexual and gender-based violence (SGBV), domestic violence predominates but rape, spousal abandonment and public humiliation are also common.

While mediation practices vary from camp to camp, certain basic procedures and principles are universal. Often, IDPs bring cases to the attention of paralegals before going to the local sheikh. Paralegals will coordinate with the parties to appoint a time for a mediation session in an open and neutral setting, such as the paralegal's household or the local legal aid centre. Where the parties fail to come to an agreement, the paralegal may request that a sheikh participate. Where paralegals are invited to participate in mediations they first lay down ground rules. Both parties are informed that they will get a chance to speak one at a time and that interruptions in testimony will not be tolerated. At the outset of any mediation, they announce the potential availability of free legal services (provided for through the UNDP Legal Aid Network) should mediation not be successful. They also comment on proceedings throughout, outlining national and/or international laws that may positively inform the outcome.

> "Before this Rule of Law Programme came, I had no idea women actually had rights. I was amazed."
>
> Jemeela, paralegal


UNDP/Maarten Barends

Most sheikhs claim that paralegals are an asset to their mediation efforts. "Paralegals ask more questions than we otherwise would," states one. Another sheikh says enthusiastically, "In our villages, women would never take part in mediations. Today, I hear from both parties and I have a much fuller picture of the story than I did before. I am able to make better decisions." While women's involvement is still wanting in some camps, paralegals note that, "our human rights training sessions have had a real impact on the sheikhs' thinking. Most of the time, women sit in on mediations in our camp." Indeed, one of the biggest accomplishments of the paralegal programme has been the furtherance of a woman's right to participate in proceedings affecting her well-being.

The relationship between paralegals and sheikhs is not without complications. Sheikhs carry the authority required to bring parties together and enforce decisions and thus their involvement is critical. Controversy arises particularly over paralegals' insistence that sheikhs not charge for their mediation services. Women paralegals face additional challenges. Younger female paralegals, for example, are not accorded the degree of respect that older female paralegals like Jemeela receive. As Jemeela herself claims, "Paralegals introduce human rights principles. However, tradition is still [an obstacle]. Sheikhs may or may not agree with new ideas, such as including women as mediators." Indeed, owing to the diversity of backgrounds of IDPs, controversies involving the place of international human rights in conservative Islamic communities are still not settled. Yet it is promising that such debates are taking place.

Working with traditional justice systems

Where traditional mediations lead to results that offend international human rights standards, paralegals inform the parties involved about their rights under Sudanese and international laws and offer the parties recourse under the formal justice system. They can also seek to sensitise sheikhs to Sudanese laws and human rights standards, and request reconsiderations of their decisions. Paralegals are limited to this two-prong response for two reasons.

Firstly, IDP camps are 'controlled' by the largesse of the sheikhs who act not only as justice-makers but also as the main conduits of food ration cards and non-food items. Sheikhs often do not appreciate members of their flock taking 'failed mediations' to the formal justice system as these cases diminish the sheikh's standing in the community. IDPs on the losing end of a traditional settlement may not, in turn, wish to offend their benefactors by seeking legal redress outside of the sheikh's circle of control. As the paralegal programme takes a client-centred approach, the client's decision to accept the sheikh's proposed settlement is a decision that paralegals must respect, although the paralegal may request (with the client's consent) another organisation to provide follow-up support.

Secondly, most IDPs came from tightly-knit village communities that place a premium on group harmony over individual rights. The isolation and constraints of rural village life require them to find solutions

agreeable to both parties to a dispute. In most villages, there are no jails, no peaceful way to enforce decisions and no mechanisms to protect decision makers (sheikhs) from retribution by aggrieved losing parties. Good relations between neighbours are considered necessary to survival. Today, these villagers live in the same tightly-knit villages – largely organised under the same power structures – within the vast tracts of IDP camps. Their traditions die hard.

Traditional mediation results may serve the short-term interests of peace in villages and IDP camps, isolated and facing scarce resources, even as they may do great injustice to the individual. The two-prong approach employed by paralegals is a responsible, client-centred and culturally sensitive response to overcome harmful traditional justice results.

The success of this first phase of the programme – conducted in the midst of a humanitarian emergency – shows that it is never too early to address the need for furthering the rule of law and respect for human rights and that it is possible to do so even while meeting survival needs.

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This article is written in a personal capacity and does not necessarily represent the views of the UN or any other organisation. The names of the people mentioned in the article have been changed to protect their privacy.

1. Sheikh means 'elder' in Arabic and is commonly used to designate an elder of a tribe, a lord, a revered wise man or an Islamic scholar.

Human trafficking: beyond the Protocol

Sergei Martynov

In February 2008, a major global event on human trafficking – the Vienna Forum – captured international attention and received broad global acclaim.

The Vienna Forum[1] did not end up with specific declarations, plans or pledges as is usually the case with such events. It merely brought together around 2,000 representatives of governments, international organisations, civil society and the private sector, as well as many renowned individuals. The greatest value of the Forum lies in the fact that it awoke the world to the very bitter reality of our contemporary life – slavery is still with us and it is thriving.[2]

Prohibited by law, human trafficking is a highly covert activity. Each year, some hundreds of thousands of people around the world become victims, unable to free themselves from an exploitative position. Criminals working in organised networks treat the victims like commodities, buying and selling them for profit.

Human trafficking is believed to be the third largest illicit activity in terms of profits after the illegal sales of arms and narcotics. Yet, it is precisely because of its covert nature that human trafficking defies any easy analysis and accurate estimate of numbers involved. Estimates of the number of global victims of human trafficking range from 800,000 to more than 2.4 million[3] and of the profits of traffickers up to US$32 billion.[4] It is believed that women and girls make up around 80% of all human trafficking victims. Of particular concern are children that fall prey to traffickers. UNICEF estimates that up to 1.2 million children are trafficked annually. Until recently, the main concern of public opinion has been with the trafficking for sexual exploitation. However, there seems to be a growing realisation that trafficking for labour exploitation should move higher up the policy agenda.

A new paradigm?

The world cannot drag its feet any longer. Global inequalities will surely persist, which, in turn, will continue to boost migration flows. Industrialised societies should acknowledge that they are to a great extent dependent on foreign labour to sustain their economic activities. It is within the power of governments to change the way global markets operate, thereby reducing the 'push' factor in the trafficking/migration nexus – and within their power to address the issue of how to optimise the regulation of migration, thus diminishing the 'pull' factor.

There are two major flaws in the current international anti-trafficking approach. First, there is the lack of a comprehensive institutional framework, at present epitomised by the Trafficking Protocol with its overriding focus on security. Second, there is the lack of an institutionalised structure for global cooperation against human trafficking.

The starting point for a new paradigm should be to recognise that victims of human trafficking are not solely the victims of traffickers but also of the global economic order and prevailing social contexts. A global response to trafficking should therefore include policies that address the three Ps – prevention, prosecution and protection. Furthermore, it must equally target both sides of the human trafficking coin, both demand and supply. And, finally, it should tackle both sexual and labour exploitation.

A new paradigm also requires an international structure that will ensure effective cooperation and coordination between stakeholders and the multiple anti-human trafficking initiatives. Far too often the efforts of the dozens of international

intergovernmental organisations and hundreds of NGOs involved in the area of human trafficking are fragmented, uncoordinated and not channelled towards mutual goals.

In July 2008, at the initiative of Belarus, ECOSOC adopted a resolution on a global plan of action against human trafficking. At the 63rd session of the UN General Assembly in September 2008 Belarus sponsored for the second time (the first in 2006) a draft resolution on improving coordination of efforts against human trafficking.[5] The key goal of this resolution is to make a decision on how best to formulate a global strategy against human trafficking. The momentum is mounting.

In practical terms, the role of a global coordinator could be assigned to the Inter-Agency Coordination Group Against Trafficking in Persons (ICAT) which was set up to facilitate coordination among various global and regional efforts. What it needs now is a renewed interest on the part of its members and political support from countries.

It is high time to make the necessary procedural decisions within the UN. Most crucial is that the current phase of anti-trafficking activities, which the Vienna Forum and the UN Global Initiative to Fight Human Trafficking (UN.GIFT)[6] in general were so instrumental in setting in motion, should culminate in a Special Session of the UN General Assembly devoted to the issue of human trafficking. Outcomes of such a session might be a UN strategy or a Global Plan of Action against human trafficking and a political declaration on the issue. In the long run, no initiatives can be effectively realised without the firm commitment and strong political support of the UN's member states. And it is for states to take responsibility and adopt a new comprehensive long-term paradigm on human trafficking that will surely better our common prospects for putting an end to this form of modern-day slavery.


IOM 2003/MGH0002/Jean-Philippe Chauzy

Trafficked boys drawing nets under the supervision of a slave master by Lake Volta, Ghana.

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1. organised by the UN Office on Drugs and Crime
2. For more information on human trafficking see FMR 25 www.fmreview.org/FMRpdfs/FMR25/FMR25full.pdf
3. See www.antislavery.org/homepage/antislavery/trafficking.htm
4. Cited from 'Enhancing the Global Fight to End Human Trafficking', Hearing in the US House of Representatives 26 September 2006, serial No.109-232, p.11.
5. Global Partnership Against Slavery and Human Trafficking
6. www.ungift.org

HIV/AIDS services for refugees in Egypt

Anna Popinchalk

HIV-positive refugees' access to medical care in Egypt is impeded by the lack of medical services and by the intense stigma and discrimination associated with HIV/AIDS.

While there is no evidence to support the claim that refugee populations have an increased prevalence of HIV, it is true that refugees are inherently more vulnerable to HIV – due to social instability, loss of relatives and breadwinners, increased risk of sexual assault or involvement in commercial sexual activities, as well as a lack of resources and services in education and health.

Before the 1990s, there was little focus on the risks of HIV/AIDS within refugee populations due to the fear that highlighting these risks would cause governments to resist accepting refugees. As countries began to consider the necessity to test refugees for HIV before allowing international travel and resettlement, UNHCR strove to protect refugees against expulsion due to their HIV status by publishing its Policy Guidelines Regarding Refugee Protection and Assistance and Acquired Immune Deficiency Syndrome (AIDS).[1] Since then UNHCR has continued to publish guidelines and strategic plans promoting the rights of refugees with regard to HIV and AIDS, including discouraging the use of mandatory testing.

According to the 1951 Refugee Convention, host countries are required to provide non-discriminatory social and medical assistance to refugees equal to that for nationals. However, countries already overburdened with HIV/AIDS within their own population are usually unwilling to provide additional services for refugees and seldom include refugees in their national AIDS policies.

As of March 2007, there were some 39,400 refugees and persons of

concern registered with UNHCR in Cairo, Egypt.[2] Among those, Sudanese, Iraqis and Somalis constitute the vast majority (93%). Refugees enjoy very few socio-economic rights in Egypt and therefore depend mainly on UNHCR and other NGO partners for assistance – and, in the crowded urban areas of Cairo and Alexandria, compete with local Egyptians for limited resources.

Refugees are impeded not only by the lack of medical services, but also by the intense stigma and discrimination associated with HIV/AIDS within both the Egyptian and refugee populations. Egypt's estimated low HIV prevalence can be attributed to the strong underlying cultural and religious values within society. As a result there is a lack of awareness about the disease and vast misconceptions with regard to modes of transmission and ways of prevention. It is commonly held that those with HIV must be promiscuous or drug-users and that HIV is a disease brought in by foreigners. As a result, HIV/AIDS is a highly stigmatised disease.

Before 2004, most HIV cases were reported as a result of the mandatory testing of blood donors, foreigners residing for more than six months and nationals applying for work permits to work abroad. While voluntary testing was available, those who tested positive were reported to the Ministry of Health and Population (MOHP), thereby greatly discouraging the use of such services. In addition, foreigners found to be HIV-positive were deported within 48 hours in order to try to contain the extent of the virus in Egypt.

In March 2004, following discussions with UNHCR, MOHP's National AIDS Programme (NAP) exempted any registered refugee or person under protection of UNHCR from this same threat – but non-registered refugees found to be HIV-positive still have no protection from deportation. As a result, many organisations, including AMERA, encourage refugees to keep their HIV status confidential.

Only in the past three years has the Ministry of Health and Population (MOHP),[3] with the support of Family Health International,[4] developed a system of voluntary confidential counselling and testing (VCCT) and established national guidelines and a monitoring and evaluation plan. There are currently 14 VCCT sites, nine managed by the MOHP, plus nine UNFPA-funded mobile VCCT vans to provide access to people in remote areas. All VCCTs provide anonymous testing; while seropositive cases are reported to the Ministry for statistical and epidemiological purposes, no identifying information is provided.

Unfortunately, as foreigners are not allowed access to national HIV/AIDS services, refugees are left to depend on local NGOs and organisations – such as Refuge Egypt, which introduced a VCCT service at their clinic in 2003. While anyone who comes to Refuge Egypt can access VCCT, the organisation mainly targets high-risk groups within their family planning, antenatal and TB clinics. For HIV-positive pregnant mothers, they help prevent transmission to the baby through caesarean sections and by providing milk formula to prevent transmission through breastfeeding. Anyone living with HIV/AIDS is also eligible for food packages and can obtain house visits from the clinic doctors. Refuge Egypt is the only organisation offering pre- and post-test counselling.

Caritas, another implementing partner of UNHCR, performs confidential HIV testing for refugees on request and also provides support and counselling on how to handle life with HIV. Similarly, AMERA, an independent NGO offering legal support to refugees in Egypt, provides psychosocial support services for seropositive refugees. Since 2005, MOHP's NAP has allowed refugees to be treated at Abbassia Fever Hospital for HIV-related illnesses or infections necessitating hospitalisation – but fear of deportation still prevents many from attending.

Despite these initiatives, refugees have no access to anti-retrovirals to prevent the onset of AIDS. While Refuge Egypt does have preventative anti-retrovirals such as post-exposure prophylaxis (PEP) for rape victims and single doses of ARVs to prevent mother-to-child transmission, there are no long-term therapeutic ARVs, leaving very limited options for treatment apart from treating any infections that may arise.

Recently, however, the Global Fund for AIDS, Tuberculosis and Malaria (GFATM)[5] provided funding for around 20 refugees to receive ARVs over a period of five years at Refuge Egypt starting in late 2008. The Ministry of Health, with UNHCR support, has started training doctors in HIV awareness, VCCT, prevention of mother-to-child transmission, PEP, emergency contraception and case detection of STIs and HIV-related illnesses.

Removing discrimination

The situation has improved over the last three years as the Egyptian government has begun to extend their services to registered refugees, coupled with the new ARV programme at Refuge Egypt. These examples of integration of refugees into national HIV/AIDS services are key to helping HIV-positive refugees in Cairo, not only for the refugee population but also to help strengthen Egypt's prevention efforts.

However, education is vital in order to attempt to remove the stigma and discrimination surrounding not only HIV/AIDS but also refugees. The secrecy that is created by advising refugees to reveal their HIV status only to their immediate family and doctor unfortunately only continues to stigmatise the disease. This reinforces discrimination within the community and forces the disease underground, affecting prevention efforts. It is only through education and outreach programmes that awareness can be raised and misconceptions dispelled to promote a better understanding of the situation.

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1. http://data.unaids.org/pub/Report/2005/unhcr_strategic_plan2005_2007.pdf

2. These numbers exclude the hundreds of thousands of 'closed files', not to mention the thousands of Palestinians residing in Egypt. UNAIDS/UNHCR: *Report on Project: HIV/AIDS prevention and impact mitigation among refugees in Greater Cairo, Egypt.* January 2006

3. www.mohp.gov.eg

4. www.fhi.org

5. www.theglobalfund.org/

International refugee law in Mexico

Axel García

Significant gaps in Mexico's legal process are increasing refugee vulnerability.

In 1980 the Mexican government created the Mexican Commission of Aid to Refugees (Comisión Mexicana de Ayuda a Refugiados – COMAR) to assist refugees arriving from South and Central America. 20 years later, Mexico became a signatory to the 1951 Convention and the 1967 Protocol.

However, the legal system that was introduced to provide for the regularisation of refugee status includes procedures that are not in accordance with the international law of refugees and has no provision for courts dealing specifically with migration or refugee issues, for specialist lawyers or for official translators or interpreters. Furthermore, there is only one NGO – Sin Fronteras IAP[1] – in the country that is devoted to this issue.

The process of granting refugee status has developed in an ad hoc fashion, and consists of three stages – preliminary, analysis and decision. During the preliminary stage, asylum seekers can claim protection by applying to the National Institute for Migration within their first 15 days in Mexico. Government officers then interview those applying for refugee status, research the human rights situation in their country of origin, and express an opinion about their eligibility.

In the analysis stage, the cases submitted by these officers are assessed by the Eligibility Committee Working Group[2] which decides whether to approve the application, ask for further details about the case or reject the application. If an application is rejected, the reasons behind the Committee's decision are explained verbally to the applicant. He or she can then request a new interview with a different officer. However, the case will be examined again by the same Working Group.

In the decision stage, the assessments of the Working Group are submitted to the Refugee Eligibility Committee[3], a body that issues a recommendation to the National Institute for Migration which will decide on the case. Those who have their application rejected are entitled to appeal for review. However, it is the administrative processes that are reviewed, not the reasons behind the decision. Few of these cases have been heard in the Mexican courts and the involvement of diverse authorities at different points in the process has caused confusion as to respective powers and authorities. It should be stressed again that there are neither courts nor lawyers specialised in this matter.

Challenges and responses

There is a lack of mechanisms to facilitate refugee integration and, most seriously, a lack of representation of unaccompanied children. We are campaigning for the constitutional recognition of asylum and a fully developed legal asylum procedure, as well as an increase in the government budget for assistance to refugees.

Mexican civil society and the academic community need to develop greater awareness of the importance of respecting fundamental human rights, such as the right to apply for refugee status. A group of international, governmental, non-governmental and academic organisations is currently working on the development of a 'virtual degree' that would include subjects such as migrants' human rights, international refugee law and people trafficking. This will enable human rights workers to undergo training and become better qualified.

UNHCR should bolster its efforts in Mexico to promote international refugee law, whether directly or through civil organisations and universities in order to train professionals interested in this field. The planning and follow-up of training schemes for migration officers instigated by UNHCR and the Mexican government should be improved, since they have so far had only a limited impact.

Juan de Dios Garcia Davish/ Centro de Derechos Humanos Fray Matías de Córdova

Popular route for migrants between Guatemala and Mexico.

Axel García (axelgarciamx@yahoo.com.mx) was a volunteer with UNHCR Mexico and was an officer of COMAR in Chiapas and Mexico City. He is a member of the International Association of Refugee Law Judges www.iarlj.nl/general/. This article does not necessarily reflect the views of either UNHCR or COMAR.

1. www.sinfronteras.org.mx
2. Made up of governmental organisations, UNHCR and an NGO with full voting rights.
3. A governmental body of high-ranking officials. UNHCR can be invited to work with them and have a say but does not have full voting rights.

Satellite imagery in use

Einar Bjorgo, Francesco Pisano, Joshua Lyons and Holger Heisig

Satellite imagery is becoming an increasingly important tool for the humanitarian community.

In recent years the international humanitarian community's response to complex humanitarian emergencies has shown an increasing need for accurate and timely analyses of the location and state of displaced people. Satellite images allow the pinpointing of populations concerned and the geographical context of their surroundings.

For protection purposes it is important to be able to access data on, for example, a refugee camp location and its distance from and access to international borders, potential risks from natural hazards as well as access to water and firewood. Up-to-date satellite images also provide detailed information on current road networks and affected areas in case of seasonal flooding – crucial for effective logistical support.

In protracted displacement situations, satellite tools can be used to monitor the situation, support intra-camp project activities or study the installation of camp health and security features. When people are displaced from villages or camps by outbreaks of conflict, satellite imagery can provide a reliable tool to quickly assess the situation and the damage caused to infrastructure on the ground. The time saved in such cases is substantial, as is the advantage offered by acquiring visual references on the ground before deploying field teams and exposing them to unknown risk. In all other cases, satellite imagery can unlock information concerning areas that may be too remote, too large or simply under restricted access for security or other reasons. After a massive earthquake, for example, it is often impossible to know which roads are still usable unless satellite imagery is used. Lastly, good quality imagery can be used to assess and even investigate possible violations of human rights in the context of refugee crises or conflict situations.

Examples of use

Since 2001, UNOSAT – the UN Institute for Training and Research's Operational Satellite Applications Programme – has been providing satellite-based solutions to the UN family, IFRC, ICRC, NGOs and government agencies. One of the most recent and striking uses of satellite imagery was in the wake of Cyclone Nargis that struck Myanmar (Burma) in May 2008. Within hours satellite images indicated the path and impact of the cyclone. In the days that followed, UNOSAT provided a range of images (see left) indicating the extent of standing flood waters and destruction of villages.

In 2007, fighting in Lebanon forced the majority of the 27,000 Palestinian refugees living in the densely populated Nahr El Bared camp to flee, leaving behind some 3,000-5,000 refugees, including children, sick and the elderly. Humanitarian organisations were not allowed access to the camps but UNOSAT was able to provide detailed damage assessments. The information was used to monitor the humanitarian situation and provide evidence on

which the Lebanese government could base their requests for international assistance and funding for the affected population.

Operation Murambatsvina in Zimbabwe was a government-led campaign to clear slum areas during which over 2.4 million people, most notably urban and rural poor, were affected. The international community had limited access to the areas concerned. The above images from Harare, taken before and after the event, reveal the clearance of large areas (outlined in red) in several townships. As a result of the demolition of houses and small businesses, most of the residents had no option but to flee their homes.

Following Kenyan elections in late December 2007, disputed results caused widespread violence, both in the capital Nairobi and in the Rift Valley. More than 800 people were reported killed and many residential areas were torched. Maps depicting locations of fires were rapidly produced and detailed damage assessments were made possible using satellite imagery.

In early February 2008, civil conflict in Chad forced a large number of people to flee the capital N'Djamena and seek refuge in neighbouring Cameroon. Satellite images were able to detect the presence of individual people crossing the border, making it possible to estimate the total number of people leaving N'Djamena for Cameroon at that time.

Future potential

A common misconception is that the cost of satellite-based solutions is very high. In fact, the cost has fallen steadily over the years and constitutes only a very small part of the overall budget of a humanitarian operation. Another common myth is that one can use satellite imagery to track the flow of people, for example refugees, moving on the ground. This is not correct as images taken by satellites are snapshots collected only once per day at best. Conversely, past limitations such as the impact of cloud coverage have been overcome; radar satellites now allow us to see through clouds and at night.

In future, more satellites with higher level of details will become available for civilian use, thus further improving access to this valuable source of information. Imagery from space will not replace information collected on the ground but it is a useful complement to it, being objective, available when required and able to cover large areas.

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Witchcraft and displacement

Jeff Crisp

There is a longstanding and well-documented relationship between human displacement and witchcraft allegations.

In the late 17th century, for example, the Salem Witch Trials in New England (which led to widespread executions and imprisonment) took place in an area that was seriously affected by violence and forced migration. According to one author:

"The port town of Salem in the county of Essex lay at the edge of the war zone. Into the county came hundreds of frightened refugees from villages to the north and west that had been raided by the French and Indians. These displaced people spread all over Salem township, including the farming community of Salem Village to the west."[1]

Some 300 years later, in October 2007, UNHCR issued a press release which demonstrated that the phenomenon of witchcraft allegations continues to be linked to population displacement. Titled 'Witchcraft allegations plague southern Chad's camps', the press release stated:

"When 11 refugees fell ill and died within a single week earlier this year at the Dosseye refugee camp in southern Chad, witchcraft allegations swirled through the community and led to cases of assault and arson." "In one incident," it continued, "three siblings died within an hour and Adjara, a widowed mother of eight in the camp, was attacked by 15 others who accused her of cursing the children."

Recent UNHCR evaluation missions to Angola and southern Sudan have demonstrated that witchcraft allegations can also be an important gender and protection issue in the context of refugee return. In Sudan, for example, the evaluation team encountered examples of allegations of witchcraft against returnees and accusations that they were bringing HIV/AIDS into the community. The evaluation team that visited Angola met an NGO that had been obliged to establish a 'safe house' for the protection of older women who had been accused of witchcraft.

Prompted by such evidence, the Policy Development and Evaluation Service (PDES) has undertaken a very rapid assessment of the current state of knowledge about refugee protection and witchcraft allegations. PDES has concluded:

1. Witchcraft allegations occur regularly and globally in the refugee, IDP and returnee context.

2. Women, children and older persons are disproportionately affected by witchcraft allegations, although allegations against adult males are not unknown.

3. While witchcraft allegations are sometimes dealt with by formal judicial systems, they are more frequently associated with arbitrary forms of 'justice' and punishment.

4. Witchcraft allegations impinge upon the protection of displaced people in a number of ways:

   - Refugees, IDPs, returnees and asylum seekers who are accused of witchcraft often experience serious threats to their physical, material and psychological welfare.

   - When host and local populations make allegations of witchcraft against refugees, IDPs and returnees who have arrived in their community, tensions are created between the two groups that obstruct the process of integration or reintegration. Witchcraft allegations consequently undermine the primary UNHCR objective of creating 'a favourable environment for protection'.

   - It would appear that witchcraft allegations are increasingly being used as a basis for asylum claims in the industrialised states. There is also disturbing evidence that the number of child abuse cases involving witchcraft allegations and young asylum seekers is on the rise.

   - There is evidence to suggest that some refugees and asylum seekers are not accessing appropriate health-care services because they attribute their illness to witchcraft.

5. Our understanding of this issue is limited. While scattered references can be found to witchcraft allegations in UNHCR documents, for example, this phenomenon and the humanitarian community's response to it have not been the subject of any concerted attention.

On the basis of these findings, UNHCR's Policy Development and Evaluation Service PDES is planning to undertake a global documentation and literature review on this topic in an attempt to develop a better understanding of the magnitude and implications of this issue. Anyone who wishes to contribute to this initiative is welcome to contact crisp@unhcr.org.

Jeff Crisp (crisp@unhcr.org) is Head of UNHCR's Policy Development and Evaluation Service (www.unhcr.org/pdes/).

1. Peter Charles Hoffer 'Salem Witch Trials' www.mrellingson.com/Puritan%20PDf's/Salem%20Witch%20Trials%20Cotton%20Mathers.pdf

RAISE Reproductive Health Access, Information and Services in Emergencies

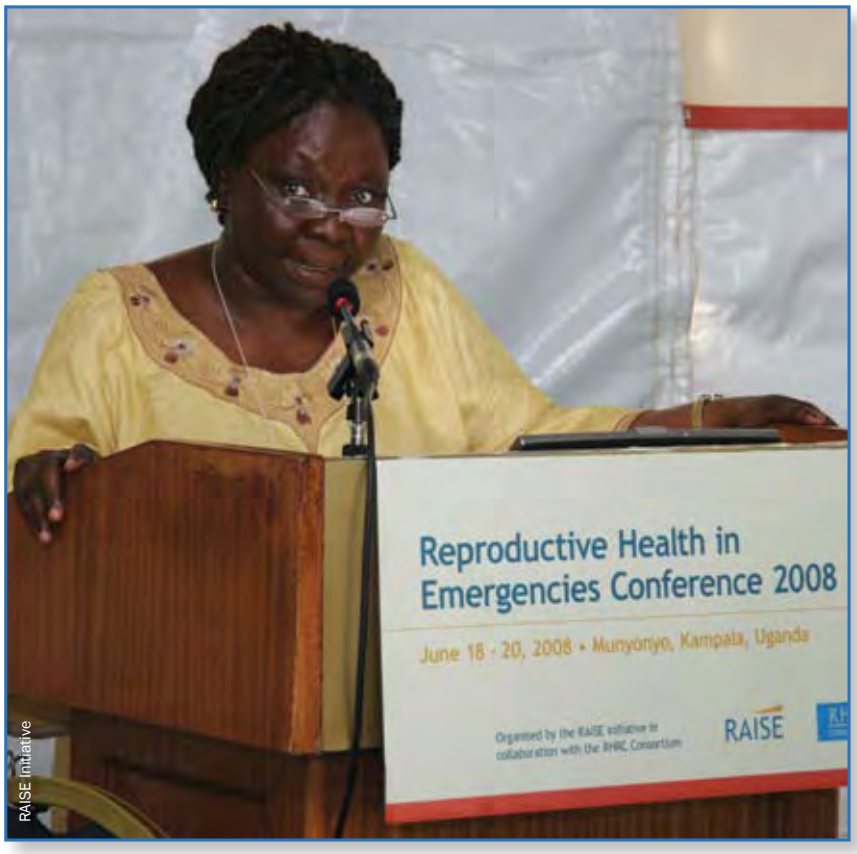
Reproductive health in emergencies: new initiatives, renewed commitment

Claire Tebbets

Reproductive Health (RH) in Emergencies Conference 2008 was held 18-20 June in Kampala, Uganda, to address current RH issues in emergency settings and to contribute to the expansion of comprehensive RH services in such settings.

The conference, a joint venture between the Reproductive Health Access, Information and Services in Emergencies (RAISE) Initiative[1] and the Reproductive Health Response in Conflict (RHRC) Consortium[2], was the third in a series of conferences dedicated to the topic of RH in humanitarian emergencies.[3] It brought together 485 professionals from the fields of RH in emergencies, global RH, humanitarian assistance and development from more than 50 countries worldwide.

There was a strong Ugandan presence at the conference, with more than one-quarter of participants attending from host country organisations. Uganda itself has a significant population of internally displaced persons (IDPs); recent estimates place the number at nearly one million. Thirteen presentations targeting issues of RH in conflict-affected areas of the country allowed Ugandan and international colleagues alike to address current challenges and opportunities in the field.



Dr Grace Kodindo addressing the conference.

"Make no mistake – reproductive health care saves lives and changes lives. It re-asserts the dignity of those from whom fundamental reproductive rights and human rights have been stripped." Therese McGinn, Director, RAISE Initiative

Outcomes

Throughout the conference, plenary and panel speakers echoed the sentiment that IDPs and refugees must be included in the planning and implementation of services. Additionally, the following key themes emerged from conference discussions:

1. Improving maternal health remains a priority. To this end, field staff must ensure access for all women to emergency obstetric care (EmOC), family planning, post-abortion care and safe abortion where legal. Such services are often not prioritised in emergency settings – but can be. Pentecostal Mission Unlimited Liberia reported positive results of a community-based family planning programme; in a region with a recent history of conflict, the programme has been successful in increasing contraceptive prevalence.[4]

2. Globally, sexual violence persists in conflict and disaster settings. Psycho-social support and clinical management of sexual violence, including availability of emergency contraception, post-exposure prophylaxis for HIV

IUD and implant demonstration.

and sexually transmitted infection treatment, are critical elements of gender-based violence response and should be launched in the early stages of an emergency. The public health community also needs to increase its commitment to the prevention and treatment of HIV and AIDS, services frequently overlooked in crisis settings. In the Central African Republic, the International Rescue Committee (IRC) found that, despite obstacles, coordination between primary health care teams and psychosocial teams can be established for successful implementation of confidential, safe and measurable response to sexual violence in the early stages of an emergency.[5]

3. Both relief and development organisations should prioritise capacity building and collaboration

New and under-utilised technologies

In addition to traditional panels, poster presentations and roundtable discussions, a new feature of RH in Emergencies Conference 2008 was a demonstration of new and under-utilised technologies. Participants visited 15 displays featuring hands-on exhibits, audio and video presentations, and discussions with experts. There they learned about – and practised using – tools and technologies useful for field practitioners working in RH in emergency settings, including the following:

US-based NGO PATH has developed two new contraceptives: a new female condom designed with extensive input from users,[9] and a next-generation diaphragm, designed for greater comfort and ease of use than previous models.[10] PATH has also developed a number of medication technologies, including single-dose Nevirapine applicators mothers can administer at home to prevent mother-to-child transmission of HIV.[11]

In the field, Marie Stopes International (MSI) staff use Marie Stopes Ligation (MSL), or minilaparotomy for tubal ligation, a tool valuable in emergency settings because it can be provided in low-resource settings and by a trained mid-level provider (where allowed by law). To facilitate the success of the procedure in such settings, MSI has also developed an MSL kit – containing all necessary equipment – that can be easily sterilised in an autoclave.

While certain comprehensive EmOC services can be provided only at the referral level, basic emergency obstetric and neonatal care (EmONC) services can be provided locally in low-resource settings. IRC has demonstrated the efficacy of this approach with displaced populations in Sudan, Pakistan and Liberia. With trained staff, the seven basic EmONC signal functions (administration of parenteral antibiotics, administration of uterotonic drugs, administration of parenteral anticonvulsants, manual removal of placenta, removal of retained products, assisted vaginal delivery and neonatal resuscitation) can be provided within a primary health care centre setting.

A new motorcycle ambulance suitable for use over rough terrain is now being put into service in countries such as Zimbabwe, Malawi and Uganda in order to transport patients, including women with obstetric emergencies, from remote settings to facilities equipped to provide lifesaving care.[12]

At the RAISE Eastleigh Training Centre in Nairobi, health workers receive clinical training in RH in order to improve the quality of care provided in refugee camps and hospitals in Kenya. During the conference, centre staff demonstrated correct insertion and removal techniques for contraceptive implants and intrauterine devices, using anatomical models (see photo above).

Human resources

Weak health systems are a threat to the health of women and their families in low-resource settings throughout the world. This is especially true in emergency settings where health facilities are often understaffed and unequipped – if not lacking altogether. These conditions pose serious challenges to the provision of good RH services.

One solution proposed in recent years is the utilisation of mid-level providers to offer essential services. In countries like Mozambique, Malawi and Tanzania, assistant medical officers, clinical officers and surgical technicians are carrying out procedures previously done only by physicians. In these countries, mid-level providers are performing the majority of Caesarean sections at district hospital level, among other procedures. In addition to offering both a cost-effective solution to a lack of human resources and improved staff retention rates over physicians, the quality of care provided by mid-level providers is equivalent to that provided by physicians.[13]

Recruiting and retaining health workers has proven challenging in northern Uganda, where those working in conflict zones often lack the training to provide quality RH care. In response, Pius Okong, President of the Association of Obstetricians and Gynaecologists of Uganda, suggests that associations of health care professionals should establish emergency response teams equipped to organise RH services in crisis settings, as well as create a database of local providers trained in RH care in emergency settings, in order to facilitate a rapid response.[14]

with local actors. Dr Fred Akonde, of RAISE and Marie Stopes Kenya, reported that one of the main challenges in implementing RH services in crisis settings is the lack of training among field staff. Through his work at the RAISE Eastleigh Training Centre in Nairobi (see box opposite), Dr Akonde has shown that competency-based training for health workers can improve the quality of RH care provided in such settings.[6]

4. Strengthening health facilities and systems is essential to the provision of quality RH services in emergencies. Two crucial components of this process are strengthening the human resource sector (see above) and improving logistics and supply management.

Expert opinion: Dr Grace Kodindo


RAISE Initiative

"In the West, one woman in 2,800 dies as a result of pregnancy or childbirth. In Chad, that number is one in eleven. The situation can be yet worse for refugees and IDPs. The solution is clear: we need stronger health systems and increased access to good quality RH care.

Basic technology available in the West since the 1950s is lacking in many developing countries, contributing greatly to health disparities. Blood transfusions, Caesarean sections and essential drugs like antibiotics, magnesium sulphate and oxytocic drugs can make all the difference. In many places I visit there is no functioning health system – not even a blood bank. Haemorrhage is one of the primary causes of maternal death; a woman can die in as little as two hours from blood loss. We need blood banks and other basic care, together with appropriately trained staff, to be available to all women in our countries.

We also need to increase health care coverage, especially in rural areas. In such areas, health centres can function well without a doctor or a specialist, or even a fully trained midwife. Mid-level providers can offer the basic care needed at the local level and refer complicated cases to higher-level facilities."

Now an advisor to the RAISE Initiative, Dr Kodindo is a leading expert in the organisation and implementation of RH services and the improvement of EmOC services in order to reduce maternal mortality.

"Now we must accelerate efforts to scale up reproductive health services for refugees, displaced persons and people affected by disasters." Thoraya Obaid, Executive Director of UNFPA, in a statement written for RH in Emergencies Conference 2008

5. Numerous challenges confront both supply chain and transport management in crisis settings, ranging from organisational capacity to national policies.

6. Within the already vulnerable populations of refugees and IDPs, youth and other under-served groups, such as sex workers, are especially at risk; particular attention must be paid to their RH needs. To this end, Save the Children has developed an adolescent RH service package for RH managers and health workers to address adolescent RH needs in humanitarian emergencies.[7]

7. The public health and development communities must make better use of data.[8] It is vital to collect good quality data and use it to improve service delivery and programme management in emergency settings. Data can act as a powerful tool for advocacy and must be brought to policymakers, donors and programme staff.

"Though I am somewhat overwhelmed by the scope and the amount of work yet to be done to improve the health of women in crises, I am leaving with energy and commitment to ensure that the news is better next time we meet!" Conference participant

Claire Tebbets (cot2101@columbia.edu) is a Project Support Officer for the RAISE Initiative, based out of Columbia University.

1. www.raiseinitiative.org
2. www.rhrc.org
3. The fourth conference will take place in 2011. For more information about RH in emergencies and the programme and abstracts of the 2008 conference, see www.raiseinitiative.org
4. RH in Emergencies 2008 Book of Abstracts, p13: www.raiseinitiative.org/conf2008/
5. Abstracts, p71 6. Abstracts, p7 7. Abstracts, p40
8. See RAISE article 'Challenges of collecting baseline data in emergency settings', FMR29 www.fmreview.org/FMRpdfs/FMR29/68-70.pdf
9. See www.path.org/projects/womans_condom.php
10. See www.path.org/files/TS_update_silcs.pdf
11. See www.path.org/files/TS_update_nevirapine.pdf
12. See www.eranger.com
13. More information available through Health Systems Strengthening for Equity at: www.midlevelproviders.org
14. Abstracts, p66

IDPs from Chechnya in the Russian Federation

Nadine Walicki

Displaced people from Chechnya are still struggling to integrate outside the North Caucasus, despite being citizens of the Russian Federation.

Some 57,000 IDPs have returned to Chechnya despite the volatile security, while about 70,000 remain displaced in the North Caucasus. An unknown number of IDPs from Chechnya are living elsewhere in Russia.

The Internal Displacement Monitoring Centre (IDMC) visited the Russian Federation in early 2008 and interviewed IDPs from Chechnya of various ethnic backgrounds in seven locations outside the North Caucasus. Regardless of their ethnic background, these IDPs are unwilling to return to Chechnya because they believe their physical security there would be at risk. Yet they struggle to settle outside the North Caucasus.

Difficulties securing documents

Many IDPs lack the documents necessary to lead a normal life. They struggle to extend or regain their status as forced migrants and acquire the residence registration, internal passports and documents needed to receive benefits they are entitled to. The main reasons for this are that their original documents were destroyed during the conflict and the criteria for extension of forced migrant status are interpreted too narrowly. Without these documents, IDPs are prevented from applying for jobs and accessing services and entitlements such as state-provided housing, free medical care and their full pension. The issuance of documents to IDPs should be facilitated without imposing unreasonable conditions that they cannot meet because they have been displaced. Procedures should also be in place to ensure officials issue documents to IDPs lawfully according to set criteria and without discrimination.

Lack of adequate housing

IDPs are still without durable housing solutions despite a government property compensation and housing programme. IDPs who received this compensation lost their status as forced migrants and so have had to leave government housing. However, the property compensation has increasingly become insufficient for them to buy alternative housing. A new federal housing programme has proven unreliable in providing IDPs with permanent housing due to lack of funds and slow implementation. Additional funds should be allocated to the programme and IDPs still in need of adequate housing should be included regardless of whether they have forced migrant status or have received property compensation.

Discrimination

Ethnic Chechen IDPs are treated differently than others when applying to receive or renew documents and may face other particular difficulties on account of their ethnicity. They have been forced to move frequently by landlords unwilling to rent to them for extended periods or to register them as resident in the dwelling. Some claim they were denied employment because they were ethnic Chechen. The police frequently check the passports of ethnic Chechen men, who must often pay bribes since they do not have valid documents. This limits their ability to move freely in their area of residence and around the country.

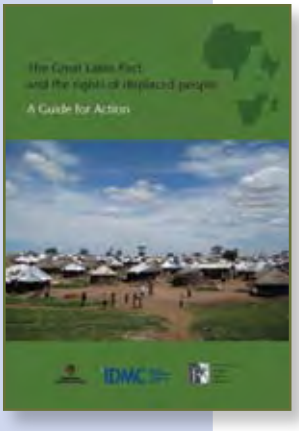
Some non-ethnic Chechen IDPs also reported experiencing differential treatment in applying for jobs and renting apartments as a result of Chechnya being listed as their area of origin in their internal passport.

The federal and regional governments of Russia have made efforts to improve the lives of IDPs living in and beyond the North Caucasus. These include compensation for lost or destroyed property and the rights and entitlements associated with forced migrant status. These efforts notwithstanding, IDPs from Chechnya living outside the North Caucasus are still struggling to settle in their current places of residence. A final, concerted effort is needed to solve the remaining problems facing these IDPs and continue the process through which they will be able to enjoy the same conditions as their fellow citizens.

Nadine Walicki (nadine.walicki@nrc.ch) is a Country Analyst at IDMC. The report **Struggling to integrate: Displaced people from Chechnya living in other areas of the Russian Federation** *is based on IDMC's visit to the Russian Federation in March 2008, and can be accessed at: www.internal-displacement.org/countries/russianfederation.*

The Great Lakes Pact

On 21 June 2008, the Pact on Security, Stability and Development in the Great Lakes Region entered into force, having been ratified by Burundi, CAR, Congo, DRC, Kenya, Rwanda, Tanzania and Uganda. IDMC and the International Refugee Rights Initiative (IRRI) have produced a guide for NGOs and civil society organisations to use the Pact to strengthen the rights of displaced people in the Great Lakes region. The Guide focuses on three of the Pact's Protocols that are of most relevance for refugees and IDPs.



The Guide is online, in English and French, at www.internal-displacement.org/greatlakes.

REFUGEE STUDIES CENTRE

Events, courses and conferences

Palestinian refugees and international law

25-26 October 2008
This two-day workshop examines, within ahuman rights framework, the policies andpractices of the Middle Eastern states asthey impinge upon Palestinian refugees.

Harrell-Bond Lecture 2008

19 November: 5pm, University Museum, Oxford
The Rt Hon Sir John Waite, co-chair of the UK's Independent Asylum Commission, will speak on 'Asylum: a new perspective'. All welcome.

Statelessness

9-11 January 2009 - dates to be confirmed

Psychosocial responses to conflict and forced migration

7-8 February 2009
This two-day workshop examines mental health and psychosocial support in emergency and protracted refugee settings.

Conference: International protection in a changing world

23-24 March 2009

International Summer School in Forced Migration

6-24 July 2009
The summer school offers an intensive,interdisciplinary and participative approach to the study of forced migration. It enables people working with refugees and other forced migrants to reflect critically on the forces and institutions that dominate the world of the displaced. The course is aimed at experienced practitioners involved with assistance and policymaking for forced migrants – and graduate researchers specialising in the study of forced migration.

Full details of all RSC courses are at www.rsc.ox.ac.uk

For more information, please contact Katherine Salahi at katherine.salahi@qeh.ox.ac.uk
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Journal of Refugee Studies

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Reproductive Health Access, Information and Services in Emergencies (RAISE) Initiative

Save the Children UK

Spanish Agency of International Cooperation

Swiss Agency for Development and Cooperation (SDC)

Swiss Federal Department of Foreign Affairs

UNDP

UNEP

UNFPA

UNHCR

UNICEF

Women's Commission for Refugee Women and Children

World Food Programme

World Vision Australia

World Vision International

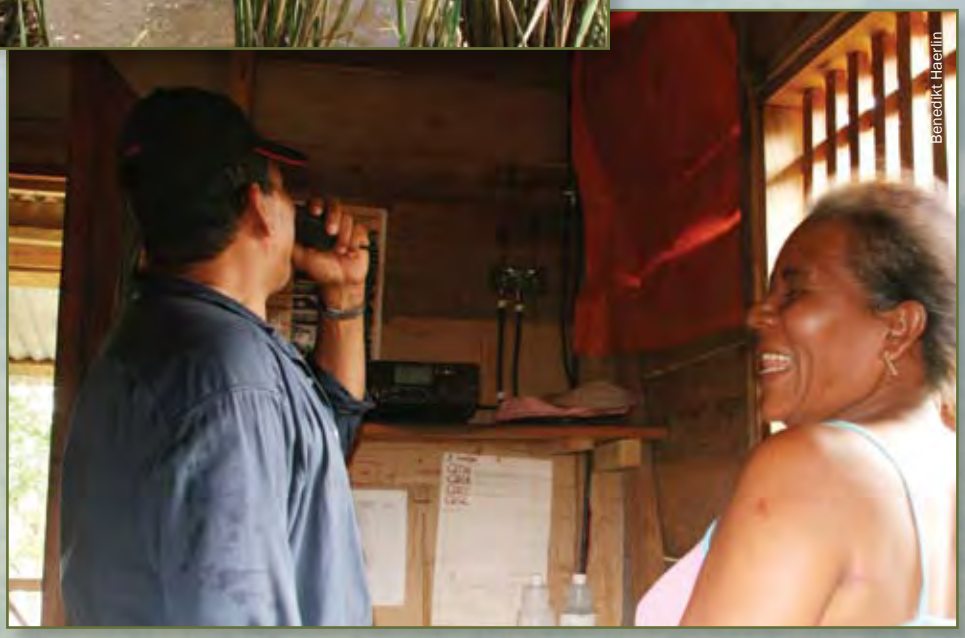
ZOA Refugee Care

Watch the wind

Community preparedness in Nicaragua

"If the water comes I am not afraid. I can swim, my sister can swim and we have a boat. But the rice can't swim and my father's house can't swim either."

Manuel Modena
(12 years old)
Rio Coco, Miskito Nation, Nicaragua



"I am the radio-operator of San Carlos. We report on the water level and rainfall every day and we have a great responsibility in emergencies. But the radio serves all kind of purposes now: information on prices, family news, appointments, health emergencies and, you know, a lot of jokes as well: it's fun!"

Ilia Wellington
Shop-keeper and radio-operator, San Carlos, Nicaragua

"The river is our life. It provides us with water, fish, transport and beauty. But sometimes it has brought us death as well, and not because of the crocodiles: the river has washed away whole villages.

I am in charge of the civil defence in the Waspam municipality. We collect information on rainfall, the river's water level and the weather forecast, and inform our colleagues down the river Coco. We also work with colleagues in Honduras, where the river begins.

When the rain starts and the water rises, we have only two hours to warn the folks downstream. Sometimes it's a matter of half an hour. Sometimes, the rain comes fast and heavy. 70,000 people live along the 700 kilometres of the Rio Coco. We have now established a chain of 40 radio stations that can send and receive the alarm and can constantly inform us on the daily precipitation.

Yes, we are better prepared for the dangers of the river now. But when the hurricane comes – what can we do? It comes every ten years or so: Fifi in 1972, Joan in 1988, Mitch in 1998, Beta in 2005. We have practised and we have emergency plans now: the people gather in the churches, which are usually the sturdiest buildings, and watch the wind take their properties – but at least not their lives."

Damaso Leiv
Head of the civil defence department, Waspam, Nicaragua

From **Adapting to Climate Change: Practical Perspectives**, *GTZ, 2008. Online at www.gtz.de/en/dokumente/en-climate-adaptation.pdf*