

migration  
climate

COMPENDIUM of IOM'S ACTIVITIES in

**MIGRATION,  
CLIMATE CHANGE  
AND THE  
ENVIRONMENT**

change  
environment



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IOM International Organization for Migration

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IOM is committed to the principle that humane and orderly migration benefits migrants and society. As an intergovernmental organization, IOM acts with its partners in the international community to: assist in meeting the operational challenges of migration; advance understanding of migration issues; encourage social and economic development through migration; and uphold the human dignity and well-being of migrants.

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This IOM publication was prepared by Patrice Quesada (Migration Policy and Research - MPR / Emergency and Post-Crisis Migration Management - EPC), in coordination with Mario Lito Malanca (EPC).

It is the result of inter-departmental cooperation under the overall supervision of Philippe Boncour (MPR, IOM Migration and Climate Change Focal Point) and Pasquale Lupoli (Operational Support Department - OSD).

The compendium is comprised of two main parts:

- Part I presents an overview of IOM's roles in the area of migration, climate change and the environment. It features an analysis of current trends, in terms of programmes, as well as an analytical summary of the diverse and valuable lessons learned from hands-on project implementation.

Special thanks to Katharina Lehmann (MPR) and Charlotte Maquin (MPR) for their support in the preparation of this part.

- Part II is a compilation of 28 country programme profiles and four regional profiles. Each profile offers a concise description of the environmental challenges faced by a given country or region, followed by the IOM programmatic responses and lessons learned. It also includes a number of project proposals, representing a new generation of initiatives addressing issues of migration, climate change and the environment.

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# Selected Acronyms and Abbreviations

AECID	Spanish Agency for International Cooperation and Development
AGFUND	Arab Gulf Programme for United Nations Organizations
AIG DRF	American International Group Disaster Relief Fund
AusAID	Australian Agency for International Development
CBDRM	Community-based disaster risk management
CBMMP	Capacity building in migration management programme
CCA	Climate Change Adaptation
CCCM	Camp Coordination and Camp Management
CCEMA	Climate Change, Environment and Migration Alliance
CHF	Common Humanitarian Fund
COI	Indian Ocean Commission
DFID	United Kingdom Department for International Development
DIPECHO	Disaster Preparedness European Commission Humanitarian Aid
DP	Disaster preparedness
DRM	Disaster risk management
DRR	Disaster risk reduction
DTM	Displacement Tracking Matrix
EC	European Commission
ECHO	European Commission Directorate-General for Humanitarian Aid
ECOWAS	Economic Community of West African States
EWEA	Early Warning Early Action
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GIS	Geographic Information System

HFA	Hyogo Framework for Action
HuMa	Humanitarian Medical Assistance
IA RTE	Inter Agency Real Time Evaluation
IASC	Inter-Agency Standing Committee
ICRC	International Committee of the Red Cross
IDMC	Internal Displacement Monitoring Centre
IDP	Internally displaced person
IFRC	International Federation of the Red Cross and Red Crescent Societies
IPCC	Intergovernmental Panel on Climate Change
ISDR	International Strategy for Disaster Reduction
ISS	Institute for Security Studies
JNAM	Joint UN Need Assessment Mission
LDCs	Least Developed Countries
LDSC	Latter-day Saint Charities
MCA	Mobile Community Assistance
MCRAM	Multi-Cluster Rapid Assessment Mechanism
MRF	Mission with Regional Functions
NAPA	National Adaptation Programme of Action
NFI	Non-food item
NGO	Non-Governmental Organization
NMP	National Migration Profile
NRC	Norwegian Refugee Council
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
OFDA	Office of the United States Foreign Disaster Assistance
OSCE	Organisation for Security and Co-operation in Europe
OTI	USAID Office of Transition Initiatives
RSG on HR of IDPs	Representative of the UN Secretary General on Human Rights of Internally Displaced Persons
SDC	Swiss Agency for Development and Cooperation

SEI	Stockholm Environment Institute
SGBV	Sexual and gender-based violence
SIDA	Swedish International Development Cooperation Agency
SIDS	Small island developing States
SOPs	Standard Operating Procedures
SP	Samaritan's Purse
SSR	Security Sector Reform
STI	Sexually Transmitted Infection
TICAD	Tokyo International Conference on African Development
UN-HABITAT	United Nations Human Settlements Programme
UN-CERF	United Nations Central Emergency Response Fund
UNCT	United Nations Country Team
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNSC	United Nations Security Council
UNU- EHS	United Nations University- Institute for Environment and Human Security
USAID	United States Agency for International Development
VN	Vulnerability Network
WASH	Water, sanitation and hygiene
WFP	World Food Programme
WHO	World Health Organization

WV	World Vision
WWF	World Wildlife Fund

## Foreword by William Lacy Swing

The consequences of climate change for migration present humanity with an unprecedented challenge. The incidence of storms, droughts and floods have increased threefold over the last 30 years, with devastating affects on vulnerable communities, particularly in the developing world. In 2008, extreme weather events displaced 20 million persons, compared to 4.6 million people displaced within their own countries by conflict and violence over the same period. How many people will climate change affect by 2050? Forecasts vary from 25 million to 1 billion people, with a figure of 200 million being the most widely cited estimate.

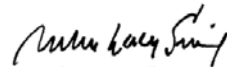
As the world's leading migration agency, the International Organization for Migration (IOM) endeavours to stay abreast of trends and issues that have an impact on the more than 212 million migrants worldwide. Since the early 1990s, IOM has been active in the area of migration, climate change and the environment, and has carried out programmes to address this challenge in more than 40 countries in the Pacific, Latin America, Asia and Africa. In many of these areas, we have assisted those affected by hurricanes, severe flooding and drought.

IOM's activities have constructed a solid foundation of first-hand experiences and lessons learned that have energized the Organization's policy and research. We have sought to enhance our knowledge through research and publications that examine the complex relationship between migration, climate change and the environment. In doing so, we have been able to identify emerging trends, raise awareness, and work towards innovative solutions that are sensitive to specific local conditions.

This Compendium charts the lineage of thought and action on a subject matter whose significance will increase in the years to come. It maps out the complex terrain that is the relationship between societies and their environment through an illustrative range of projects, from providing humanitarian response to displacement caused by natural disasters, to promoting adaptation to gradual environmental

degradation. The Compendium serves to demonstrate that despite the scale of the task ahead, we can develop in partnership creative solutions for communities affected by environmental and climate change.

Addressing the unprecedented challenge requires unprecedented partnership – collaboration among international organizations, civil society, the private sector, the academic world, and governments. In sharing IOM's experience and perspective as laid out in this Compendium, we hope our expertise contributes to global dialogue and efforts within the United Nations Framework Convention on Climate Change and beyond.



*Doreen Kary Simiyu*  
Director General

Part I  
Analytical  
overview:

Taking stock to move  
forward





# Chapter I. Climate Change, Environmental Degradation and Migration: A Comprehensive Approach to Address a Complex Nexus

## Migration and the Environment: A Changing Relationship

The environment has always contributed to shaping population movements, influencing the distribution of the human population across the planet. Throughout history, people have left places with harsh or deteriorating conditions. For many people living in harsh environments, migration is the preferred option to maintain their livelihoods.

However, over the last two decades, the nature and scale of environmental migration has begun to change. As early as 1990, the Intergovernmental Panel on Climate Change (IPCC) stated that “one of the gravest effects of climate change may be those on human migration.”<sup>1</sup> This statement was substantiated by the IPCC’s *Fourth Assessment Report*<sup>2</sup> in 2007, which showed that climate change is likely to raise the risk of humanitarian emergencies and trigger population movements as a result of increasingly intense weather events, sea-level rise and accelerated environmental degradation, including coastal erosion and desertification.

- Desertification affecting Mexico’s dry land regions already causes 600,000 to 700,000 people to migrate from these areas annually.
- Tropical storm Ondoy (Ketsana) swept across Metro Manila on 26 September 2009. It flooded 80 per cent of the city, home to 12 million people, and forced some 700,000 people to move to 726 evacuation shelters.

Some depict these events as the “new reality” in relation to climate change, a reality that is already affecting many countries around the world.

<sup>1</sup> IPCC (1990) *First Assessment Report*, Policy Maker Summary of Working Group 2 (Potential Impacts of Climate Change), p. 103, para. 5.0.10.

<sup>2</sup> IPCC (2007) *Climate Change 2007: Impacts, Adaptation and Vulnerability*, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, <http://www.ipcc.ch/ipccreports/ar4-wg2.htm>

### *Lack of reliable estimates*

Although the geography and scale of future movements of people is even more difficult to predict than the details of climate change itself, the probability is high that an increasing number of people will migrate for predominantly environmental reasons. The most widely cited figure predicts 200 million environmental migrants by 2050.<sup>3</sup> This number is equivalent to current estimates of the total number of international migrants worldwide.

This figure, however, should be put into perspective. All in all, forecasts of the number of persons on the move due to climate change and environmental degradation by 2050 vary by a factor of 40 (between 25 million and 1 billion). These estimates also largely depend on which of the scenarios put forward by the IPCC with regard to the advance of climate change will materialize.<sup>4</sup>

### *Environmental migration: A complex typology*

The ability of countries and populations to adapt to a changing climate will also largely determine how environmental migration will play out in the future. Furthermore, it would be misleading to conceive of the linkages between climate change, environmental degradation and migration as simple linear causalities, for there are complex interdependencies between migration and the environment.

Natural hazards include climate-related hazards such as tropical storms and floods and their secondary impacts like landslides. They also include geological hazards such as earthquakes or volcanic eruptions. Natural hazards can be of the sudden-onset kind, for example, storms and seaquakes; they can also be slow-onset in nature, such as droughts that can last for longer periods of time. Natural hazards turn into **natural disasters** when they wreak havoc on human settlements, taking lives,

<sup>3</sup> Stern, N. (2006) *The Economics of Climate Change: the Stern Review*, "Part II: Impacts of Climate Change on Growth and Development", p. 56, [http://www.hm-treasury.gov.uk/d/Part\\_II\\_Introduction\\_group.pdf](http://www.hm-treasury.gov.uk/d/Part_II_Introduction_group.pdf)

<sup>4</sup> The IPCC bases its projections on six emission scenarios. See IPCC (2007) *Fourth Assessment Report*, <http://www.ipcc.ch/ipccreports/ar4-wg2.htm>

destroying livelihoods, including homes and infrastructure, and forcing people to flee for sheer survival.

- Cyclone Nargis struck the Irrawaddy Delta region in Myanmar in May 2008. It severely affected 2.4 million people and led to the displacement of 800,000 people.

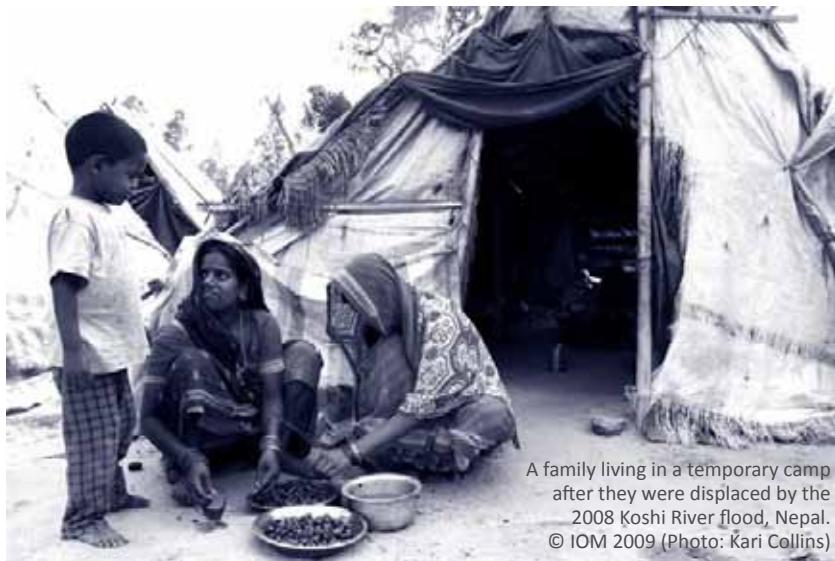
The findings of a joint report by the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), the Internal Displacement Monitoring Centre (IDMC) and the Norwegian Refugee Council (NRC) show that at least 36 million people were displaced by the sudden-onset natural disasters that occurred in 2008.<sup>5</sup> More than half of the displacement – 20 million persons – was due to climate-related events, and it has been suggested that the number of displaced persons will rise as the frequency and intensity of extreme weather events increase.

Yet, these sudden, large-scale movements are often temporary and localized, with cross-border movement occurring if there are no other escape routes. In most cases, return might be possible, especially if adequate support is offered.

Gradual environmental change includes processes such as desertification, reduction of soil fertility, coastal erosion and sea-level rise. **Environmental degradation** occurs when these processes negatively affect human livelihoods and the ecosystem services a community depends on. Exacerbated by climate change, these phenomena are often also provoked or aggravated by unsustainable forms of development. These processes have a medium- to long-term impact on existing livelihood patterns and systems of production. They may trigger different types of migration.

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<sup>5</sup> OCHA/IDMC (2009) *Monitoring disaster displacement in the context of climate change - Findings of a study by the United Nations Office for the Coordination of Humanitarian Affairs and the Internal Displacement Monitoring Centre*, [http://www.internal-displacement.org/8025708F004BE3B1/\(httpInfoFiles\)/12E8C7224C2A6A9EC125763900315AD4/\\$file/monitoring-disaster-displacement.pdf](http://www.internal-displacement.org/8025708F004BE3B1/(httpInfoFiles)/12E8C7224C2A6A9EC125763900315AD4/$file/monitoring-disaster-displacement.pdf)



A family living in a temporary camp after they were displaced by the 2008 Koshi River flood, Nepal. © IOM 2009 (Photo: Kari Collins)

**In the early and intermediate stages of environmental degradation,** migration can represent a logical and legitimate livelihood diversification option. It is an adaptation strategy for affected populations to help them cope with the effects of environmental degradation and climate change. In this context, migration is likely to be temporary, circular or seasonal in nature.

**However, when environmental degradation becomes severe or irreversible,** for instance, due to sea-level rise, migration can become permanent and may require relocation of affected populations, either internally or in another country. Several studies in Western Africa have found that persistent droughts and land degradation contributed to both seasonal and permanent migration.

- In the Faguibine System area in Mali, nearly half of the population migrated in response to an extended dry period in the 1980s that led to the virtual disappearance of Lake Faguibine. Many of the people who stayed were unable to continue their traditional activities.

Overall, a much larger number of people is expected to migrate due to gradual deterioration of environmental conditions rather than natural disasters, even if, in most cases, their fate does not catch headlines. In many parts of the world, environmental degradation and natural

disasters combined can have devastating effects, as in Eastern Africa where heavy rain that often follows drought season can lead to flash floods. Populations exposed to such cumulative vulnerabilities are particularly at risk.

**Migration, especially the mass influx of migrants, can affect the environment in places of destination and origin, and along routes of transit.** In particular, unrestrained urbanization, as well as camps and temporary shelters, may put a strain on the environment if improperly managed.

- In Bolivia, 1,500 people are displaced annually to the city of Trinidad and settle in flood-prone areas in the outskirts of the city.

**This two-way connection between migration and the environment can result in a vicious circle.** If inadequately managed, large-scale movements can lead to overexploitation of natural resources and further destruction of peoples' livelihoods in the host environment. This may, in turn, provoke further migration and displacement, in addition to creating tension with the receiving communities.

Yet, out-migration in places of origin may alleviate population and land-use pressure, sometimes allowing a degraded local ecosystem to recuperate. This complex interaction between human beings and their environment makes it difficult to predict the scale of future movements.

### *Addressing environmental migration through the prism of human security*

Another main obstacle for any precise prediction on future environmental migration lies in the lack of automatism between a specific climate change phenomenon and the response in terms of human mobility. In most cases, environmental factors are not the only drivers of migration. This is particularly evident in cases of slow-onset environmental degradation, when a decision on whether to stay or move and where to go is intrinsically associated with individual, cultural, social, political and economic factors.

However, this is also true in the wake of disasters:

- A person's socio-economic position heavily influences the potential impact of a natural disaster, as proven by Hurricane Katrina, which hit the United States in August 2005 and killed over 1,800 people and displaced another million along the US Gulf Coast. The hurricane confirmed the fact that the people who are hardest hit by natural disasters, particularly the urban poor and the elderly, are also the most vulnerable and least mobile populations.

Migration, therefore, is a coping strategy not open to everyone. It depends not only on resources and information, but also on other social and personal factors, such as physical condition and precise adaptive capacity. The most vulnerable are most often those who cannot move; they are the ones who die when famine strikes as they have nowhere to go.

### *For the people, with the people*

The concept of **human security** offers a comprehensive framework to approach vulnerabilities of affected communities and address the risks and root causes of environmental migration. Through a context-specific approach, human security seeks prevention-oriented solutions to guarantee and promote the human security of vulnerable persons. To do so, it looks not only at environmental security, but also at individual, economic, and food security, as well as health, community and political security.

**Focusing on environmental migration through the prism of human security means placing the individual, particularly the most vulnerable, at the centre of concern.**

The approach takes into account the human rights of individuals as well as the legitimate development aspirations of communities, while thoroughly considering the security concerns of countries.

The concept of human security promotes synergies and collaboration between different actors and disciplines. By involving people at the

local level and concentrating efforts on empowering concerned individuals, communities and national authorities, such an approach facilitates ownership and sustainability in the long run. Its compatibility with other types of need assessments is of particular relevance when intervening in complex emergencies.

- In a situation of protracted conflict, as is the case in Sudan, environmental degradation, potentially exacerbated by climate change, is likely to feed conflict. Therefore, environmental security has to be integrated into humanitarian assistance and protection offered to displaced persons.

Human rights, in particular, are an integral part of the human security framework, both in their function as an assessment tool and as an aim worth achieving. They offer an important basis for individual lives in safety, dignity and security. In cases where natural disasters or environmental degradation already led to the displacement or migration of people, international human rights law places a responsibility on every state to protect the human rights of all people in their territory, including non-nationals migrating due to environmental factors.

### *Vulnerability assessment*

The human security approach confirms that human vulnerability to environmental factors is compounded by a broad range of issues that include demographic pressure, poor urban governance, declining ecosystems, poverty, conflicts and vulnerable rural livelihoods. In this context, climate change is acting as a threat multiplier that exacerbates these underlying structural factors of vulnerability.<sup>6</sup>

Most vulnerable to both the increased risk of natural hazards and environmental degradation are least developed countries (LDCs),

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<sup>6</sup> In an effort to reduce human, social, economic and environmental losses due to natural hazards and related technological and environmental disasters, the International Strategy for Disaster Reduction (ISDR) promotes increased awareness of the importance of disaster reduction as an integral component of sustainable development. For further information, see also Part I, Chapter 3 of this Compendium.

due to their low adaptive capacity, and countries with particularly susceptible geographies, such as Pacific small island developing States (SIDS).<sup>7</sup> Economically and socially marginalized groups within affected communities – the poor, the elderly, indigenous communities, women and children – are also particularly vulnerable.

Statistically, natural disasters kill more women than men, or kill women at a younger age than men. In 1991, for example, it was recorded that a cyclone in Bangladesh resulted in the death of five times more women than men.<sup>8</sup>

It is therefore essential to mainstream considerations of gender, age and diversity into the analysis of climate change consequences and focus policy responses on these groups.

### *What are they called?*

People migrating for environmental reasons do not fall squarely within any one particular category. Rather, environmentally induced migration is best understood as a continuum, ranging from clear cases of forced migration to clear cases of voluntary movement, with a large grey zone in between.<sup>9</sup>

The same can be observed when looking at the categories provided by the existing international legal framework.

For forced migration as a result of environmental factors within a given country, the Guiding Principles on Internal Displacement<sup>10</sup>

<sup>7</sup> SIDS are small islands and low-lying coastal countries that share similar sustainable development challenges, including a small population, lack of resources, remoteness and susceptibility to natural disasters. In April 1994, the first Global Conference on Sustainable Development of SIDS was convened in Barbados. The conference adopted the Barbados Programme of Action (BPoA) that set forth specific actions and measures to be taken at the national, regional and international levels. The BPoA was followed in 2005 by the so-called Mauritius Strategy for 2005-2015 that not only recognizes climate change as a threat, but also refers to the need for adaption and disaster risk reduction in line with the ISDR Hyogo Framework for Action. More information is available at <http://www.un.org/smallislands2005/>.

<sup>8</sup> Additional information available at: <http://www.unfpa.org/public/site/global/lang/en/pid/4028>.

<sup>9</sup> Hugo, G. (1996) "Environmental concerns and international migration", *International Migration Review*, Special Issue: Ethics, Migration and Global Stewardship, 30(1): 105-31.

<sup>10</sup> For further information on the Guiding Principles on Internal Displacement, please visit [http://www.brookings.edu/projects/idp/gp\\_page.aspx](http://www.brookings.edu/projects/idp/gp_page.aspx)



are applicable and it is essential to ensure that they are respected. However, movements across internationally recognized borders raise serious legal issues. In general, environmental migrants do not qualify as “refugees” under the 1951 Refugee Convention.<sup>11</sup> Further, there is a consensus among concerned agencies, in particular within the United Nations High Commissioner for Refugees (UNHCR),<sup>12</sup> that the use of terms such as “environmental refugee” or “climate refugee” is misleading and has no legal basis in international refugee law. As it could potentially undermine the international legal regime for the protection of refugees, this terminology should be avoided.

In an effort to capture the complexity and breadth of the phenomenon, IOM has advanced the following working definition of environmental migrants, which was put forward at the 94<sup>th</sup> IOM Council in 2007:<sup>13</sup>

*Environmental migrants are persons or groups of persons who, predominantly for reasons of sudden or progressive changes in the environment that adversely affect their lives or living conditions, are obliged to leave their homes or choose to do so, either temporarily or permanently, and who move either within their country or abroad.*

### *Environmental migration: IOM's role and objectives*

IOM, as the leading intergovernmental organization in the field of migration, is dedicated to promoting humane and orderly migration for the benefit of migrants and societies.

<sup>11</sup> Joint submission to the UNFCCC Secretariat, November 2008, “Elaboration of the precise terminology and adequate typology concerning environmental migration: Climate Change, Migration and Displacement: Who will be affected?” Prepared by IOM in collaboration with UNHCR, the Representative of the UN Secretary General on the Human Rights of Internally Displaced Persons (RSG on the HR of IDPs), OCHA and other IASC organizations, available at <http://unfccc.int/resource/docs/2008/smsn/igo/022.pdf>.

<sup>12</sup> For additional information on UNHCR's position on terminology used in relation to environmental migrants, please see the UNHCR Policy Paper: “Climate change, natural disasters and human displacement: A UNHCR perspective”, <http://www.unhcr.org/4901e81a4.html>

<sup>13</sup> Additional information can be found in the Council Discussion Note: “Migration and the Environment”, MC/INF/288, [http://www.iom.int/jahia/webdav/shared/shared/mainsite/about\\_iom/en/council/94/MC\\_INF\\_288.pdf](http://www.iom.int/jahia/webdav/shared/shared/mainsite/about_iom/en/council/94/MC_INF_288.pdf)

**IOM is convinced that ensuring human security in today's world requires addressing the complex interaction between migration, the environment and climate change.**

Until now, migration in the face of environmental degradation and climate change figures in the thought processes and policy making of many stakeholders merely as a worst-case scenario that brings chaos and violence to regions of origin and destination and routes of transit. Indeed, unmanaged migration is a problem that needs to be addressed. Through its work, IOM is making the case that migration in the context of climate change does not necessarily have to be a worst-case scenario. On the contrary, migration can also be understood as an adaptation strategy to the impact of climate change under some circumstances, particularly in the early stages of environmental degradation. Yet, for migration to become a viable alternative – an adaptation strategy that increases the resilience of vulnerable populations – environmental migration needs to be managed, in particular with a view to enhancing positive and sustainable developmental outcomes.

**It is one of IOM's primary objectives to ensure that migration can be a choice and to prevent forced migration.**

Migration reduces reliance on the environment for livelihoods, by allowing income diversification through remittances. Migration can help reduce risk to lives, livelihoods and ecosystems, and enhance the overall capacity of households and communities to cope with the adverse effects of environmental and climate change. The contributions of migrants through the transfer of knowledge and skills upon their return can significantly strengthen the livelihoods of families and communities facing environmental challenges.

#### Migration as an Adaptation Strategy in Practice – The Example of Colombia

Many areas of Colombia are subject to severe environmental risks that are exacerbated by a high poverty rate and a range of conflict- and crime-related challenges.

The Colombian Temporary and Circular Labour Migration (TCLM) programme, an innovative model of temporary and circular labour migration between Colombia and Spain, can serve as a concrete illustration of how migration can be used as an adaptation strategy for vulnerable populations. It offers a livelihood alternative through temporary work abroad to families confronted with natural disasters, enabling affected zones to recuperate.

The programme also supports migrants and their families in maximizing the impact of remittances on the recovery of the affected area through public and private co-funding and international cooperation, and takes into account the needs of the most marginalized populations in rural communities. In 2007, for instance, 162 women received training in leadership and local development to bolster their capacity as potential agents of development. As such, TCLM is an important contributor to sustainable development, enabling local populations to increase their resilience to environmental challenges and offering them an alternative to permanent migration, whether to urban slums or abroad.

#### Migration as an Adaptation Strategy in Practice – The Example of Guatemala<sup>14</sup>

Guatemala is exposed to seasonal hurricanes, flash floods, landslides, floods and droughts, while poverty, environmental degradation, crowding in high-risk areas, poorly planned infrastructure and insufficient preparedness heighten its vulnerability.

A survey on remittances and the environment, carried out in 2008, revealed that Hurricane Stan in 2005 forced inhabitants of municipalities in Sololá, particularly the poor living in degraded areas, to flee to other communities to save their lives.

The study had no conclusive findings with regard to the incidence of extreme environmental hazards on international migration: only 1 per cent of the respondents, comprised of Guatemalans living abroad, indicated that they had migrated as a result of natural disasters. This underlines that factors ranging from economic to sociological come into play in the decision to migrate.

However, the survey confirmed that Guatemalans living abroad provide major support for populations affected by natural hazards in their country of origin, through a sharp increase in remittances for reconstruction in the aftermath of disasters. A relevant indicator is the fact that families receiving remittances usually live in concrete houses (94.5%) that help them to better cope with natural hazards.

For further information on the two projects, please see <http://www.iom.int/Template/gmaps/migenv.htm>

IOM's programmatic action has constructed a solid foundation of first-hand experiences and lessons learned which energize the organization's policy and research on the issue. In turn, the cross-fertilization between strategic thinking and investigation and IOM's activities on the ground has created a new generation of projects, and earned IOM its place at the avant-garde of international agencies active in the area of migration and climate change.

#### *Policy-oriented research*

Sound data are key to understanding the complex relationship between migration and the environment and developing effective policies and

<sup>14</sup> IOM (2008) *Survey on Remittances 2008 and Environment*, Working Notebooks on Migration, No. 26, Guatemala, <http://www.iom.org.gt/documents/Working%20Notebook%20No.%2026.pdf>

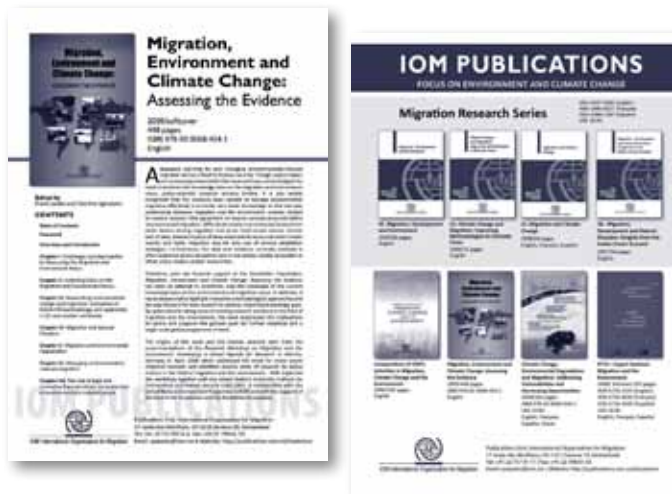
programmes. The limited availability of reliable data and resulting knowledge gaps are important obstacles to moving forward in this area. Therefore, IOM has developed a research agenda which attempts to enhance the knowledge base in the following areas:

- *Conceptualizing migration and the environment*: What are the definitions and concepts needed for both research and policy? What are their strengths and limitations? How can they be improved?
- *Data collection and estimates*: How many people will migrate and where? How can climate models be improved and account for the multi-causality of migration? How can migration and environment data sets be enhanced and/or harmonized? How can household surveys be better utilized?
- *Chronic environmental degradation and natural disasters*: To what extent is the environment the primary driver of migration? What migration patterns emerge in response to different environmental stressors? What socio-economic factors need to be considered with regard to vulnerability (who migrates and who does not)? How can migrants assist in efforts to build resilience back home (remittances, social capital, etc.)? What can be learned from analysing “hotspots” and “tipping points”?
- *Managing environmental migration*: How can research be more effectively linked to policy? What policies and initiatives currently exist to address internal and international migration, from prevention and mitigation policies to return and reintegration? What lessons can be learned from existing government responses? How can policies reduce vulnerability? How can migration be used as part of adaptation strategies?
- *Capacity building*: How can capacity be built, particularly in developing countries, to collect and analyse data and inform policy makers?

IOM's latest publication, *Migration, Environment and Climate Change: Assessing the Evidence*, builds upon this research agenda by offering a

selective review of evidence to date on the aforementioned areas. At the same time, it offers a framework for researchers and policy makers to further enhance the knowledge base in these areas.

IOM is committed to promoting the organization's work on migration and the environment through its publications and by commissioning forward-thinking research on this issue of increasing importance. Since 1992, IOM has dedicated a number of publications to exploring and improving understanding of the links between migration, the environment and climate change, as well as the role of other mediating factors such as development.



### *Key partnerships*

To stand up to the challenge posed by environmental migration, it is crucial to involve different types of actors in the cooperation and bring together government, international organizations, civil society, private sector and academia.

IOM is committed to close cooperation with all relevant stakeholders to develop more comprehensive strategies to better manage environmental migration and address the potential impacts of migration on the environment.

### *Climate Change, Environment, and Migration Alliance (CCEMA)<sup>15</sup>*

In order to create an appropriate informal framework for the necessary multi-stakeholder and multidisciplinary cooperation in the area of migration and the environment, IOM, together with United Nations Environment Programme (UNEP), United Nations University (UNU) and the Munich RE Foundation, have established the Climate Change, Environment, and Migration Alliance (CCEMA). Today, in addition to these four founding members, the Alliance's members include OCHA, Stockholm Environment Institute (SEI), University of Sussex and World Wildlife Fund (WWF) International.

**The Alliance aims to bring migration considerations to the environment, development and climate change agendas and vice versa. This objective is pursued through a combination of awareness raising, research, policy development and practical actions.**

The Alliance is conceived as a multi-stakeholder global partnership of concerned actors such as international organizations, interested groups of states and representatives of the private sector, the scientific and professional community, and civil society. These actors represent a broad range of perspectives on environment, migration development and humanitarian assistance. IOM is also providing administrative and organizational support for the CCEMA work programme development.

### *Cooperation in the Inter-Agency Standing Committee (IASC) framework<sup>16</sup>*

There has been growing cooperation on climate change, environment and human mobility among the humanitarian agencies, most notably within the framework of the IASC.

IOM, together with the International Federation of the Red Cross and Red Crescent Societies (IFRC), UNHCR and the Representative of the

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<sup>15</sup> For further information, please visit the CCEMA webpage: <http://www.ccema-portal.org/>

<sup>16</sup> The IASC is a unique inter-agency forum for humanitarian coordination and, for its members, a policy development and decision-making forum involving key UN and non-UN humanitarian actors. The IASC was established in June 1992 in response to UN General Assembly Resolution 46/182 on the strengthening of humanitarian assistance. Additional information on the IASC can be found at [www.humanitarianinfo.org/iasc](http://www.humanitarianinfo.org/iasc).

UN Secretary General on the Human Rights of Internally Displaced Persons (RSG on the HR of IDPs), has taken an active role within the IASC process in incorporating climate change into the humanitarian agenda. In particular, following a request from the IASC Working Group, IOM, in coordination with the IASC Secretariat and in cooperation with other agencies, carried out a series of informal inter-agency meetings and consultations to develop appropriate terminology and typology on migration and displacement and climate change, and identify possible operational and analytical gaps in the context of the humanitarian response.

IOM, in collaboration with its partners from the IASC, is actively promoting the inclusion of the impact of climate change on human mobility in the final version of the United Nations Framework Convention on Climate Change (UNFCCC) agreement, which is expected to be signed in Copenhagen in December 2009. This is mirrored in a wide range of different activities and contributions as illustrated in the text box below.

#### Joint submissions to the UNFCCC

Comments and proposed revisions to the negotiating text prepared by the Chair of the UNFCCC Ad Hoc Working Group on long-term cooperative action

<http://unfccc.int/resource/docs/2009/smsn/igo/055.pdf>

(Non-paper prepared by IOM, UNHCR, NRC and UNU, with the support of the RSG on the HR of IDPs)

Elaboration of the precise terminology and adequate typology concerning environmental migration: Climate Change, Migration and Displacement: Who will be affected?

<http://unfccc.int/resource/docs/2008/smsn/igo/022.pdf>

(Prepared by IOM in collaboration with UNHCR, the RSG on the HR of IDPs, OCHA and other IASC organizations)

Climate change, migration, and displacement: Impacts, vulnerability, and adaptation options

<http://unfccc.int/resource/docs/2008/smsn/igo/031.pdf>

(Prepared by IOM, UNHCR, UNU, NRC and the RSG on the HR of IDPs)

Climate change adaptation strategies for local impact

<http://unfccc.int/resource/docs/2009/smsn/igo/054.pdf>

(Prepared by IFRC, Red Cross/Red Crescent Climate Centre and ProVention Consortium, with input and support from OCHA, Action by Churches Together (ACT) and IOM)

Climate change and statelessness

<http://unfccc.int/resource/docs/2009/smsn/igo/048.pdf>

(Prepared by UNHCR, supported by IOM and NRC)

Protecting the health of vulnerable people from the humanitarian consequences of climate change and climate-related disasters  
<http://unfccc.int/resource/docs/2009/smsn/igo/047.pdf>  
(Prepared by the World Health Organization (WHO), together with IOM, World Vision, UNHCR and IFRC)

IOM, in cooperation with other IASC agencies concerned with the issue of human mobility (UNHCR, the RSG on the HR of IDPs, NRC and UNU), also participated in a number of side events to the UNFCCC climate-change talks since Poznan in December 2008, all the way to Copenhagen a year later, in December 2009.



## Chapter II. Environmental Migration: Some Facts and Figures on IOM's Programmatic Activities

### A few dates: IOM humanitarian response to displacement induced by natural disasters

*Since Hurricane Mitch, Honduras 1998*

Dealing with population movements, from resettlement to humanitarian assistance and protection for the displaced, has naturally put IOM in a position to intervene in the aftermath of natural disasters. Looking back at the past decade, Hurricane Mitch hit Central America in October/November 1998 and wreaked havoc in Honduras, leading IOM to deploy one of its largest humanitarian operations in response to a natural disaster: this was only the beginning. Since 1998, more than 500 projects have been funded around the world in the context of IOM's response to environmental migration.

Honduras after Mitch (1998): From Temporary Shelters to Permanent Housing



Young victims of Hurricane Mitch wait for IOM relocation assistance. A series of temporary shelters have been set up to house those who have lost their homes.

© IOM 1998 - MHN0002  
(Photo: Charles Porcel)

Because of the devastation brought by Hurricane Mitch, thousands of Hondurans were forced to seek temporary shelter in schools and similar buildings. On 1 December 1998, the Government of Honduras requested technical assistance from the United Nations (UN) in the design of a plan to transfer flood refugees who had been staying in schools and other public and private buildings to temporary shelters, where they would continue to receive assistance while permanent housing solutions were being sought.

To support national reconstruction, IOM established a mission in the country on 16 December 1998. The immediate need was to know precisely how many people had been left homeless, since this data would enable IOM to design an assistance plan

for Hurricane Mitch flood refugees. In January 1999, with the financial support of the Swedish Government through the United Nations Development Programme (UNDP) and with the support of the United Nations Volunteers (UNV), IOM mobilized 100 surveyors to carry out a census survey of the refugee population located in schools and other buildings in 44 municipalities in 13 of the country's departments.

This census showed that two months after the disaster, there were still 26,667 internally displaced persons (IDPs) living in schools and other temporary shelters. Educational institutions turned into shelters represented 62 per cent of all the structures used for this purpose. Thus, it was urgent to free them, as the academic school year was starting soon. Construction of new shelters and permanent housing in Tegucigalpa and other affected areas soon followed.

To provide timely and adequate humanitarian assistance, the Organization often has to rely on its existing presence and capacities on the ground for interventions and support for national and local authorities.

### *Six years later, the Indian Ocean tsunami, 2004*

The Indian Ocean tsunami in December 2004 was also an important test for the Organization's humanitarian response capacities. With an unprecedented amount of funding – approximately USD 120 million in 2005 for emergency response and reconstruction efforts in Indonesia, Sri Lanka and Thailand – IOM further consolidated its role as a key and reliable humanitarian actor in the response to natural disasters. The devastation brought by the seaquake was of an unprecedented scale, and international response was further complicated by other large-scale operations in response to major earthquakes in Indonesia (March 2005) and Pakistan (October 2005), which occurred only a few months after the tsunami.

### *IOM in humanitarian reform, 2005*

Also in 2005, in the context of the humanitarian reform process, IOM assumed the strategic role of global cluster lead for Camp Coordination and Camp Management (CCCM) in Natural Disasters with a responsibility within the IASC to ensure that assistance is provided to the victims. IOM also participates actively in other clusters like Emergency Shelter, Logistics, Health, Protection or Early Recovery. Depending on its field presence at a given location, IOM also engages with other clusters

in order to provide assistance to displaced populations and other vulnerable groups.

## **A few figures: IOM projects from emergency response to sustainable development**

### *From emergency and post-crisis...*

For the past five years, IOM's involvement in responding to displacement induced by natural disasters accounts for a significant share of the Organization's emergency and post-crisis activities. From 2005 to 2008, funding received for such efforts almost reached USD 300 million.

More specifically, for the past two years (2007 and 2008), projects in response to displacement induced by both sudden- and slow-onset natural disasters represented one-third of the total number of projects within IOM's Emergency and Post-Crisis Department. These projects accounted for approximately 25 per cent of the funding received by the department for the period.

The increasing importance of natural disasters in IOM's emergency response was also highlighted through IOM's strong involvement in the UN joint appeal system.<sup>17</sup> Between 2004 and 2008, IOM participated in 26 flash appeals and submitted requests for funding equivalent to USD 200 million. IOM's participation often depends on its existing capacities on the ground – a key criteria for timely emergency response – as well as on IOM's commitment to fulfilling its responsibilities as global cluster lead for CCCM in natural disasters, including acting as a provider of last resort.<sup>18</sup>

As highlighted throughout this Compendium, IOM's activities in migration, climate change and the environment are not limited to its

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<sup>17</sup> Information on the different joint appeals, including flash appeals, is available at <http://ocha.unog.ch/fts/pageloader.aspx>.

<sup>18</sup> It represents a commitment of cluster leads to do their utmost to ensure an adequate and appropriate response. For additional information on the concept of "provider of last resort", see the Operational Guidance endorsed by the IASC in June 2008 and available at <http://www.humanitarianreform.org/humanitarianreform/Portals/1/Resources%20&%20tools/OPGUID-ANCE-ProviderofLastResort-F.doc>.

emergency response, although as emergency responses often require substantial funding, they increase the Organization's visibility in this sphere of work. IOM has been and continues to be strongly involved in the recovery phase and in community stabilization efforts to rebuild livelihoods and offer durable solutions for displaced persons and their communities.

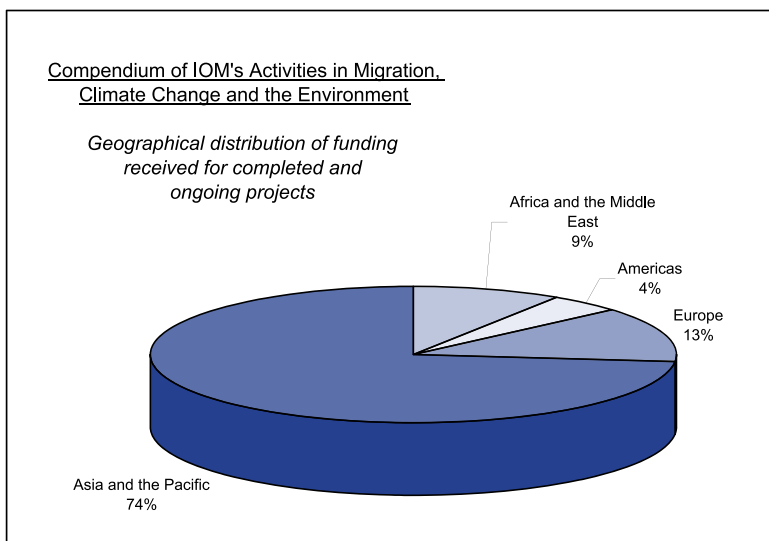
- Of IOM projects related to natural disasters in 2007 and 2008, community stabilization/post-crisis projects represented 46 per cent of the total number of projects endorsed, while 54 per cent were emergency/immediate assistance responses.

### *... to sustainable development*

A number of major activities have also been implemented to prevent forced migration or facilitate regular labour migration out of areas experiencing environmental degradation. These types of activities related to migration and development also represent an important area of work for IOM when dealing with the cross-cutting issue of environmental migration. Because they look at all the factors of vulnerability to support sustainable forms of development and human security, these types of activities often consider – and correctly so – environmental aspects as only one factor among many others. Although these activities are related to migration and the environment, they are usually not specifically labelled as such. This Compendium also highlights a number of initiatives in conflict situations where it is necessary to integrate environmental considerations into programming.

## **What is in the Compendium?**

The present *Compendium of IOM's Activities in Migration, Climate Change and the Environment* contains information drawn from 28 countries and four subregions in Africa, the Americas, Asia and the Pacific, Europe, and the Middle East (see list below). It features a vast variety of programmes implemented in the past ten years and worth a combined amount of approximately USD 280 million. **Although the Compendium presents a comprehensive review of the types of projects IOM has developed and implemented, note that it does not offer an exhaustive list of the countries that IOM has dealt with, or the projects that the Organization has engaged in.**



The challenges posed by climate change have led the Organization to further emphasize environmental factors in its programmatic responses. Taking into account the lessons learned from successful migration and development programmes, a series of new project proposals illustrate what can be done to comprehensively address the challenges posed by climate change to human mobility, as well as to contribute to climate change adaptation. These project proposals are presented in this Compendium.

Six programme profiles in five countries and one subregion have been incorporated because of their relevance to the issue of climate change. In a number of countries where IOM is implementing or has implemented projects, the programme profile also includes a proposed way forward in terms of IOM's programmatic response to environmental migration and climate change adaptation. The list of countries and subregions appearing in the Compendium also indicates the status of IOM's activities at the end of 2009.

## Compendium: List of selected countries and project implementation status

AFRICA	Status
Angola	Completed
Egypt	Project proposal
Ethiopia	Completed and project proposal
Kenya	Ongoing and project proposal
Madagascar	Project proposal
Mali	Project proposal
Mauritius	Project proposal
Mozambique	Ongoing
Senegal	Ongoing
Sudan	Ongoing
Zimbabwe	Completed
Subregions	
Eastern Africa	Project proposal
Southern Africa	Completed
<b>AMERICAS</b>	
Bolivia	Completed and project proposal
Haiti	Ongoing
Mexico	Completed
Peru	Completed
Trinidad and Tobago	Completed
<b>ASIA AND THE PACIFIC</b>	
Bangladesh	Ongoing
Cambodia	Completed and project proposal
Indonesia	Ongoing
Myanmar	Ongoing
Nepal	Completed and project proposal
Pakistan	Ongoing
Philippines	Completed
Timor-Leste	Ongoing and project proposal
Subregions	
Central Asia	Completed
North Pacific	Ongoing

EUROPE	
Azerbaijan	Ongoing
Kosovo/UNSC 1244	Ongoing
MIDDLE EAST	
Syria	Project proposal
Yemen	Completed





## Chapter III. IOM's Experience in Environmental Migration: Key Findings and Lessons Learned

As previously stated, **it is one of IOM's primary objectives to ensure that migration can be a choice and to prevent forced migration.**

IOM has been operationally active around the world to address displacement in the context of its migration crisis management strategies and programmes, and also to deal with migratory pressure out of areas experiencing harsh environmental conditions.

Because of the negative impacts of climate change on people's environment in most parts of the world, increased human mobility is expected. If left unmanaged, environmentally induced migration can have disastrous consequences, primarily for individuals and their communities. When a certain critical mass is reached, unmanaged migration can also have security implications for concerned countries with the potential to spill over across borders to neighbouring territories.

### **What can be learned from IOM's programmatic activities for addressing these challenges?**

The purpose of this *Compendium of IOM's Activities in Migration, Climate Change and the Environment* is to take stock of IOM's experience in addressing environmental factors and utilize this expertise to contribute to adaptation to a changing climate.

The aim of the present Compendium is not to present a comprehensive picture of IOM humanitarian responses in crisis and post-crisis contexts, or in the areas of migration and development or migration and health. Rather, the purpose is to highlight how some of IOM's experiences from around the world can be geared towards addressing environmental migration in the context of climate change.

Nevertheless, the Compendium presents an opportunity to emphasize the decisive role of IOM, notably within the humanitarian community.

In recent years, IOM has worked closely with a range of partners<sup>19</sup> to provide emergency humanitarian assistance in contexts of acute crisis, including mass migration induced by natural disasters, conflicts or a combination of both in so-called complex emergencies. In 2005, in the context of UN-led humanitarian reform, IOM assumed a strategic role as lead of the Camp Coordination and Camp Management (CCCM) Cluster for Natural Disasters. The Organization also actively participates in the Logistics, Early Recovery, Health, Emergency, Shelter and Protection Clusters. IOM's experience and expertise is reflected in a number of documents, in particular the Camp Management Toolkit.<sup>20</sup>

## Climate change and the environment through the prism of human mobility

As IOM looks at climate change and environmental degradation from a human mobility point of view, this chapter is structured around the different phases of the migration management cycle. For each phase, lessons learned and good practices are identified in five sections, with cross references to the country or region where they have been tested and implemented. It also highlights some of the challenges faced by practitioners.

### *The migration management cycle*

In areas prone to natural disasters, as well as in areas severely affected by the effects of climate change, the foremost objective is to **reduce unmanaged migration pressure, preventing forced migration while also ensuring that migration that takes place is managed** (Section 1).

However, despite investment in prevention measures, some displacement still occurs, exposing populations to risk of severe hazards. **Displacement** is often a survival strategy: if not possible, it

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<sup>19</sup> IOM operates within the framework of the IASC, an inter-agency forum for coordination, policy development and decision-making that was established in June 1992 in response to United Nations General Assembly Resolution 46/182 on the strengthening of humanitarian assistance. IASC involves the key UN and non-UN humanitarian partners, including FAO, OCHA, UNDP, UN-FPA, UN-HABITAT, UNHCR, UNICEF, WFP, WHO, ICRC, and IFRC. Information available at <http://www.humanitarianinfo.org/iasc/>

<sup>20</sup> The Camp Management Toolkit is available at: <http://www.nrc.no/camp#>.

can lead to significant human loss and **should therefore be prepared for in order to minimize human suffering and the loss of livelihoods**. In the context of environmental degradation, such as sea-level rise or desertification, which can render some areas uninhabitable, it also means **preparing for relocation** (Section 2).

**When displacement occurs**, it is important to intervene quickly and decisively to **manage** it and address urgent humanitarian needs (especially the need for shelter, food and health), as well as to ensure effective protection. In general, environmental migration, as much as any form of migration, should be managed to the extent possible (Section 3).

Mass migration, including displacement, can have negative consequences on the environment and on livelihoods in receiving communities. Tackling these issues requires **mitigating the impact of migration** on the communities of destination (Section 4).

Finally, if **forced migration occurs**, it needs to be **addressed** to avoid protracted situations. Looking for **durable solutions**<sup>21</sup> in most cases of displacement induced by natural disasters or environmental degradation means ensuring **sustainable return**. If return is not possible or not wanted, **local integration or relocation** should be considered (Section 5).

## General comments and lessons learned: Cutting across the migration management cycle

### *The importance of comprehensive programming*

As mentioned throughout Part I, Chapter 1, there is a complex interaction between the environment and human mobility, which is compounded by other factors such as poverty and can result in a vicious circle of increased vulnerability. Programmes that are most likely to succeed are those that are based on a comprehensive assessment

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<sup>21</sup> A durable solution to displacement can be achieved through (i) sustainable return; (ii) sustainable local integration; or (iii) sustainable integration in another area. This definition is taken from the Framework for Durable Solutions (currently under revision).

of the situation. Addressing only environmental factors or tackling only displacement is often not enough and even counter-productive in some cases. When stabilizing communities, the objective is to re-establish livelihoods and ensure sustainability – for instance, by taking into account long-term climatic forecasts.

- Pastoralist communities in Eastern Africa affected by drought: IOM and its partners have developed a comprehensive approach to the ongoing cross-border conflict.

### *Addressing and learning from any type of disaster*

IOM has been active in responding not only to climate-induced disasters, but also to geophysical disasters caused by earthquakes or seaquakes and volcanic eruptions. Although these natural hazards are not climate-related, it is of utmost importance not to distinguish between natural disasters and climate-induced disasters when discussing appropriate response strategies. From IOM's viewpoint, the types of displacement witnessed in both contexts are similar in nature and deserve equal attention. The current political focus on climate-related disasters should not shift attention away from the overriding objective of better assisting all victims of natural disasters and displaced persons.

Furthermore, there are many lessons to draw from successful responses to non-climate-related disasters, lessons that are relevant to the whole migration management cycle and applicable within the context of climatic events. Geophysical hazards often have higher destructive power than climatic events when they reach human settlements. By destroying houses, a single earthquake, in a very short time frame, can put a large proportion of the population on the move and in need of shelter. In the long-run, reconstruction efforts are also very demanding and associated with a high risk of secondary displacement (in particular, to urban settlements) if recovery progress is too slow. As shown by the IDMC/OCHA study on displacement induced by sudden-onset natural disasters in 2008, 16 million out of 36 million people have been displaced because of geophysical disasters, and one in particular the Sichuan earthquake in China was responsible for displacing 15 million people, nearly 50 per cent of the total.

## *Events versus processes, or the vicious circle*

In the analysis of linkages between migration and environmental change, a distinction is often made between events and processes. The former includes sudden-onset natural disasters; the latter, slow-onset disasters and environmental degradation. Practitioners, on the other hand, face a more complex reality where both events and processes happen simultaneously. Exacerbated by climate change, they tend to reinforce each other's negative effects in what is described as a vicious circle that increases people's vulnerability. In such cases, repeated interventions in the same area are often needed, for instance, first in response to floods and then to tackle food insecurity related to droughts. Addressing both events and processes at the same time is an important programmatic challenge that this Compendium seeks to highlight.

- In Africa, climate extremes are causing prolonged periods of drought and delayed or erratic rains. In Latin and Central America as well as in Asia, El Niño and La Niña result in droughts and floods.<sup>22</sup>

### *Focus on disaster risk reduction (DRR) and climate change adaptation (CCA)*

The present Compendium is a demonstration of IOM's commitment to integrating DRR and CCA into its programming when addressing the cross-cutting issue of environmental migration. It includes incorporating DRR into crisis and post-crisis responses, as well as integrating DRR into adaptation strategies to address climate change-induced environmental degradation.

IOM is part of the International Strategy for Disaster Reduction (ISDR) Network and is committed to the goals and principles of the

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<sup>22</sup> El Niño is the appearance, every few years, of unusually warm surface waters of the Pacific Ocean along the tropical western coast of South America. It affects fishing, agriculture, and local weather from Ecuador to Chile and can cause global climatic anomalies in the equatorial Pacific, Asia, and North America. La Niña is the cyclic counterpart to El Niño, characterized by a cooling of surface waters of the Pacific Ocean along the western coast of South America. La Niña often follows El Niño, which occur at irregular intervals of about 5 to 10 years.

Hyogo Framework for Action (HFA) “to work with governments and communities to build resilience to hazards.”<sup>23</sup>

In its 2005-2015 action plan under the HFA, the following five priorities for action have been identified:

1. Ensure that disaster risk reduction is a national and local priority with a strong institutional basis for implementation. This step is most relevant to Sections 1 (*preventing*) and 5 (*addressing*) of this chapter.
2. Identify, assess and monitor disaster risks and enhance early warning. This is most relevant to Section 2 (*preparing*).
3. Use knowledge, innovation and education to build a culture of safety and resilience at all levels. This is most relevant to Sections 1 (*preventing*) and 5 (*addressing*).
4. Reduce the underlying risk factors. This is most relevant to Sections 1 (*preventing*) and 5 (*addressing*).
5. Strengthen disaster preparedness for effective response at all levels. This is most relevant to Section 2 (*preparing*).

At the junction of humanitarian assistance and development, DRR tools bring added value to IOM’s efforts to reach its programmatic objectives. These tools are also valid and needed for helping individuals, communities and countries adapt to climate change.

### *From saving lives to promoting sustainable development*

IOM originally referred to its activities as generic disaster risk management (DRM) activities when intervening in crisis situations induced by natural hazards.

- **DRM** characterizes activities that aim to avoid, lessen or transfer the adverse effect of hazards through prevention, mitigation and preparedness.<sup>24</sup>

<sup>23</sup> IOM reiterated its commitment to DRR and CCA during the Second Session of the Global Platform for Disaster Risk Reduction that took place in Geneva on 16-19 June 2009. See IOM press release at <http://www.iom.int/jahia/Jahia/media/press-briefing-notes/pbnEU/cache/offonce/lang/en?entryId=25378>

<sup>24</sup> The three definitions are abridged ISDR definitions. Full versions are available at <http://www.unisdr.org/eng/library/lib-terminology-eng%20home.htm>.

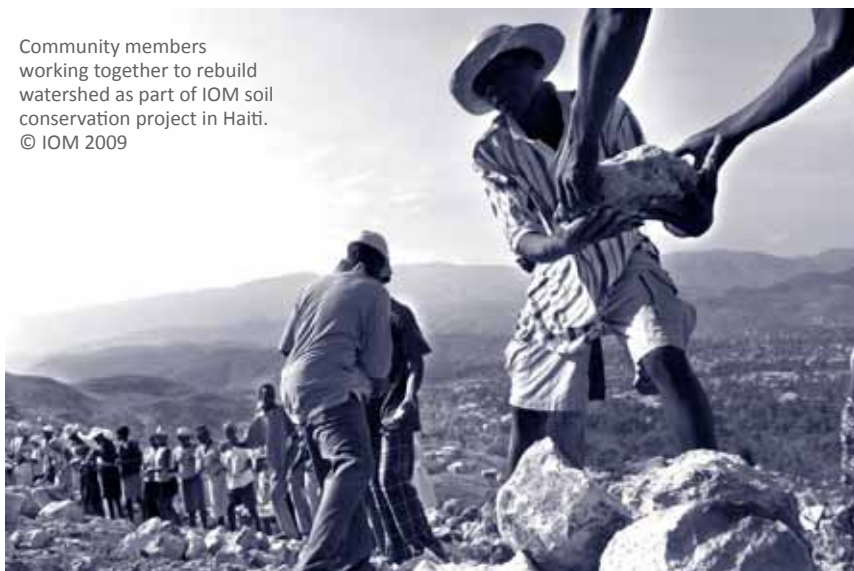
Given IOM's presence on the ground, it is in a strategic position to look beyond managing risk and address its root causes through DRR. This strategy also supports IOM's efforts to build a bridge between its development activities and its humanitarian activities.

- **DRR** includes all efforts that can contribute to reducing risk by analysing and managing the causal factors of disasters.

Climate change adaptation goes beyond considering already existing risks, by integrating the dynamic elements brought by a changing climate that exacerbates the vulnerabilities of affected populations now and in the future. Concretely, it means, when and where relevant, (i) mainstreaming climate-related risk into existing tools, (ii) using existing tools and techniques to identify communities and populations most at risk from climate change, (iii) raising community awareness of climate risks, and (iv) increasing focus on livelihood projects that contribute to adaptation, especially in the agricultural and water sectors, in order to address food and water security.

- **CCA** is about activities contributing to adjustment to actual or expected changes in the system induced by climate change.

Community members working together to rebuild watershed as part of IOM soil conservation project in Haiti. © IOM 2009



## Focus on complex emergencies

IOM intervenes in countries facing complex situations, which are typically characterized by weak governance combined with inter-communal violence, as well as a high level of vulnerability to environmental events and processes. Such countries present a particular challenge as they are most likely to experience the severe adverse impact of climate change on their environment and livelihood. Furthermore, the number of countries that face similar complex situations is expected to increase as a result of natural disasters and environmental degradation exacerbated by climate change. While there are currently around 50 countries that fall into the complex situation category, including failed states, another 50 countries are at risk, partly because of the expected impact of climate change.<sup>25</sup>

Although DRR as presented under the HFA does not make any specific reference to complex emergencies or conflict situations, IOM has been able to apply DRR tools successfully in response complex situations, by integrating DRR into its comprehensive response under the human security approach.

- Sudan: Human security-based assessment of villages and population tracking systems are used as conflict-prevention tools.

The human security approach shows that, in complex situations, the displacement problem cannot be solved by addressing only environmental factors. It also demonstrates that environmental issues and environmentally induced forced migration need to be factored into strategies to address complex emergencies, including conflict management.

### At the crossroads of migration, climate change, the environment...

It is essential to mainstream considerations of gender, age and diversity into the analysis of climate change consequences and build the capacity of economically and socially marginalized groups within

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<sup>25</sup> International Alert (2007) *A Climate of Conflict: The Links between Climate Change, Peace and War*.



societies affected by climate change and displacement, including the poor, children, the elderly, and indigenous peoples. For instance, raising awareness among youths affected by endemic unemployment and engaging them has proved critical for mobilizing community support and involvement, as youths are often more receptive to new opportunities and environmental concerns.

- Senegal: Promotion of youth employment in the environmental sector

### *... and gender<sup>26</sup>*

Climate change exacerbates the imbalance in power relations. In many parts of the world, for instance, the low status of women in the society results in them being worse affected than men, prolonging situations of pre-established inequality. Women's vulnerability is manifested in many ways; the present Compendium describes a number of situations depicting the types of vulnerability of women in the context of environmental migration:

- There are more women than men who die during a disaster. In fact, women and children are 14 times more likely than men to die during natural disasters.<sup>27</sup> This situation, which cannot be attributed to physical factors, is the result of the existing socio-economic and cultural status of women, particularly in developing countries.
- Situations of forced displacement affect women and men differently; hence, their needs for protection and assistance are different. Such situations affect the social fabric influencing family and social structures in very acute ways. This can impact women disproportionately, especially women heads of households, who are left with roles and responsibilities previously held by men in a very challenging environment, while at the same time remaining more vulnerable to exploitation, abuse and gender-based violence.

<sup>26</sup> For more information on IOM and gender, please see <http://www.iom.int/jahia/Jahia/about-iom/organizational-structure/iom-gender>.

<sup>27</sup> Additional information available at: <http://www.unfpa.org/public/site/global/lang/en/pid/4028>.

- In the same perspective, in situations of forced displacement, traditional gender roles are often disrupted. Men who lose their income-providing capacity or are forced to take care of surviving members of the household can experience feelings of powerlessness and loss of identity. In some instances, they may also resort to alcohol abuse and gender-based violence.
- In areas experiencing environmental degradation, where men engage in seasonal migration, women are left on their own in a heightened situation of poverty. In many parts of the world, this situation can be aggravated further by a lack of land-tenure rights or access to property.

IOM is committed to addressing the needs of both men and women and is actively promoting the participation of women in the decision-making process when managing displacement – for instance, in camp-like environments or when addressing displacement through its community stabilization and livelihood programmes. In IOM's experience, women often represent an untapped resource in their communities. IOM believes that adopting a gender-sensitive approach in all its programmes is the only way forward in reaching out to all beneficiaries. Such an approach also implies being culturally sensitive.

- Indonesia: The changing role of women and their empowerment through savings and loans cooperatives

### *... health*

The health of millions of people is impacted each year by the acute and long-term effects of climate change on basic requirements for health: clean air and water, sufficient food and adequate shelter. Climate change will also lead to higher levels of some air pollutants, increased outbreaks and transmission of diseases through unclean water and contaminated food. It also has a potential impact on the nutritional status of affected populations. In line with the human security approach, IOM assesses that such stresses may also lead to forced migration, which in turn compromises health and psychosocial well-being, affecting many lives as well as disrupting health service delivery.

Furthermore, forced migration is associated with a range of health issues, including social isolation, increase in psychosocial and mental health-related concerns and, in many cases, reduced socio-economic status and associated health problems. Furthermore, camps for displaced persons are often sited on marginal lands which may provide breeding sites for disease vectors (e.g. malaria or dengue), and where access to health services may not be available.

Considering the importance of health as a cross-cutting issue in addressing environmental migration, IOM has been active in post-crisis situations in rebuilding health infrastructure and primary health services, as well as in providing psychosocial support.

- Myanmar: Health and psychosocial support to reconstruct life

### *... local partnerships and empowerment*

The experiences presented in this Compendium clearly underscore partnerships as one of the most important ingredients in project sustainability. This is an obvious point but it cannot be over-emphasized as reality often proves to be challenging. Partnerships require cultural sensitivity and can be time consuming – often a luxury when trying to save lives or meet tight project deadlines. In areas where IOM has been able to work over longer periods of time and develop partnerships at the local level, sustainability, replicability, the multiplier effect and, ultimately, empowerment have been observed. IOM is committed to serving populations in need and supporting authorities and, by extension, local and international partners in achieving this goal.

The human security approach that IOM uses in its work is people-centred. Therefore, IOM's strategic interventions are grounded in the understanding that the communities affected by environmentally induced forced migration are at the heart of decision-making at all levels. It is only through community involvement that improved levels of preparedness and response can be achieved. Communities can also provide invaluable contributions to the assessment and identification of hazards and risks.

- Azerbaijan: Ownership through an inclusive, transparent and demonstrative process
- Cambodia: Community-based disaster risk management (CBDRM) to empower vulnerable indigenous populations

## Section 1

### Preventing forced migration and making migration work for adaptation

Keywords: Human security, sustainable development, research, migration and development, migration as an adaptation strategy, disaster risk reduction, climate change adaptation

#### *Different tools converging towards sustainable development*

The lack of choice and the coercive nature of displacement undermine people's human security. Therefore, forced migration should be prevented to the extent possible. IOM is involved in prevention activities and has developed a number of programmes that aim to prevent displacement in areas prone to natural disasters and reduce migratory pressure in areas undergoing environmental degradation. As populations are often vulnerable to different types of environmental factors, it is necessary to combine different types of tools all converging towards the same goal: sustainable development.

- Bolivia: Populations are vulnerable as a result of extreme poverty and because they live in disaster-prone areas close to rivers and hillsides. Development is therefore a major issue in preventing environmentally induced displacement.

As previously mentioned, there are a number of strategies and tools that can help to prevent forced migration, including those within the DRR and CCA frameworks. The aim of these programmes is to reduce people's exposure to risk, increase their resilience and help them adapt to a changing environment. Investing in adaptation as well as DRR is therefore essential, and financial resources can also come from migrants through remittances.

This section presents a number of these tools based on key findings and lessons learned from IOM's programmatic activities, starting with response to environmental degradation before looking at natural disasters.

### *CCA: A strategic imperative to address environmental degradation*

CCA is most effective for dealing with environmental degradation resulting from long-term processes. As movements induced by environmental degradation will outnumber those resulting from natural disasters, integrating CCA into programming is a strategic necessity. IOM has been investing in developing projects addressing the long-term impacts of climate change. This new generation of projects is promising although still at the pilot stage. Their development requires innovative partnerships, such as the one IOM developed with UNEP.<sup>28</sup> As it is a relatively new programmatic area, IOM and its partners are committed to demonstrating the effectiveness of these projects to the donor community.

- Egypt and Mauritius: Communities living in low-elevation areas threatened by sea-level rise
- Senegal and Mali: Deforestation and exhaustion of vital ecosystems depleting livelihoods

### *Assessing the evidence to guide programmatic development*

The common denominator in IOM's climate change adaptation projects is in-depth research at the start of the project in order to map and understand the linkages between migration, climate change and the environment as well as to identify hot spots. In the second phase, concrete actions are proposed to promote adaptation. These projects also aim at interaction with national decision and policy makers to raise their awareness of the need to integrate migration into national adaptation strategy and invest in DRR.

- Zimbabwe: Study on climate change and migration in smallholder farming areas

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<sup>28</sup> For additional information see also Part I, Chapter 1 of this Compendium on partnership. See also <http://www.iom.int/jahia/Jahia/activities/by-theme/migration-climate-change-environmental-degradation/migration-climate-partnerships>.

### *Population tracking systems to inform action*

Population tracking systems not only enable better understanding of how populations react to environmentally induced stress factors, such as water or food availability, but also help detect potential movements induced by environmental changes and potential tensions, and provide adequate policy responses. The objective is not to prevent migration but to ensure that it is a choice, and that it is orderly and humanely managed.

- Sudan: Human security-based village assessment and population tracking systems to guide actions

### *Developing the potential of migration as an adaptation strategy*

IOM believes that migration, if properly managed, can serve as an adaptation strategy, building on tools developed in the context of migration and development. Proactive measures include, inter alia, the promotion of regular migration channels (including temporary migration), enhanced communication with diasporas and encouraging the use of remittances for the economic development of local communities.

- Colombia:<sup>29</sup> Innovative model of temporary and circular labour migration

Using migration as an adaptation strategy requires economic and other resources. Therefore, it is not an option for everyone. Often, the most vulnerable and most severely affected will not be able to migrate.

### *Economic and livelihood opportunities to reduce migration pressure*

To reduce migratory pressures out of areas affected by severe environmental degradation as a result of, for instance, water scarcity, IOM has been looking at implementing projects that aim to improve

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<sup>29</sup> See Part I, Chapter 1 of this Compendium for further information on the Colombian programme.

the sustainability of livelihoods of the affected populations and to ensure that there are viable alternatives to migration opportunities in the areas of origin.

- Azerbaijan: An efficient and sustainable water supply system that offers a viable way for populations in drought-prone areas

#### *Focus on DRR to prevent displacement in disaster-prone areas*

For populations affected by natural disasters, activities focus on reducing vulnerability to risk, on the one hand, and increasing resilience, on the other. DRR tools have been tested successfully in a number of areas prone to natural disasters, particularly recurring disasters. While the main challenge in the context of disaster preparedness is to save lives (see Section 2), preventing forced migration puts the emphasis on preserving livelihoods in disaster-prone areas.

As an illustration, in cyclone-prone areas, possible actions include: raising awareness of the impact of extreme weather events on livelihoods; building cyclone-proof infrastructure; drawing on indigenous knowledge to promote sustainable use of natural resources, for example, by planting hazard-resistant crops to ensure food security; and protecting water sources from pollution and water-borne diseases via protected wells.

- Indonesia (Yogyakarta): Promoting sustainable agriculture



## Section 2

### Preparing for potential migration, displacement and relocation

Keywords: Human security, vulnerability mapping, disaster risk reduction, early warning - early action systems, disaster preparedness, (community-based) disaster risk management, civil protection, relocation

#### *Focus on preparedness in the context of natural disasters*

In the context of natural disasters, preparedness activities are usually referred to DRR and DRM efforts. This Compendium contains a large sample of activities aiming at preparedness in the context of displacement.

Disaster preparedness is an essential element of DRM as it contributes to saving lives and minimizing human suffering, while at the same time facilitating transition to recovery. Furthermore, when communities are prepared, they are less likely to end up in situations of protracted displacement after a disaster.

#### *Supporting governmental efforts to reach out to communities*

Based on its field experience, IOM is often in a good position to act as a go-between or bridge between the authorities responsible for emergency response and the communities at large. International organizations such as IOM and non-governmental organizations (NGOs) are often called upon to support governments' efforts to reach out to their population, in particular in countries characterized by weak governance structures and limited institutional capacities. Lessons learned show that engaging both the communities and the authorities is often the most productive and sustainable method to: foster a culture of disaster awareness; ensure that community capacities match national response mechanisms; enhance the coping mechanisms of communities after a disaster; and avoid and address gaps in responses between different levels of governance.

- Central Asia: Multi-stakeholders for a social partnership strategy for disaster preparedness
- North Pacific: Five-year programme for disaster mitigation, relief and reconstruction

### *Top-down: Institutional support*

To do so, activities can be directed towards the authorities. This, in particular, concerns capacity building and training activities in such areas as intervention, coordination, specialized training, technical expertise, contingency planning, pre-positioning of emergency stocks, etc. Capacity building often requires long-term engagement vis-à-vis beneficiaries to develop a relationship of trust and effectively reform institutions. It is worth noting that a window of opportunity usually opens after a disaster, when authorities and communities are both more receptive to investment in disaster preparedness, DRM and CBDRM.

- Peru: Technical support for strengthening the civil national defence system

To strengthen capacities in DRR and disaster preparedness, activities can also include supporting the development of adequate standard operating procedures (SOPs). However, the challenge is often to update these SOPs frequently to ensure that they stay relevant.

- Trinidad and Tobago: Framework for mass migration emergency response SOP

In a post-conflict set-up, IOM has used institution-building and reconstruction opportunities to build disaster preparedness capacities, thereby contributing to improve emergency response as well as Security Sector Reform (SSR).

- Kosovo/UNSC 1244: Building up civil protection in a post-conflict situation

### *Bottom-up: Community support*

At the community level, IOM has tested and successfully implemented CBDRM in a number of countries. The initiative aims to give communities the tools to understand the risk they face and how to respond to them.

- Timor-Leste: Strengthening the framework for DRR and CBDRM

Building on local knowledge is usually a necessity – not only because it is often more efficient than imported systems and solutions, but also because communities have trust in it. However, it should also be noted that increasingly unpredictable changes in climate patterns have rendered such traditional practices less effective. Innovative approaches will be required with a strong emphasis on empowerment, for instance, through group-building participatory needs identification used, inter alia, in the psychosocial realm.

- Cambodia: Community-based resource management at the core of indigenous identity

### *Early warning - early action systems: Protecting lives and livelihoods*

Early warning - early action (EWEA) systems involve both the authorities and communities. These systems are usually controlled and activated by the authorities (e.g. meteorological alerts). However, in order to be effective, they have to be known and understood by populations. Disaster preparedness implies that the authorities have adequate financial, human and operational resources to respond. They also indicate that communities know how to react, what to do and where to go during a disaster or in its immediate aftermath. EWEA systems often include evacuation plans, but these would be inefficient if not known or understood by populations.

In the context of disaster preparedness, a recommended strategy is to invest in shelters that can provide safe havens to populations at risk of displacement, particularly those in areas hit by recurring or seasonal storms. Shelters need to be adequate, easily accessible and known to the surrounding populations.

- Haiti: Extensive assessment of shelters and elaboration of contingency planning complemented with construction of shelter structures and stocking of non-food items (NFIs).

Because recurring disasters often diminish resilience, especially when combined with environmental degradation, EWEA systems that integrate CCA should, to the extent possible, also protect livelihoods.

DRR initiatives, such as vulnerability mapping to identify hot spots or the setting up of integrated meteorological early warning systems, can substantially reduce risk. Designing evacuation plans and providing populations with education and information on available shelters is also essential in areas affected by recurring disasters such as cyclones or floods.

- Mozambique: Limiting the impact of floods through emergency radio broadcasting

#### *Relocation: Planning for the worst*

Sea-level rise and desertification may ultimately reach a point where the affected ecosystems can no longer sustain human settlement. Populations will have to relocate, mainly within their countries and, in some cases, to a third country. However, as this end result is expected, good practices in terms of migration management recommend that populations prepare for relocation to the extent possible. Although durable solutions usually apply once displacement occurs, it is the proactive application of the principles set forth in the Framework for Durable Solutions that should prevail.<sup>30</sup>

Relocation is complex and needs to be carefully planned. It raises many operational challenges, including land tenure, access to livelihood, employment and infrastructure. For instance, relocation to empty areas would limit the risk of tensions with the receiving community, but it is costly in terms of new infrastructure and investment in development projects to ensure sustainable livelihood.

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<sup>30</sup> A durable solution to displacement can be achieved through (i) sustainable return; (ii) sustainable local integration; or (iii) sustainable integration in another area. This definition is taken from the Framework for Durable Solutions (currently under revision).

Sudden-onset natural disasters, like storm surge leading to salty water infiltration, can also hasten the need for relocation. Communities may actively ask to be relocated. This is the preferred mode of operation, as securing the consent of concerned populations is fundamental in terms of human rights as well as in terms of feasibility.

- Madagascar: Voluntary relocation of vulnerable communities affected by cyclones, floods and coastal erosion

## Section 3

### Managing (mass) migration

**Keywords:** Disaster risk management, emergency response, camps and shelters, cluster approach

Displaced populations in distress often find themselves in an alien environment with limited resources, fragile housing and increased health risks due to lack of access to medical services. This particularly concerns the most vulnerable groups, such as pregnant women, children, the elderly and people with disabilities. They often need assistance and protection because they are generally disempowered and in a poor position to negotiate the terms of their displacement. Therefore, managing displacement is a humanitarian necessity.

- Southern Africa: Similar vulnerabilities and needs across the subregion.

IOM has increasingly been operating in conflict areas where environmental conditions, while usually not a decisive factor, exacerbate the crisis. In this context, it is of utmost importance to integrate environmental consideration into managing displacement (see also Section 5).

- Kenya: Supporting IDPs affected by food crisis in the Rift Valley

Migration crisis management in the context of natural disasters or environmental degradation necessitates the design of flexible responses adapted to the local context, for example different ways in addressing displacement in rural and urban areas, in particular slum areas. Because of the impact of climate change, urban settlements increasingly present a challenge because of their heightened vulnerability to sudden- and slow-onset disasters. Hence, it is expected that the number of interventions in urban settlements will grow significantly.

### *Reducing vulnerability to environmental factors in camps and shelters*

From the human security perspective, it is important to address the assistance and protection needs of populations in distress, as displacement increases their vulnerability. Often temporary shelters or camps are set up to assist these people. However, IOM does not advocate setting up camps, and considers this a last resort to improve living conditions during displacement. Instead, the Organization seeks and advocates for durable solutions to end displacement. In 2005, in the context of humanitarian reform, IOM became cluster lead for Camp Coordination and Camp Management (CCCM) in Natural Disasters and committed itself to actively participating in a number of other clusters as well.

During emergency response, integrating climate change considerations is not often relevant, as climate change adaptation is a rather long-term strategy, while emergency response is focused on immediate needs. However, one important element of camp management is to reduce the vulnerability of the camp to environmental factors such as flash floods. Such measures would also help prevent secondary displacement. For instance, building semi-permanent structures on higher ground away from flood-prone areas is a measure to reduce the risk of flooding in the future and prevent further displacement.

- Pakistan: Two IDP camps closed in 2009 because of vulnerability to flooding caused by the monsoon.

### *During emergency response: Never too early to do DRR*

An important lesson learned is that it is often possible to start DRR in the emergency phase. Engaging in recovery and reconstruction as early as possible contributes to accelerating normalization and bridging more effectively the short-term and long-term needs of affected communities. It includes concentrating efforts on building permanent shelters once needs in temporary shelters are already covered, as well as taking into account the potential for short-term economic development.

- Philippines: Modifying shelters to make them typhoon-resistant during the emergency response

A well-managed transition from emergency response to the recovery phase also contributes to trust-building. If emergency assistance has been executed well, the authorities tend to be more willing to work with and assist organizations in developing and implementing programmes that assist communities to re-establish their livelihoods and support authorities to provide sustainable infrastructure.

- Ethiopia: Making plans to move from emergency response to DRR

### *Mobilizing assets to reach populations in need*

In an emergency context, the effectiveness of any response depends on the speed with which life-saving assistance is delivered to the greatest number of affected persons. Therefore, accessing the most affected areas and communities is one of the main challenges, particularly when infrastructure has been severely damaged and delivery of services are disrupted. Cooperation with local administration counterparts for identification and distribution purposes is an essential part of the process.

- Mexico: As emergency preparedness focused on urban settlements, access to remote communities was weak.
- Nepal: Identifying and registering the victims to provide adequate assistance and effective protection

Using all available assets, including civil protection and military assets, is also essential in this context. However in the case of complex emergencies, this measure would need to be carefully assessed.<sup>31</sup>

- Bolivia: Only the air force has the capacity to airlift humanitarian assistance to reach remote communities.

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<sup>31</sup> It should also be in line with the so-called Oslo Guidelines on the Use of Military and Civil Defence Assets in Disaster Relief, available at <http://ochaonline.un.org/OchaLinkClick.aspx?link=ocha&docId=1111316>



## Section 4

### Mitigating the impact of (forced) migration

Keywords: Disaster risk management, disaster risk reduction, urbanization, conflict prevention/management, complex emergencies, environmental footprint

#### *Reducing the footprint of temporary settlements*

Shelters, camps or any other form of temporary settlement resulting from displacement induced by natural disasters and conflict can have a negative environmental footprint. The Camp Management Toolkit and a number of other tools<sup>32</sup> provide useful guidelines to mitigate such settlements' environmental impact, from the set-up of the camp to its closure and the rehabilitation of the affected area. The toolkit includes guidelines on the following topics: shelter set-up and construction; water and sanitation; domestic energy; environmental management plan; agriculture; livelihoods and livestock; and revival of vegetation cover.

Incorporating international guidelines and technical standards for relief assistance, such as those developed under the Sphere project,<sup>33</sup> into training for national implementing agencies highlights the importance of identifying appropriate site locations that would not only protect IDPs from flooding, for instance, but also minimize the negative impact that camps can have on the immediate environment.

- Nepal: Training local human resources on CCCM, humanitarian response in emergencies, shelter and settlement planning

#### *DRR as a mitigation tool*

Displaced persons searching for means of subsistence can engage in unsustainable exploitation of their immediate environment, contributing to further deforestation or land degradation. However,

<sup>32</sup> A list of readings and resources is included in the Camp Management Toolkit, Chapter 6. Environment. It notably includes UNHCR Environmental Guidelines, 2005, <http://www.unhcr.org/3b03b2a04.html>.

<sup>33</sup> More information on the Sphere project is available at <http://www.sphereproject.org/>.

there are simple practices such as DRR tools, presented in this Compendium, which can reduce such impacts. For instance, solar cookers can address the immediate livelihood needs of the beneficiary population. They are also ecologically friendly, and thus help to prevent deforestation and possible disputes over scarce resources resulting from large groups of displaced populations in already depleted regions. By benefiting women in the first place, solar cookers also contribute to preventing sexual and gender-based violence (SGBV), as women often face abuse when they engage in subsistence activities such as collecting firewood or searching for fuel.

- Yemen: Solar cookers to reduce gender-based violence

### *Working with receiving communities*

Beyond the environmental footprint of temporary human settlements, mitigation also implies looking at the impact on receiving communities. In areas where resources are scarce, competition and inter-community tensions can emerge. The expected impact of climate change on these geographical areas, which have more frequent extreme weather events such as droughts, particularly makes this challenge even more acute.

Sustainable livelihood practices should be built into the humanitarian response to ensure a limited ecological impact on hosting areas and communities. The importance of managing relations between the communities has been highlighted in numerous occasions. Tools such as conflict prevention and conflict management often prove useful. The objective is to ensure that communities can cooperate and share potable water and other resources in a fair manner.

- Eastern Africa: Taking into account the divergent interests of private farmers, ranchers and pastoralist communities to prevent conflict

### *Mitigating unmanaged urbanization*

Unmanaged urbanization is rightly considered to be one of the most pressing and daunting challenges posed by climate change. Rural-to-urban migration spurred by environmental migration and partly exacerbated by climate change, together with demographic trends

and underlying development dynamics, contributes to unmanaged urbanization<sup>34</sup> in already fragile ecosystems that are often exposed to natural hazards (mudslides and floods). The limited absorptive capacity of urban areas often leads to overexploitation of natural resources and pollution. Unsustainable livelihoods and unsanitary practices can also expose migrants to public health risks. Addressing this challenge requires comprehensive partnerships with the authorities and development actors, with an emphasis on DRR. IOM's contribution to addressing the root causes of this phenomenon has been, in some cases, to reduce (forced) migration flows to urban settlements.

In some instances, it has also been noted that a city-centric community stabilization approach might provide additional incentives for rural communities to relocate to urban centres. There is likely to be a dramatic impact on agricultural production when workforces are suddenly pulled out of rural areas by better job offers in nearby towns. A balanced approach is required to prevent this side phenomenon.

- Haiti: Following the April 2008 riots in Haiti, IOM started moving into semi-urban areas, as well as some key rural communities.

### *Mitigating the impact of migration on migrants*

The Compendium also highlights the importance of mitigating the impact of mass-migration on the migrants themselves. For instance, when families are separated for long periods of time, children, women and young people might become more vulnerable to human trafficking, SGBV, health risks, or involvement in criminal activities. The increase in environmental migration clearly calls for greater attention to the issue of migrants' vulnerability. Setting up counselling, including psychosocial support, is certainly a good practice in areas experiencing high migration rates as a result of both natural disasters and environmental degradation.

- Bangladesh: Setting up community information centres in affected areas to reduce forced migrants' vulnerability

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<sup>34</sup> In Bangladesh, as many as 400,000 migrants are forecast to arrive each year from rural and coastal areas, where environmental hardship is increasingly common due to coastal erosion.

## Section 5

### Addressing (forced) migration through durable solutions

**Keywords:** Durable solutions, community stabilization and livelihood, sustainable development, disaster risk reduction, climate change adaptation, migration and development

It is particularly important to factor climate change into efforts to address forced migration in the long run, which means developing and implementing durable solutions for concerned populations.

#### *Factoring CCA into sustainable return*

In most cases of displacement induced by natural disasters, return is possible in the short term. To ensure sustainable return, including rebuilding houses and livelihoods, restoring local services (health, water, education, electricity, etc) and revitalizing the local economy, climatic trends that could negatively affect long-term prospects for recovery should be factored in to the extent possible. Letting populations resettle in areas that are expected to disappear or become unable to sustain human settlement in the medium to long term would just prolong the problem.

Supporting communities' return includes:

**“Building back better”** to reduce future exposure to natural hazards (integrating climate change adaptation to climate-related disasters), by constructing earthquake-resistant or cyclone-proof houses. Reconstruction in earthquake-prone environments highlights the need to establish simple quality control systems, conducting systematic tests of structures as well as intensive staff training on seismically sound construction.

- Pakistan: Passing along knowledge on earthquake-resistant construction

**Sustainable resource management:** Resources should be managed in a sustainable manner, so that reconstruction efforts do not aggravate

the ecological situation and further increase the vulnerability of populations. For instance, deforestation around reconstruction sites can increase exposure to floods and mudslides.

- Angola: Transporting communities to get construction materials in selected zones and rebuild in designated safe areas

**Training** local workers in DRR construction techniques and creating manuals to assist households with reconstruction. Too often, indigenous knowledge is underestimated, although it has proven its added value and cost effectiveness in a number of IOM projects. However, climate change may make this knowledge less and less relevant, pressing communities to develop new techniques and knowledge to adapt to their changing environment.

- Indonesia (Yogyakarta): Mobile community assistance to train communities in a wide range of DRR and DRM tools

### *Sustainable return in declining ecosystems*

In the context of slow-onset natural disasters such as drought, the sustainability of return should be a key determinant. While there is a need for emergency assistance in order to enable communities to return in time to prepare for the next harvest, sustainable return to drought-hit areas also relies on longer-term development planning to counter desertification and improve drought resilience.

- Syria: Getting the time right while addressing short- and long-term concerns

Investing in soil conservation, for instance, can contribute to environmental recovery and economic recovery at the same time, by offering labour-intensive job opportunities to communities that have lost their livelihood. Directly replacing lost income can help prevent the exodus of highly vulnerable migrants to urban areas.

- Haiti: Soil conservation and drainage activities created short-term employment opportunity for a significant proportion of the affected communities.

- Indonesia (Aceh and Nias): Providing alternative cash crops to prevent farmers from logging; if fields need to be cleared, bigger trees are left untouched in order to stabilize the soil.

### *Post-crisis community stabilization*

Community stabilization is part of IOM's framework of response to further prevent environmentally induced migration. An important question for programming is how to turn a vicious circle into a virtuous one. Activities should be implemented that can have a positive multiplier effect and that would, in line with the human security approach, not only enable economic recovery, but also contribute to environmental security, food security, health security, social security as well as individual securities (in particular for the most vulnerable groups such as women, children and the elderly). Reconstruction efforts targeting affected communities can lead to resentment in the rest of the community – often themselves in a situation of vulnerability. It is thus important to develop sensitive programming.

- Indonesia: Income-generating initiatives, from programmes to support fishery and agriculture to microfinancing for small businesses
- Philippines: Non-beneficiaries as well as beneficiaries were involved in the construction process

### *Focus on alternatives to return*

Return is not the only durable solution open to displaced persons. For those who cannot return or do not wish to return, they can either integrate locally or relocate to a third area. The challenges faced by these populations are similar to those faced by returnees, and include building back better, sustainable use of resources, re-establishing livelihoods, etc. In addition, they may have to address potential resentment among members of the receiving community. Securing land-tenure rights can create tensions too, especially if access to land is essential to support livelihoods in areas experiencing environmental degradation.

These challenges are often exacerbated by the fact that displaced populations are alienated. Therefore, integration is highly important to enable them to fully and positively participate in and contribute to the socio-economic life of the receiving community. Migration management tools, particularly in the area of migration and development, can support these efforts.

- Myanmar: The many IDPs who prefer to remain in their current location raises the issue of sustainable integration.

### *Complementing CCA and DRR with conflict management tools*

Addressing displacement may also prove challenging when circumstances do not enable a move towards a more sustainable response. Ongoing conflict situations can seriously hamper access of the humanitarian community to populations affected by natural disasters in these areas and its ability to move beyond the emergency response to the recovery phase.

- Yemen: Escalating conflict hampers humanitarian access to victims of floods

In some instances, conflict prevention/conflict management tools, in addition to early warning tools, need to be factored into programmatic response, in order to detect the degradation of a situation into something that could lead to tension between communities. These tools based on human security have proved their added value; they also have a high potential for replicability.

- Sudan: Tracking the water level to determine its potential to lead to inter-community tension





Part II

Country &  
Subregional  
Programmatic  
Profiles



AFRICA

Angola

Egypt

Ethiopia

Kenya

Madagascar

Mali

Mauritius

Mozambique

Senegal

Sudan

Zimbabwe

# ANGOLA

## BASIC FACTS

**Total Area:** 1.25m sq km

**Population:** 17.5 million

**Gross Domestic Product (GDP) per capita PPP:** USD 2,335

**Net Migration Rate:** 1.9 migrants/1,000 population

**Annual Remittances:** N/A

Types of Events	Types of Movement	Types of Response
Heavy rains Seasonal flooding	Internal displacement	Disaster risk management/ Emergency response Cluster Disaster risk reduction

IOM worker helps constructing an emergency shelter in Kuando Kubango province, Angola.

© IOM 2009 (Photo: Thereza Jatobá)



# Rising above the Danger Zone: Disaster Relief in Response to Flooding in Southern and Eastern Angola

<b>Status</b>	Completed <sup>1</sup>
<b>Projects Period</b>	April 2009 to July 2009
<b>Total Beneficiaries</b>	20,000 persons
<b>Combined Budget</b>	USD 881,475
<b>Donors</b>	United Nations Central Emergency Response Fund (UN-CERF) and the United States Agency for International Development (USAID)

## Environmental Challenges and Other Intervening Factors

### *Ongoing and mounting danger in light of floods*

In 2009, floods hit the southern and eastern parts of Angola, destroying houses and leaving many displaced. This has been the third year in a row that rains above the “normal” level have affected Angola and caused rivers like the Zambezi in the eastern province of Moxico to flood.

Conditions were particularly harsh in the communities of former returnees,<sup>2</sup> where many vulnerable people live. In these communities, people have lost all of their belongings and have limited access to food, since their harvests have been destroyed and their social network weakened.

More and more people need to realize that they have to adapt to what seems to be a new reality exacerbated by climate change. There has been a steady increase in rainfall every year, making it necessary to identify safer grounds for housing and causing people to consider new ways of ensuring food security by adapting agricultural activities.

<sup>1</sup> See project details at the end of the country section.

<sup>2</sup> Internally displaced persons (IDPs) and refugees started to return after the civil war that devastated Angola from 1975 to 2002.

**The dire food situation is also heightening the danger of wild animal attacks. Depleting resources are forcing such animals to search for alternative food sources, resulting in humans and their livestock being targeted. Roaming elephants are destroying fields. Because of rising water levels, crocodiles and hippopotamuses are becoming increasingly serious threats that have already caused several deaths during this year's floods.**

## IOM Programmatic Responses

During the floods, IOM formed part of the UN disaster management team, coordinating the overall UN approach to providing support to individuals and families displaced by the natural disasters. The aim of IOM's response was to ensure effective and timely humanitarian assistance through the facilitation of safe human settlement, procurement and distribution of non-food items (NFIs), and the provision of shelter materials.

### *Identifying needs and possibilities*

IOM's immediate action was to conduct a rapid needs assessment in order to map vulnerable populations and protection needs. In various communities, the most vulnerable people were identified in collaboration with the local administration and *sobas* (traditional authorities). Furthermore, IOM worked closely with the Ministry of Social Affairs, the Civil Protection of Angola and local partners such as the Angolan Red Cross to identify safe areas in which to resettle people who had lost their homes.

### *Ensuring that affected communities have what they need*

IOM provided humanitarian items to affected communities. Through the procurement of NFIs and the organization of transport into remote areas, the organization was able to reach the most vulnerable groups and provide them with essential relief items such as second-hand clothes and blankets. This was particularly important given that it was winter at the time.

## *Making shelter reconstruction possible*

Through the Shelter Cluster,<sup>3</sup> IOM helped to construct model shelters and distributed plastic sheets, construction kits and iron sheets. Also, transport was provided for people to cut wood in the forest and construct their houses in areas that had been identified as safe against flooding by the Civil Protection. IOM constructed and provided material for the construction of houses in Cunene, Kuando Kubango and Moxico. A large number of flood victims received shelter construction kits to rebuild their houses and move out of the tents initially distributed by the Angolan government.

## Lessons Learned and Sustainability

### *Cooperation goes a long way*

One of the main achievements was the rewarding cooperation with local administration counterparts and partnering organizations. The joint identification process, as well as the distribution of relief items in remote communities, was notably well-organized. Close communication and coordination with the sobas in the identification and distribution process had proved to be very efficient. Furthermore, IOM worked with partner UN agencies, civil society and NGOs (Angolan Red Cross, Oxfam and the Development Aid from People to People - Angola (ADPP-Angola)) in an effort to provide rapid and effective response. IOM prioritized and strengthened coordination mechanisms to address protection issues and guarantee access to life-sustaining supplies.

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<sup>3</sup> The cluster approach was proposed by the **Inter-Agency Standing Committee (IASC)** in the 2005 Humanitarian Response Review as a way of addressing gaps and strengthening the effectiveness of humanitarian response through building partnerships and clarifying roles and responsibilities of organizations within the different sectors of humanitarian response. Global cluster leads have been designated in 11 areas of humanitarian activity. At the global level, IOM leads the Camp Coordination and Camp Management (CCCM) Cluster for Natural Disasters and actively participates in the Logistics, Early Recovery, Health, Emergency, Shelter and Protection Clusters.



## Challenges along the way

Due to the difficult road situation in Angola, transport was many times a challenge. The unavailability of transport led to increased expenditures or delays.

### *“Building back better”*

The provision of construction materials (notably wood) locally was facilitated by the local administration, and allowed the people to use material that they were familiar with (daub and wattle-type architecture). Future needs for renovation are more likely to be met this way, given the ease in obtaining similar materials and familiarity in working with these materials.

In choosing to construct new houses on elevated and thus safer ground, communities are better prepared for the next rainy season. Additionally, iron sheets are improving traditional building techniques by providing better protection against rain than grass thatched roofs common in most households.

## List of Projects

### Rapid Humanitarian Support to Displaced Communities Affected by the Floods in Angola

<b>Status</b>	Completed
<b>Project Period</b>	April 2009 to July 2009
<b>Beneficiaries</b>	12,000 persons
<b>Budget</b>	USD 445,000
<b>Donors</b>	UN-CERF

### Emergency Relief Assistance to Flood-Affected Households in Cunene, Kuando Kubango and Moxico, Angola

<b>Status</b>	Completed
<b>Project Period</b>	May 2009 to July 2009
<b>Beneficiaries</b>	8,000 persons
<b>Budget</b>	USD 436,475
<b>Donors</b>	USAID

# EGYPT

## BASIC FACTS

**Total Area:** 1 million sq km

**Population:** 76.8 million

**Gross Domestic Product (GDP) per capita PPP:** USD 4,337

**Net Migration Rate:** 1.3 migrants/1,000 population

**Annual Remittances:** USD 5,865 million

Type of Event	Types of Movement	Types of Response
Sea-level rise	Internal migration Potential regional and international migration	Research on migration and the environment Climate change adaptation Migration as an adaptation strategy

Coast line in Alexandria, Egypt. Reinforcing the dykes to protect against the sea. © IOM 2009  
(Photo: Armando De Paz Ortiz)



# Addressing the Incidence of Sea-Level Rise on Human Mobility in the Nile Delta

Status	Project Proposal
Project Period	December 2009 to January 2010
Expected Beneficiaries	Government authorities, local NGOs, academia and communities in South-east Alexandria
Proposed Budget	USD 200,000

## Environmental Challenges and Other Intervening Factors

### *Inundation in the Nile Delta: A cause for concern*

The northern coastal zone, characterized by the low-lying delta of the Nile, is home to 95 per cent of the country's population and agricultural activity, while comprising only 5.5 per cent of the total land area. Due to the high population density and concentration of agricultural activities, the northern coast of the country and the Nile Delta are highly vulnerable to the impact of climate change, particularly sea-level rise.<sup>4</sup>

**It has been estimated that a sea-level rise of 50 centimetres by 2025 in the Delta could displace over 2 million people,** flood 1,800 square kilometres of cropland, and result in USD 35 billion worth of damage to land, property and infrastructure. In addition, strategic water storage infrastructure, such as Lake Nasser, is likely to be exposed to increased evaporation and more frequent flood risk.

According to *The Arab Republic of Egypt Initial National Communication on Climate Change*, a sea-level rise of between 50 centimetres and 1 metre along the Mediterranean coast near Alexandria could lead to the

<sup>4</sup> Current sea-level rise is due partly to human-induced global warming. Increasing temperatures result in sea-level rise by thermal expansion of water and the addition of water to the ocean by melted continental ice sheets. Thermal expansion, which is well-quantified, is currently the primary contributor to sea-level rise and is expected to remain so over the course of the next century. Glacial contributions to sea-level rise are less important, and are more difficult to predict and quantify.

loss of 195,000 jobs and increase the salinity of the water, disrupting freshwater resources. A sea-level rise could also threaten Egypt's long coastal stretch on the Red Sea, causing major damage to the tourism industry, which is a major contributor to gross domestic product (GDP).

In the worst-case scenario, an estimated 1 metre rise in sea level in the Nile Delta could affect more than 6 million people and inundate approximately 4,500 square kilometres of cropland. Due to its severe impact on highly populated areas, sea-level rise is the stated climate change priority of the Ministry of State for Environmental Affairs.

## IOM Programmatic Responses

### *Increasing our knowledge, raising awareness and planning ahead*

IOM proposes to work in partnership with the Government of Egypt to contribute to wider efforts to meet the challenges posed by the emerging issue of climate change, supporting the integration of migration into the current debate. Broadly, IOM aims to increase awareness of the actual and potential impacts and consequences of sea-level rise on migration, and identify and implement successful strategies to best respond and utilize environmental migration.

Focusing specifically on communities in low-elevation areas in South-east Alexandria on the Mediterranean coast, which is an identified priority area, IOM will undertake a number of assessments on current and predicted migration flows against estimated sea-level rise, and their environmental and socio-economic implications.

Precise topics are yet to be agreed upon, but could include:

- Identification of actual and potential areas of origin and destination of environmental migrants;
- An assessment of how communities facing sea-level rise in Egypt or elsewhere cope with this challenge;
- Household surveys among at-risk communities to better understand their knowledge and plans in case of sea-level rise;
- Identification of escape routes and early warning systems in case of surges, etc.

In particular, the assessments will provide essential information about the current and predicted positive and negative impact of migration in both the short and long term.

Based on the findings of the assessments, and guided by a technical working group, information materials and initiatives will be undertaken to raise awareness of potential sea-level rise and its potential impact and consequences. As appropriate, information could be shared on communication systems or other similar initiatives.

The findings of the assessments may also indicate the need to undertake capacity-building initiatives, among specifically targeted service providers and communities at large, as well as within the local government. Furthermore, infrastructure improvement projects or similar initiatives could be piloted, which will help communities to adapt to a changing environment.

The findings of the assessments and pilot initiatives will be shared in a final report and workshop, where relevant governmental and non-governmental stakeholders will be invited to discuss effective migration management strategies. The workshop is expected to raise awareness of linkages between sea-level rise and migration in Egypt, and may act as a valuable foundation for ongoing dialogue and integration of migration into climate-change planning. The stated objective is to prevent the situation from reaching a point where it could lead to a humanitarian disaster, including mass forced migration, by promoting the view that population movement should be planned and managed.

## Considerations in Moving Forward

### *Migration as an adaptation strategy*

An important consideration throughout the project, particularly in the assessment phase, will be the link between migration and adaptation. **Migration strategies, such as temporary and seasonal migration schemes, may be channelled towards development projects and risk reduction efforts to increase the resilience of vulnerable populations.**

## *Structuring and implementing our work: A collaborative effort*

IOM will be working in close cooperation with relevant government entities, particularly the Ministry of State for Environmental Affairs and the Egyptian Environmental Affairs Agency (EEAA), to set parameters and guide the project throughout its duration. Activities will include an initial round table for key governmental and non-governmental stakeholders to exchange available information and initiatives and identify priorities to be addressed during the project, as well as the setting up of a smaller technical working group to assess progress and forge the way forward.

### Project Proposal

Status	Project Proposal
Project Period	December 2009 to January 2010
Expected Beneficiaries	Government authorities, local NGOs, academia and communities in South-east Alexandria
Proposed Budget	USD 200,000

# ETHIOPIA

## BASIC FACTS

**Total Area:** 1.13 million sq km

**Population:** 78,986,000

**Gross Domestic Product (GDP) per capita PPP:** USD 756

**Net Migration Rate:** -0.4 migrants/1,000 population

**Annual Remittances:** USD 134.0 million

Types of Events	Type of Movement	Types of Response
Heavy rains Seasonal flooding	Internal displacement	Disaster risk management/ Emergency response Disaster risk reduction Climate change adaptation (for the project proposal)

Distribution of non-food items in the Gambella region, Ethiopia, to population affected by floods. © IOM 2009



# Looking beyond Life-Saving Assistance to Flood-Affected IDPs in Gambella Region

<b>Status</b>	Completed and Project Proposal <sup>5</sup>
<b>Project Period</b>	September 2008 to December 2008
<b>Beneficiaries</b>	36,000 persons
<b>Budget</b>	USD 548,668 (completed project)
<b>Donor</b>	Humanitarian Response Fund Ethiopia

## Environmental Challenges and Other Intervening Factors

### *Displaced by the water*

Flooding is a recurrent phenomenon in the Gambella region, as well as in other regions in Ethiopia. While seasonal floods water fields cultivated by local communities, a pattern of increasingly erratic and often heavy rainfall expose communities to unpredictable weather conditions for which coping mechanisms are weak.

Flash floods caused by heavy rainfall in the highlands cause rivers and tributaries to overflow overnight, flooding whole villages and leaving communities no other option than to flee their settlements. Erratic rainfall, on the other hand, puts pressure on traditional farming practices, which are dependent on timely and adequate rain for short-cycle crops that traditionally feed large parts of the population.

With rainfall getting more erratic, heavier and more unpredictable, likely as a result of climate change, communities will increasingly find themselves exposed to risks caused by changes in weather conditions. A joint food security assessment for 2009 showed that more than 80,000 people in the Gambella region would require emergency food assistance in the second half of 2009.<sup>6</sup>

<sup>5</sup> See project details at the end of the country section.

<sup>6</sup> Additional information on the latest humanitarian requirements for Ethiopia available at <http://www.reliefweb.int/rw/RWB.NSF/db900SID/EGUA-7X3MME?OpenDocument>.



Nearly all *woredas*<sup>7</sup> in the region are vulnerable to overflowing of the Baro, Gilo, Akobo, Koikoy and Alwero rivers and their tributaries, usually from July to September. Annual flooding, in the last five years alone, has resulted in the displacement of more than 170,000 people and the loss of more than 2,750 livestock. Furthermore, affected communities had experienced significant infrastructural damage and more than 6,500 hectares of crop land had been lost. In 2008, flooding in the region left thousands of households displaced, with no shelter, no access to potable water and no basic necessities, as many household items were lost due to the flood.

In addition to floods, conflict is a major challenge. In the first nine months of 2009 more than 40,000 people have been displaced, mainly due to cross-border cattle raids from Sudan that had severe consequences, such as the loss of lives and material assets, increased exposure to diseases, and limited or no access to land and food sources.

Flooding resulting in internally displaced persons (IDPs) and exacerbated by increased conflict is the primary hazard the region continues to face. Its impact is compounded by a lack of basic services such as health care and access to water. In Gambella, man-made and environmental shocks quickly push marginalized communities living on the cusp of survival into disaster, because of their limited options to prepare for or mitigate the effects of natural hazards. Continual shocks to livelihoods lead to the depletion of assets and, ultimately, to increased vulnerability to progressive minor shocks.

## IOM Programmatic Responses

### *A collaborative and consultative effort to aid*

In order to protect and save the lives of displaced persons, a rapid and coordinated humanitarian response was developed by IOM as cluster

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<sup>7</sup> A *woreda* is an administrative division in Ethiopia, which is managed by a local government, equivalent to a district.

lead,<sup>8</sup> in cooperation with a range of humanitarian partners and in consultation with the regional government authorities. A total of 36,000 individual IDPs were identified for immediate humanitarian assistance, particularly provision of non-food items (NFIs) and emergency shelter material.

### *Addressing the gaps for future response*

Furthermore, a two-day capacity building workshop was held to address gaps in the Gambella region's disaster preparedness and response efforts. The workshop was attended by 49 people from regional and local governments, as well as humanitarian partners. Key issues were the protection of flood-affected populations, registering and profiling, appropriate kit composition, logistics, and flood mitigation and management at the regional and community level.

The disaster risk reduction (DRR) and disaster risk management (DRM) sessions sparked lively debates, and potential intervention areas were identified such as resettlement to upland areas, construction of dams, environmental awareness and sustainable natural resource management, as well as increased community awareness on DRR and DRM. Finally, a capacity mapping exercise was carried out, revealing gaps for the regional and local government to work on.<sup>9</sup>

## Lessons Learned and Sustainability

### *Working together*

- Much effort was put into coordination, which proved that partners could be mobilized for effective humanitarian action through the humanitarian cluster system.

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<sup>8</sup> The cluster approach was proposed by the **Inter-Agency Standing Committee (IASC)** in the 2005 Humanitarian Response Review as a way of addressing gaps and strengthening the effectiveness of humanitarian response through building partnerships and clarifying roles and responsibilities of organizations within the different sectors of humanitarian response. Global cluster leads have been designated in 11 areas of humanitarian activity. At the global level, IOM leads the Camp Coordination and Camp Management (CCCM) Cluster for Natural Disasters and actively participates in the Logistics, Early Recovery, Health, Emergency, Shelter and Protection Clusters.

<sup>9</sup> See below, "Way forward" section, for DRR activities under development.

- Distribution was carried out by implementing partners, which cooperated with local officials for beneficiary identification and organized community distribution committees to make sure the displaced communities were involved in the distribution process. **The involvement of beneficiaries in the aid effort ensured a more rapid response and helped to build a sense of empowerment among affected communities.**

### *The value of a flexible approach*

- With regard to distribution, lessons learned include the need to be flexible as access can be difficult. In addition, as verified numbers are difficult to obtain, flexibility in terms of beneficiary numbers (i.e. the ability to scale up or scale down response as actual numbers are verified during the project) is important. Finally, having resources available through contingency planning enables a more rapid and better-targeted response.

### *Feedback through post-distribution evaluation*

- Post-distribution evaluation showed that the plastic sheets and blankets distributed provided much-needed shelter and cover for the beneficiaries, and that the kitchen utensils enabled storage of safe drinking water and cooking.

#### From Disaster Risk Management to Disaster Risk Reduction

Chronic flooding and income loss due to erratic and heavy rainfall characterize the Gambella region. They destroy fragile livelihoods and displace large numbers of people every year. Community coping mechanisms are weak, as is institutional capacity to address the situation. As a result, every year, emergency interventions are required to ensure people's survival and provide basic services to a large part of the region's population.

As a response to years of reactive emergency aid, of intervening after disaster has hit, IOM, Samaritan's Purse (SP) and Zuid-Oost Azië (ZOA) propose a more effective and comprehensive approach aimed at mitigating the impact of disasters through building capacity for risk reduction and response at the regional, local and community level. This will reduce disaster risk, improve livelihoods and reduce the cyclical dependency on emergency aid in the Gambella region.

The Disaster Risk Reduction in Gambella project would focus on community mobilization and stabilization for DRR. The underlying philosophy of the programme design is based on communities recognizing the fundamental causes of their situation and addressing

them by focusing on their strengths, assets, resources and capacities – thereby empowering the communities to deal with the challenges they face.

In its preliminary stage, village disaster risk reduction committees would be established in each target community. These committees would be trained and empowered to assess their situation, raise awareness in their communities and devise strategies for dealing with recurring disasters in a simple and cost-effective way.

Particularly, these committees would be trained in DRM. This would include awareness of the nature of disasters affecting the community, and traditional and existing strategies and coping mechanisms. Training would sensitize communities to the need for information and collaboration with government and humanitarian agencies in disaster interventions for longer-term durable solutions. This will enable a stronger focus on recovery, and gradually build stronger communities and reduce disaster risk.

Following training, committees – assisted by facilitators – would map vulnerability in their communities. Mapping would be linked to regional initiatives on DRM; it would reveal where strategies and coping mechanisms are weak, thereby enabling better solutions to disasters and livelihood development.

Based on these assessments, the communities will devise solutions for reducing disaster risk and improving human security and livelihoods. Livelihood protection and natural resource management activities could include:

- flood-proof grain storage facilities/grain banks;
- small, community-led embankment works;
- boreholes to mitigate water shortage during floods and seasonal displacements;
- seeds, tools and training for agricultural diversification;
- fishing equipment to complement agriculture;
- animal health services and training.

This programme would give communities the space to dialogue and define their vision and priorities. It would allow them to use their own resources, leveraged through programme grants, to build stronger communities more resilient to the shocks and the challenges they are likely to encounter in the future.

## List of Projects

### Life-Saving Assistance to Flood-Affected IDPs in Gambella Region

<b>Status</b>	Completed
<b>Project Period</b>	September 2008 to December 2008
<b>Beneficiaries</b>	36,000 persons
<b>Budget</b>	USD 548,668
<b>Donor</b>	Humanitarian Response Fund Ethiopia

### Disaster Risk Reduction in Gambella

<b>Status</b>	Project Proposal
<b>Project Period</b>	3 years
<b>Expected Beneficiaries</b>	Vulnerable populations in Gambella region
<b>Proposed Budget</b>	USD 1 million
<b>Partners</b>	IOM, SP and ZOA Refugee Care

# KENYA

## BASIC FACTS

**Total Area:** 582,646 sq km

**Population:** 35,599,000

**Gross Domestic Product (GDP) per capita PPP:** USD 1,240

**Net Migration Rate:** 1.3 migrants/1,000 population

**Annual Remittances:** USD 1.2 billion

Types of Events	Types of Movement	Types of Response
Drought Food crisis Political instability	Internal displacement Cross-border movement	Durable solution through sustainable return Community stabilization and livelihood Disaster risk reduction Climate change adaptation



Chronic droughts lead to water shortages and challenges livelihoods of present and future generations in Kenya and in the region. © IOM

# Planting Seeds of Hope: Helping to Alleviate Food Insecurity and Improve Livelihoods in Kenya

<b>Status</b>	Ongoing and Project Proposal <sup>10</sup>
<b>Projects Period</b>	February 2009 to January 2010
<b>Beneficiaries</b>	Currently 10,000 households
<b>Combined Budgets</b>	USD 11.8 million (ongoing projects)
<b>Donor</b>	Government of Japan / Tokyo International Conference on African Development (TICAD)

## Environmental Challenges and Other Intervening Factors

### *Feeding the fire: How drought contributes to instability and conflict in Kenya*

In the northern parts of Kenya, crop failure due to poor rains and chronic drought has been a significant aggravating factor to an already unstable situation. Climate change has likely been a key driving factor behind the unreliable rainfall. An assessment by the Kenya Meteorological Department indicates that the “long rains” (March-April and May) this year were poor over most parts of the country. The most depressed rainfall was recorded in the northern and coastal districts. Therefore, poor pasture conditions and limited water resources for livestock are expected to persist in these areas.

Prolonged and cyclic drought is further affecting pastoralist communities in already strained regions which are suffering from slow-onset disasters related to loss of pasture, scarcity of water, declining terms of trade for sheep, goats and cattle, high food prices and famine. In addition, due to low productivity of the rangelands and high variation in rainfall, pastoralists are forced to move frequently to exploit available resources between seasons. This has caused growing cross-border, resource-based armed conflicts.<sup>11</sup>

<sup>10</sup> See project details at the end of the country section.

<sup>11</sup> See Eastern Africa programmatic profile for further details on the Security in Mobility initiative.

As a result, the vast majority of pastoralist communities in Turkana have disengaged from their traditional activity and turned to charcoal burning, thus overusing already strained local resources. As the only visible alternative livelihood activity, charcoal burning further contributes to the deforestation of the area and aggravates the effects of climate change.<sup>12</sup>

**On 31 December 2007, the contested presidential election fuelled widespread protests, which resulted in the deaths of more than 1,200 people and the displacement of some 350,000. Farmers were forced to flee their homes. Over the year 2009, poor rains and chronic drought in the northern parts of Kenya put food security in the country at risk. The sharp increase in fertilizer prices further heightened the crisis.**

## IOM Programmatic Responses

Because the situation had the potential to degenerate into a severe humanitarian crisis, decisive action was needed. The *Integrated Response to Food-Insecure Vulnerable Families in the Rift Valley and Northern Regions of Kenya*, started in January 2009, was a response to the Government of Kenya's appeal for assistance with food shortages. Working with the government and its partners, IOM is providing support to crisis-affected households through agricultural and non-land-based livelihood activities.

### *Addressing food insecurity by creating means to adapt*

A first priority was to identify and meet the needs of internally displaced persons (IDPs) in areas of return and populations in regions most affected by the food crisis. To this end, IOM worked with the government and key actors to ensure even and equitable distribution of assistance and support for returning IDPs.

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<sup>12</sup> When forests are logged or burnt, carbon is released into the atmosphere, increasing the amount of carbon dioxide and other greenhouse gases and accelerating the rate of climate change. So much carbon is released that they contribute up to one-fifth of global man-made emissions, more than the world's entire transport sector.

The next step was to introduce stabilization projects at the community level. The objective was to improve prospects for food security and poverty reduction linked to unemployment through the creation of income opportunities. These income-generating activities improve conditions necessary for the reintegration of affected communities and limit the risk of additional displacement.

To this end, Community Improvement Councils were established, which helped support initiatives such as vocational training and income-generating activities. Food for Work and Cash for Work programmes, as well as a grant scheme (including a voucher scheme), were also introduced. These livelihood-related activities were synergized and reinforced with the livelihood component of the Japanese-funded project *Shelter and Livelihoods for Peace and Reconciliation*, implemented north of the Rift Valley, the grain basket of the country, and more specifically targeting vulnerable households affected by the post-election violence of 2008.

#### Project Proposal: A Comprehensive Approach to Prevent Food Insecurity

An additional initiative has been developed to address the needs of drought-affected populations<sup>13</sup> in the region of Lake Turkana. This initiative focuses on reducing their vulnerability through capacity building and community stabilization efforts.

Still under development, the project *Support to the Most Vulnerable People Affected by Climatic Hazards in North Western Kenya through Livelihood Activities and Improvement of Water and Sanitation* aims to build capacity in:

- raising and breeding livestock, including the distribution of hybrid livestock;
- rain-fed crop farming and irrigation;
- improving water and sanitation, including sampling of contaminated wells and
- facilitation of hygiene-promotion sessions;
- promoting alternative livelihoods and income-generating activities, including the provision of grants and improvement of marketing and market access.

As a result of these activities, drought-affected communities are expected to improve their livelihoods and build resilience to the effects of drought.

<sup>13</sup> Particularly pastoralists in the north-western districts of Turkana, the eastern district of Garissa and the Eldorat in the Northern Rift Valley



## Lessons Learned and Sustainability

### *Promoting community participation*

In Kenya, IOM works on a consultative basis to ensure community ownership of the project's aims and outcomes. The establishment of Community Improvement Councils, for example, encourages participatory decision making. It also engages local NGOs and authorities to carry out community stabilization projects that improve communities' ability to host stranded migrants. Other examples include graze-land development activities, which call on local community participation in the form of cash for work, as well as local campaigns to clean up contaminated wells.

### *Sustainability of efforts and the environment*

Business initiatives only survive if there are markets in which to sell. In recognition of this, IOM will assist in initiating supportive structures to promote the expansion of emerging livelihood activities, such as the provision of credit facilities, savings and loan schemes, establishment of markets and creation of cooperative societies.

Additionally, special attention will be given to developing linkages with national markets in Kenya, as well as exploring export markets. The potential for fair trade opportunities will also be explored with a mind to accessing European markets. In this way, the output of efforts may find space in both local and international markets, encouraging further growth and development.

Environmental sustainability, in tandem with livelihood stability, is being promoted by raising awareness of issues such as the impact of deforestation on drought. Education on forestry conservation and training on how to build gabions to reduce erosion are further endeavours that contribute to this goal.

### *Meeting the needs of vulnerable groups*

Women are a particularly vulnerable group in situations of instability, whether conflict or environmentally related. Therefore, they should

be targeted for assistance. Providing income-generating tools, such as *posho* mills and other food processing equipment, is important to empower women to cope with the situation.

### *Reducing the risk of future drought*

Drought will undoubtedly persist in the region. It is important to prepare for it and build resilience. Hence, disaster risk reduction (DRR) is a key consideration in IOM project planning. For example, food crops that are distributed have to be drought-resistant. Vaccination and deworming of cattle have to be planned in order to safeguard livestock against the spread of disease during severe drought.

Other sound DRR measures include the construction of:

- irrigation schemes to provide alternatives to unreliable rainfall patterns;
- rainwater harvesting structures to prolong the stay of pastoralists in their normal rangelands. This will reduce movement that tend to aggravate inter-communal conflict stemming from inadequate resources.

### *Reviving traditional techniques and skills to address present-day challenges*

Methods used in the past to help communities adapt to environmental realities can be equally useful in present-day contexts. One example is the traditional rock water catchment area, a mechanism which IOM plans to revive together with its local partners to help preserve rainwater reserves. Additionally, training in traditional skills, such as basketry and medicinal herbs, provide livelihood opportunities.

## List of Projects

### Integrated Response to Food-Insecure Vulnerable Families in the Rift Valley and Northern Regions of Kenya

Status	Ongoing
Project Period	January 2009 to December 2009
Beneficiaries	3,000 households
Budget	USD 5 million
Donor	TICAD

### Shelter and Livelihoods for Peace and Reconciliation in the North Rift Valley

Status	Ongoing
Project Period	February 2009 to January 2010
Beneficiaries	8,000 households
Budget	USD 6.8 million
Donor	Government of Japan

### Support to the Most Vulnerable People Affected by Climatic Hazards in North-Western Kenya through Livelihood Activities and Improvement of Water and Sanitation

Status	Project proposal
Project Period	N/A
Expected Beneficiaries	35,000 direct beneficiaries
Proposed Budget	USD 1 million

# MADAGASCAR

## Basic Facts

**Total Area:** 587,040 sq km

**Population:** 18.5 million

**Gross Domestic Product (GDP) per capita PPP:** USD 1,000

**Net Migration Rate:** N/A

**Annual Remittances:** USD 11 million

Types of Events	Types of Movement	Types of Response
Tropical cyclones Heavy rains Seasonal flooding Coastal erosion	Voluntary relocation	Disaster risk reduction Climate change adaptation Durable solutions through sustainable relocation

Flooded villages after the cyclone in the north-eastern coast of Madagascar. © IOM 2004



# Moving to Avoid the Worst: Voluntary Relocation of Communities Affected by Cyclones, Flooding and Coastal Erosion

Status	Project Proposal
Project Period	N/A
Expected Beneficiaries	4,800 families
Proposed Budget	USD 2,052,467

## Environmental Challenges and Other Intervening Factors

Madagascar is the most vulnerable country in Africa to tropical cyclones: on average three to four cyclones hit the country yearly. All 22 regions are at risk, although the high plateau and the south tend to be less frequently affected. Some 25 per cent of the population lives in areas at risk. In 2008, a fairly typical cyclone year, Madagascar was hit by three cyclones. Overall, the disasters left 106 people dead, 340,000 displaced and 54,000 buildings destroyed.<sup>14</sup>

### The Impact of Climate Change on Tropical Cyclone Activity

Tropical cyclones are caused by a combination of conditions. A warm sea surface temperature is a key factor triggering such an event. Over the past several decades, it has been observed that sea surface temperatures over most of the tropical ocean basin have increased in magnitude by between 0.25-0.5 degrees Celsius.

Most scientists now accept that the most likely primary cause of the observed warming is increased concentrations of anthropogenic greenhouse gases. If the increase in greenhouse gases continues on its current trajectory, sea surface temperatures are expected to increase by an even greater degree in the twenty-first century than during the twentieth century, with devastating implications on populations that will be affected by more prevalent and intensified cyclone activity.

### *Inundated and displaced: The effect of the 2006-2007 cyclones on island communities*

Cyclones and floods of increased number and intensity have been claiming more and more lives and destroying infrastructure and

<sup>14</sup> More information is available at <http://www.irinnews.org/Africa-Country.aspx?Country=MG>.

livelihoods in Madagascar. This increase is a result of the rise in sea surface temperatures, which is likely related to the effects of climate change (see box for further details).

Between December 2006 and April 2007, six cyclones hit the island, inflicting suffering on communities in different ways. Some communities were flooded, and people's homes were partly destroyed by rivers that had been unusually destructive due to the combined effects of deforestation and exceptional rainfall. Other communities situated in wide alluvial basins were flooded by water from swollen rivers, often over longer periods. The inhabitants lost their belongings and had to find shelter in crowded public buildings until the floods receded.

The communities just south of Antalaha, a village situated in the north of the island, face another serious problem: erosion by the sea. With each cyclone, part of the sandy underground on which their villages are built disappears, possibly due to the combined effects of the degradation of coral reefs and the increased intensity of cyclones. For several years, roads and bridges have had to be relocated towards the interior after each cyclone.

### *When adaptation to a changing environment means relocation*

The cyclones of 2007 motivated communities to relocate despite their strong attachment to their ancestral land. The Sambirano River has a branch that recently started eroding the ground under the administrative centre of the neighbouring village of Ankatafa, destroying schools and offices. Roads were covered in sand in the district centre in Mampikony and highways were washed away by the floods. These and other results of the cyclones have forced the authorities to select a new site for the community.

**Reacting to similar devastation, two communities in the Mampikony District (Region of Sofia) submitted a formal request for assistance from the Bureau National de Gestion des Risques et Catastrophes (BNGRC) to be relocated from their villages, which are regularly flooded during the cyclone season, to nearby safer areas. In order to respond to these requests, the BNGRC solicited the support of IOM.**

These communities wish to move only short distances, as they want to remain as close as possible to their fields. According to the farmers, seasonal floods contribute to the fertility of the soil as long as they do not bring in sand. However, the intensity of the floods of 2007 has convinced some communities that they need to build their houses and community buildings in safer places. Furthermore, it is important for the concerned communities to complete their relocation before the next cyclone season.

## IOM Programmatic Responses

### *Responding to the call for help: Assisting in the relocation of affected communities*

While assistance programmes have usually focused on the need for food, short-term shelter, health and education in the aftermath of cyclones, the *Pilot Voluntary Relocation of Selected Communities Affected by Cyclones and at High Risk of Further Flooding and Erosion in Madagascar* project proposes to reduce the impact of future cyclones by responding to requests for voluntary relocation of populations living in areas that are particularly at risk of flooding by rivers or of erosion by the sea.

This project was first proposed as part of the global early recovery plan led by the United Nations Development Programme (UNDP) in the context of the revised UN Flash Appeal in May 2007. Furthermore, the project fits into the cluster approach agreed by the Inter-Agency Standing Committee (IASC)<sup>15</sup> and implemented at the national level in Madagascar.

The project proposal was developed based on assessments carried out in the regions of Boeny, Sofia, Diana and Sava in the northern part

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<sup>15</sup> The cluster approach was proposed by the **Inter-Agency Standing Committee (IASC)** in the 2005 Humanitarian Response Review as a way of addressing gaps and strengthening the effectiveness of humanitarian response through building partnerships and clarifying roles and responsibilities of organizations within the different sectors of humanitarian response. Global cluster leads have been designated in 11 areas of humanitarian activity. At the global level, IOM leads the Camp Coordination and Camp Management (CCCM) Cluster for Natural Disasters and actively participates in the Logistics, Early Recovery, Health, Emergency, Shelter and Protection Clusters.

of Madagascar, which had been particularly affected by the cyclones Indlala and Jaya. The assessments were conducted in close cooperation with the BNGRC and the Ministère pour l'Aménagement du Territoire. They confirmed that all relocations could take place within a radius of 5 kilometres (in some cases even less than 1 kilometre). This would allow relocated communities to have continued access to most of their original agricultural land and original fishing areas. Ultimate responsibility for selecting the priority communities to be relocated lies with the Government of Madagascar.

The expected result of the proposed action will be the relocation of approximately 20,000 persons living in 3,300 households in nine municipalities in the northern part of Madagascar. The project also includes building of infrastructure (schools, other public buildings, wells, roads to and in the new locations), which can endure periodic cyclones and floods. In a number of already verified cases, community buildings are already positioned in safer and better locations than most houses and therefore do not need to be rebuilt.

## Considerations in Moving Forward

### *Replicating success*

**As a pilot project, this effort aims to gain useful experience that can be replicated in neighbouring communities facing the same problems of repeated flooding or erosion.** Thus, the potential for replicability will be noted and evaluated throughout the duration of the project. An important element will be continuous evaluation by project partners of the technical soundness and feasibility of the proposed relocations, potential risks in the new proposed locations, implications for economic life, and the needed infrastructure and possible environmental impact of the relocation.

### *Ensuring that everyone is on board*

In all proposed cases, IOM, in cooperation with local authorities, will continue to verify the presence of a firm expression of interest among beneficiaries concerning relocation and the availability of land for resettlement.



### *Expanding the target beneficiaries*

While the project is based on a pilot caseload in need of complete reconstruction of their houses, an additional 1,500 households that have completed their relocation will benefit from communal infrastructure improvements (schools, supply of drinking water, access roads and roads within new settlements). Furthermore, additional assistance will be provided to those households which have already undertaken efforts to resettle.

### *Preparing for similar occurrences in the future*

The proposed activities cover the needs of a population at an early recovery phase, but also contribute to sustainable development of the selected communities by reducing the risks of future cyclone damage. For example, IOM has been providing support with construction material to make houses more resistant to cyclones. This is particularly pertinent considering that once the villages are relocated to higher locations, likely damage during the next cyclones will be due to the wind.

## Project Proposal

### **Pilot Voluntary Relocation of Selected Communities Affected by Cyclones and at High Risk of Further Flooding and Erosion in Madagascar**

Status	Project Proposal
Project Period	N/A
Expected Beneficiaries	3,300 families as direct beneficiaries and an additional 1,500 families as indirect beneficiaries
Proposed Budget	USD 2,052,467

# MALI

## BASIC FACTS

**Total Area:** 1.25 million sq km

**Population:** 11,611,000

**Gross Domestic Product (GDP) per capita PPP:** USD 998

**Net Migration Rate:** 4.5 migrants/1,000 population

**Annual Remittances:** USD 155 million

Types of Events	Types of Movement	Types of Response
Drought Tension over land	Rural migration (temporary and permanent)	Research on migration and the environment Climate change adaptation Preventing forced migration

Mali's Lake Faguibine virtually disappeared between 1974 and 2006 mainly due to an extended dry period in the 1980s. © Care International Mali 2007



# Human Security in Action to Address Vulnerability in the Niger Inner Delta

Status	Project Proposal
Project Period	2 years
Expected Beneficiaries	Population in the Niger Inner Delta affected by climate change-induced environmental degradation; local and national authorities; local NGOs
Proposed Budget	USD 2.2 million

## Environmental Challenges and Other Intervening Factors

The Niger Inner Delta is a vast flood plain with its northern part at the edge of the Sahara Desert. With 4,119,500 hectares, the Inner Delta is the largest inland wetland in West Africa and the second-largest wetland in Africa. This area features a wide range of varied and interconnected ecosystems – lakes, flooded grassland and savannah. Of major importance both ecologically and economically to agriculture, forestry, fisheries and livestock breeding, the Niger Inner Delta plays a very important role in food security and water management in Mali.

### *A disappearing lifeline*

Partly as a consequence of climate change, the Delta has been threatened for several decades by the continuous degradation of its resources and reduction of flooded areas. According to *Africa: Atlas of Our Changing Environment*,<sup>16</sup> a 2008 publication by the United Nations Environment Programme (UNEP), Mali's Lake Faguibine (located in the northern part of the Delta – see box below) virtually disappeared between 1974 and 2006, mainly due to an extended dry period in the 1980s.

Climate variability can induce large population movements, as noted by a recent mission to the Faguibine System area. It identified that 100,000 people, nearly half of the population, migrated when drought struck, while the many who stayed were unable to continue their traditional activities.

<sup>16</sup> Available at <http://www.unep.org/dewa/africa/AfricaAtlas/>.

**Considering the high involvement of women in subsistence farming and water collection in the region, water scarcity is likely to affect them in particular.** With nearly 1 million people depending directly or indirectly on delta ecosystems service delivery for their survival, and about 30 different ethnic groups occupying the area, the human security of the region's inhabitants and social stability is at heightened risk. It has been demonstrated that increased tension over dwindling natural resources was one of the contributing factors to the Touareg Rebellion (1990-1995), which strongly affected the area with more than 300,000 refugees and IDPs.

#### *Expanding Our Knowledge...*

##### **Migration Current Trends in Mali: Environmental and Health Aspects in the Faguibine System**

The Faguibine System is a vast zone of flood plain made up of lakes, backwaters and plains located within the Niger Inner Delta (see "Environmental Challenges and Other Intervening Factors" above). Throughout history, it has been an area subject to heightened tension over its rich natural resources, namely water and fertile lands at the gate of the Sahara. Beginning in the 1970s, hydro-climatic variations and persistent dryness was felt in the Faguibine System. Approximately three-fourths of fertile lands were lost with a significant reduction of fodder production and fish stock. Permanent migration out of the Faguibine System began to occur as a result. According to agro-economic studies conducted in the 1990s, the south of the Faguibine System, populated by sedentary populations, was particularly affected, with several villages almost completely abandoned.

*Brief overview of some of the results of an IOM study (2009)<sup>17</sup>*

- Agro-ecological and environmental conditions are increasingly deteriorating (e.g. rain deficit; scarcity of water resources and loss of fertile lands; food insecurity; drastic fodder and fish stock reduction).
- The area is experiencing ongoing socio-economic changes, e.g. emergence of women household heads; school loss among children who move to the big cities; formerly marginalized social groups engaging in emancipation movements; migration to agricultural areas and urban centres (Tombouctou, Mopti, Ségou and Bamako); upheaval of production system formerly based on the sharecropping system.

<sup>17</sup> This study has been commissioned by IOM in cooperation with the Economic Community of West African States (ECOWAS) and funding from the European Commission's AENEAS programme in the context of the project on Migration in Western Africa: National Profiles for developing strategic policies.

- The structural determinants of migration include low income and lack of development prospects.
- Displacements to urban centres and where agricultural opportunities exist tend to be permanent.
- A high percentage of the migrants include unmarried girls, unemployed young peasants and young people excluded from school.
- Since the end of the Touareg Rebellion in 1995, some 170,000 refugees have returned to the Faguibine System. As part of the Alger agreements between the Malian Government and a coalition of rebel movements, a development programme was implemented, including the rebuilding of basic social infrastructure, the promotion of income diversification, assistance to irrigated agriculture, and actions against natural resources depletion.

The study will also contribute to the development of a comprehensive National Migration Profile (NMP) in Mali, through the compilation of reliable data on the interrelationships between migration and environmental and health factors.<sup>18</sup>

Recent developments regarding governance issues offer a promising ground for local solutions. Mali has a forward-looking government that came to power democratically. The decentralization policy initiated in 1999 has become one of the key factors contributing to consolidate democracy and reduce poverty – one more reason to focus on a particular area. Gradually, more and more decision-making powers are being transferred to local government structures despite a significant lack of financial resources to run public services, for which each municipality is responsible by law.

## IOM Programmatic Responses

IOM recognizes that the ongoing environmental degradation in the Niger Inner Delta and the permanent out-migration that it generates poses a long-term threat and development challenge for Mali. In view of this, the organization has partnered with UNEP to develop a comprehensive project proposal. The objectives of the project, *Addressing Climate Change Implications on Migration and Human Security: Practical Actions, Empirical Research and Policy Recommendations*, are to assist communities in the Niger Inner Delta to better adapt to the consequences of climate change and improve planning by integrating migration and human security.

<sup>18</sup> The purpose of the NMPs is to build the administrative capacity of targeted countries to measure, analyse and manage the migratory phenomena and foster its potential for development.

## *Mainstreaming migration into adaptation strategy*

In the first phase, which focuses on field research and consultations, a migration profile and vulnerability mapping for the Inner Delta will be developed. An expected outcome is the integration of migration and human security concerns into three projects developed as part of the National Adaptation Programme of Action (NAPA) for Mali.<sup>19</sup> A technical working group comprising local and national experts will be formed to ensure ownership of the projects.<sup>20</sup>

During the second phase, selected NAPA projects will be implemented in the Inner Delta, with the objective of increasing the capacities of local and national implementing partners and communities to adapt to the impact of climate change. This objective will be achieved through a combination of practical actions in the fisheries and agricultural sector, such as the implementation of measures to protect the environment and the dissemination of technology and knowledge. It will also look at how migration – in particular, temporary or seasonal migration – could contribute to increase the resilience of local families.

In the third and final phase, a project evaluation will be undertaken with the objective of producing a set of policy recommendations for national actors with regard to updating their NAPA. **The purpose of this activity will be to concretely demonstrate the usefulness of mainstreaming migration and human security into national and local strategies to adapt to climate change and environmental degradation.**

## Considerations in Moving Forward

The lack of available data and structure to assess human mobility has been noted during the process of developing a migration profile for

<sup>19</sup> The NAPA for Mali was released in December 2007 and is available at <http://unfccc.int/resource/docs/napa/mli01f.pdf>

<sup>20</sup> This technical working group may also be linked with the sub-committee in charge of “Migration and Environment” for the inter-ministerial technical group in Mali on Migration and Development, comprised of the Ministry of Environment, UNDP, l’Institut de Recherche pour le Développement (IRD), the Center for Studies and Research on Population for Development (CERPOD) and Centre d’Information et de Gestion des Migrations (CIGEM), and created as part of the IOM Migration Profile project for Mali.

Mali. Hence, it was decided that a specific profile should be developed for the Niger Inner Delta region (see box “Expanding Our Knowledge”). In addition, IOM continues its close cooperation with local partners and the government to strengthen data-collection methodology and capacities.

The particular vulnerabilities of women will be taken into account, as well as the need to involve them in decision-making processes to ensure the sustainability of project achievements.

Replicability is an important aspect of this project. The methodology used, starting from research to implementation and evaluation, should allow for replication in other areas in Mali or the Sahel that are experiencing environmental degradation and migration pressure with human security implications. There should be a careful balance between practical actions and further analysis and planning.

## Project Proposal

**Addressing Climate Change Implications on Migration and Human Security: Practical Actions, Empirical Research and Policy Recommendations**

Status	Project Proposal
Project Period	2 years
Expected Beneficiaries	Population in the Niger Inner Delta affected by climate change-induced environmental degradation; local and national authorities; local NGOs
Requested Budget	USD 2.2 million

# MAURITIUS

## BASIC FACTS

**Total Area:** 2,040 sq km

**Population:** 1,241,000

**Gross Domestic Product (GDP) per capita PPP:** USD 12,715

**Net Migration Rate:** 0 migrants/1,000 population

**Annual Remittances:** USD 215 million

Types of Events	Types of Movement	Types of Response
Sea-level rise Altered precipitation patterns Tropical cyclones	Internal and potentially external migration	Research on migration and the environment Disaster risk reduction Climate change adaptation Migration and development

The first two feet under water? Sea-level is a real and recognized threat in Mauritius.  
 © IOM 2009





# Sustainable Development: Addressing Migration Pressure from Gradual Environmental Change

Status	Project Proposal
Project Period	January 2010 to January 2011
Expected Beneficiaries	Government officials in relevant ministries; 10 job seekers
Proposed Budget	USD 200,000

## Environmental Challenges and Other Intervening Factors

### *Mauritius and sea-level rise: A real and recognized threat*

On an island such as Mauritius, the meteorological impact of climate change could be disastrous, as a result of rising sea levels, altered precipitation patterns and fiercer hurricanes. Coupled with increasing demographic pressure on exiguous territories, the sustainability of natural resources is at stake due to competition for agricultural and urban lands and overexploitation, especially in the fish and seafood sectors.

The 2005 *Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small island developing States* (SIDS)<sup>21</sup> explicitly recognizes the threat posed by climate change not only in the future but also at the present time:

*The adverse effects of climate change and sea-level rise present significant risks to the sustainable development of Small island developing states, and the long-term effects of climate*

<sup>21</sup> SIDS are small islands and low-lying coastal countries that share similar sustainable development challenges, including a small population, lack of resources, remoteness and susceptibility to natural disasters. In April 1994, the first Global Conference on Sustainable Development of SIDS was convened in Barbados. The conference adopted the Barbados Programme of Action (BPoA) that set forth specific actions and measures to be taken at the national, regional and international levels. The BPoA was followed in 2005 by the so-called Mauritius Strategy for 2005-2015 that not only recognizes climate change as a threat, but also refers to the need for adaptation and disaster risk reduction in line with the Hyogo Framework for Action. More information is available at <http://www.un.org/smallislands2005/>.

*change may threaten the very existence of some small island developing states. Based on the Secretary-General's report and other available data, small island developing states believe that they are already experiencing major adverse effects of climate change. (Paragraph 16)*

This strategy helps to further identify the global and local actions needed to address specifically and exclusively the problems of island states for the period 2005 to 2015. In particular it acknowledges that “Adaptation to adverse impacts of climate change and sea-level rise remains a major priority for small island developing states (Paragraph 16).” It is within this framework that IOM’s programmatic responses have been developed.

## IOM Programmatic Responses

The preventive actions of the project aim to contribute to mitigate the impact of climate change on potential internal and cross-border environmental migration in vulnerable islands such as Mauritius. **It is a fact that the most cost-effective and humane policy options involve obviating the need for environmental forced migration by intervening at the earliest stage possible.**

### *Enhancing the knowledge base to inform policies and strategies*

The project aims to reduce the effect of climate change and environmental degradation on impending migration, firstly through awareness raising and capacity building of national institutions in Mauritius. The starting point will be a national assessment, which is central to a better grasp of the phenomenon in the context of Mauritius. The assessment will also look at how migration can contribute to adaptation as a tool for investment in sustainable development for targeted groups, such as the diaspora. Strengthening institutional capacities and levels of awareness of the issue through training would contribute to developing comprehensive and coherent policies with regard to migration and environmental degradation. A strong emphasis will be put on disaster risk reduction (DRR) and climate change adaptation (CCA) strategies.

### *Taking positive and proactive measures*

Secondly, the project will explore new and innovative employment opportunities in the ecological sector (recycling, ecotourism, renewable energies, etc.) to contribute to sustainable development in Mauritius (including the island of Rodrigues). This component is in line with existing programmes and strategies already developed on the island, in particular the Empowerment Programme<sup>22</sup> and the Mauritius Sustainable Island Fund.

Experiences in some African countries (Morocco), in SIDS (Tuvalu) and even in Mauritius have shown that recycling and ecotourism represent an important potential for job creation.<sup>23</sup> Through training and information-sharing activities, the project will enhance institutional capacity to assist individuals or groups of individuals who may wish to start an income-generating activity in one of these sectors. At the same time, relevant ministries and institutions will receive training in promoting employment in the ecological and environmental sectors. Furthermore, opportunities will be created to share information and experience with other countries and islands in the region.

**Offering new prospects for employment in the environmental sector of Mauritius would help to sensitize the local population to the threat posed by climate change and global warming.** It will also contribute to reduce risk through positive actions, while remaining consistent with strategies to alleviate poverty and unemployment in the island.

### *Considerations in Moving Forward*

#### *Piloting to prove it can work*

This 12-month pilot initiative will set the foundation for enhancing institutional capacity of the national bodies in charge of environmental

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<sup>22</sup> The Empowerment Programme includes the following seven actions: (i) providing land for social housing; (ii) providing land for small entrepreneurs; (iii) establishing a workfare programme emphasizing training and re-skilling; (iv) establishing special programmes for unemployed women; (v) providing support for the development of small and medium enterprises (SMEs); (vi) creating five tourist villages; and (vii) providing assistance for outsourcing.

<sup>23</sup> See also Senegal Programmatic Profile below for further illustration on employment in the environmental sector.

and employment matters in Mauritius. These stakeholders will receive the necessary tools to train and bring to the people employment opportunities in environmental sectors that are still unknown and/or unexploited in Mauritius. Employment in such areas as recycling, renewable energies, composting and ecotourism can be regarded as emerging activities, still new and not well-known.

### *Making it regional*

This project is being undertaken as a pilot initiative with potential for replicability at the regional level. Based on project outcomes and lessons learned, similar projects may be initiated in countries/islands such as Madagascar, the Seychelles and the Comoros. Therefore, an important component will be the dialogue and information-sharing between the different ministries and institutions involved, and between different regions and islands, where similar experiences and initiatives could be shared in order to foster bilateral and regional cooperation. In that sense, and in order to ensure the long-term sustainability of the project, it will be critical to work with regional organizations, particularly the Indian Ocean Commission (COI).<sup>24</sup>

## Project Proposal

### The Other Migrants: Reducing Migration Pressure from Gradual Environmental Change – Environment and Sustainable Development in Mauritius

Status	Project Proposal
Project Period	November 2009 to November 2010
Expected Beneficiaries	Government officials in relevant ministries; 10 job seekers
Proposed Budget	USD 252,076

<sup>24</sup> The Indian Ocean Commission (COI), known as the Commission de l'Océan Indien, is an inter-governmental organization which brings the countries/islands of Comoros, Madagascar, Mauritius, France (Reunion and Mayotte), and the Seychelles together to promote cooperation. The organization was created in January 1983 under the General Victoria Agreement.

# MOZAMBIQUE

## BASIC FACTS

**Total Area:** 812,379 sq km

**Population:** 21.8 million

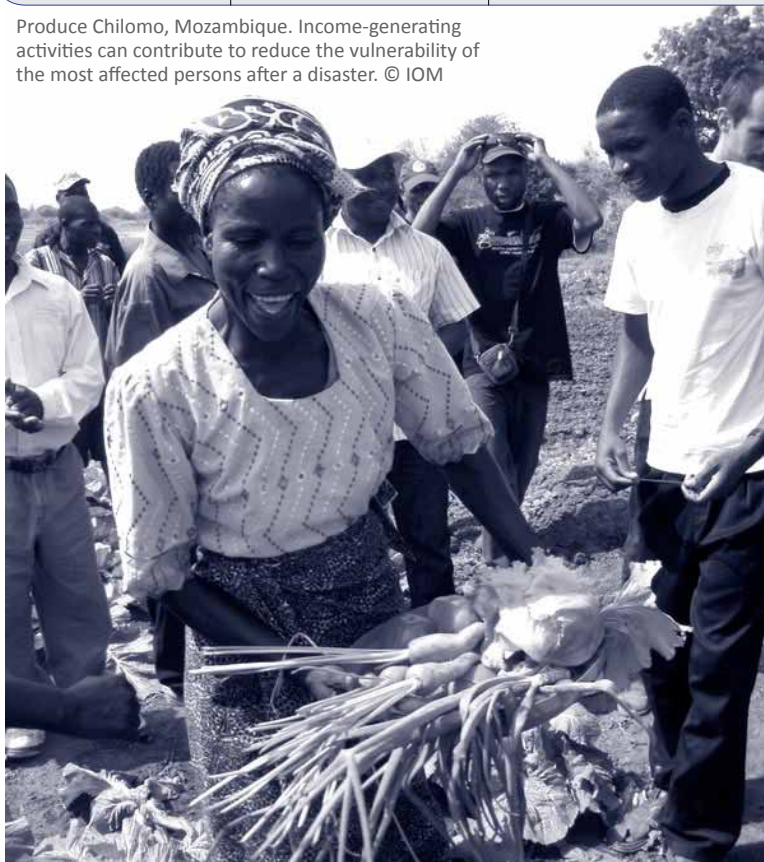
**Gross Domestic Product (GDP) per capita PPP:** USD 1,242

**Net Migration Rate:** -0.2 migrants/1,000 population

**Annual Remittances:** USD 80 million

Types of Events	Type of Movement	Types of Response
Drought Heavy rains Seasonal flooding	Internal displacement	Disaster risk management/ Emergency response Disaster risk reduction/Disaster preparedness

Produce Chilomo, Mozambique. Income-generating activities can contribute to reduce the vulnerability of the most affected persons after a disaster. © IOM



# Recurring Natural Disasters in the Zambezi Valley

<b>Status</b>	Ongoing <sup>25</sup>
<b>Projects Period</b>	November 2007 to December 2009
<b>Total Beneficiaries</b>	70,000 households
<b>Combined Budget</b>	USD 2.8 million
<b>Donors</b>	United Nations Central Emergency Response Fund (UN-CERF), European Commission Directorate-General for Humanitarian Aid (ECHO), Swedish International Development Cooperation Agency (SIDA), United Nations Mozambique Joint Fund, Government of Japan/Tokyo International Conference on African Development (TICAD)

## Environmental Challenges and Other Intervening Factors

### *Flooding in Mozambique: A recurring theme*

The Zambezi River basin has been hit in recent years by massive flooding aggravated by periods of prolonged drought. The increasing frequency of natural disasters, driven by climate change, has led to repeated destruction and disruption of families' livelihoods through crop loss and displacement.

Families affected by recurrent flooding also face higher risk of food insecurity as a result of natural disasters, due to high levels of economic, social and environmental vulnerability and weak capacity at the community and district level to respond to and recover from recurring disasters.

The majority of families settled in these areas are subsistence farmers living on less than one dollar a day and lacking opportunities for diversification of income and food sources. **Climate extremes are causing prolonged periods of drought and delayed or erratic rains. This puts even more pressure on families to produce along river beds, further increasing their exposure to floods.**<sup>26</sup>

<sup>25</sup> See project details at the end of the country section.

<sup>26</sup> See the Southern Africa Programmatic Profile below for additional information on the region.

## IOM Programmatic Responses

### *Meeting immediate and basic needs following an emergency*

During the floods of 2007 and 2008, IOM intervened with rapid life-saving programmes to assist the many families and communities internally displaced in the Zambezi Valley. Most of the population was relocated to government resettlement centres where IOM worked with its partner organizations in the shelter cluster<sup>27</sup> and began demarcating their allocated land.

During the emergency phase, 10,050 families received assistance from IOM and its implementing partners. The UN-CERF funding obtained by the shelter cluster enabled relief supplies of tarpaulins and emergency shelter materials and tools, as well as the provision of emergency kits containing blankets and cooking utensils to those who were most in need.

### *Expanding the response to community stabilization efforts: Focusing on health and shelter*

IOM's commitment to these internally displaced communities has now expanded to community stabilization projects, which include rehabilitating existing health centres and building first aid posts. The Inhangoma health centre has been rehabilitated, providing improved facilities for 32,598 families, while 23,532 families and 768 families have benefited from improvements to the Pinda and Mecaula health centres, respectively. Furthermore, seven first aid posts have been constructed to service 15,081 families.

Efforts also included the construction of permanent shelters for vulnerable households and the provision of basic sanitation. The

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<sup>27</sup> The cluster approach was proposed by the **Inter-Agency Standing Committee (IASC)** in the 2005 Humanitarian Response Review as a way of addressing gaps and strengthening the effectiveness of humanitarian response through building partnerships and clarifying roles and responsibilities of organizations within the different sectors of humanitarian response. Global cluster leads have been designated in 11 areas of humanitarian activity. At the global level, IOM leads the Camp Coordination and Camp Management (CCCM) Cluster for Natural Disasters and actively participates in the Logistics, Early Recovery, Health, Emergency, Shelter and Protection Clusters.

outcome was the construction of 80 transition houses and latrines in Morrumbala and Mutarara for vulnerable households. These shelters were provided for certified vulnerable households which had no means to either build or pay for a house themselves.

### *Early warning - early action: Limiting loss in the future through emergency radio broadcasting*

Disaster risk reduction (DRR) was seriously taken into consideration and incorporated into reconstruction efforts by instituting an early warning system. **IOM has been working with local partners to utilize and rehabilitate existing community radio stations and develop disaster preparedness (DP) programming for communities at risk of flooding. The aim is to expand broadcasting range as well as enable the stations to stay on air in times of extreme emergency.**

Additionally, IOM has developed DRR radio programmes involving local community groups to ensure that broadcast messages are relevant and contain locally understandable content. Four community radio stations have been rehabilitated, amplifying broadcasting range in the Zambezi Valley.

### *Reducing vulnerability through income-generation projects*

IOM has further endeavoured to promote food security and income-generation projects based on sustainable agricultural practices and income-management techniques. One of the central aims of these empowerment activities is to help reduce vulnerability to trafficking, particularly for women and children. As a result, 1,500 women have been identified and are actively taking part in income-generation activities and agricultural training.

## Lessons Learned and Sustainability

### *Challenges with resettlement centres*

Resettlement centres (referred to as “resettlement neighbourhoods”) were established by the government to preserve goods, food and livestock in secure zones. However, the creation of these resettlement neighbourhoods has also posed a number of challenges:



- Practices such as rapid deforestation for brick firing and burning to open new fields have increased ecological destruction and loss.
- Resettlement centres are characterized by low levels of active participation of women and young people in decision-making bodies within the communities, as well as low levels of literacy and knowledge of Portuguese to understand messages and information from the government
- There has been an increase in the number of vulnerable families due to the spread of HIV/AIDS.
- In addition, some communities in areas at risk of flooding or isolation have resisted moving into resettlement centres.

Despite this initial situation, working in close cooperation with local authorities and other partners has resulted in the following achievements:

- During implementation, it proved important to continue to provide support to the original target groups displaced by natural disasters with transitional and long-term stabilization programmes.
- An important lesson learned was that if emergency assistance is well-executed, the authorities tend to be more willing to work with and assist organizations in developing and implementing programmes that will assist communities to re-establish their livelihoods and assist authorities to provide sustainable infrastructure. The trust built over time between implementing organizations and the authorities enables organizations to address issues that national authorities tend to consider as their sole responsibility.
- It also appeared that if follow-up assistance was not forthcoming, sustainable communities would revert back to practices and return to areas that put them at risk. Therefore, DP and DRR should be prioritized.

- A holistic approach to community stabilization after a natural disaster should be based on human security and involve income-generation strategies, infrastructural rehabilitation, including shelter construction and improvement, increased access to water, improved road conditions, market stabilization and better access to education and health.
- It also became obvious that involving both women and youth in these processes was of utmost importance, as it can reinforce the communities' strength in decision making and adoption of new ideas.

## List of Projects

### Provision of Emergency Shelter and Non-Food Items to Flood Victims in Zambezi Valley and Lower Save in Mozambique

<b>Status</b>	Completed
<b>Project Period</b>	January 2008 to April 2008
<b>Beneficiaries</b>	15,200 displaced households
<b>Budget</b>	USD 599,200
<b>Donor</b>	UN-CERF

### Rehabilitation of "Type 1" Health Centres and Construction of First Aid Posts in Priority Resettlement Centres in Post-Flood Zambezi River Valley

<b>Status</b>	Completed
<b>Project Period</b>	November 2007 to July 2008
<b>Beneficiaries</b>	18,699 resettled families and 37,504 host families
<b>Budget</b>	USD 805,612
<b>Donor</b>	ECHO

### Provision of Emergency and Transitional Shelter to Most Vulnerable Households in Resettlement Areas

<b>Status</b>	Completed
<b>Project Period</b>	August to December 2008
<b>Beneficiaries</b>	80 households
<b>Budget</b>	USD 336,000
<b>Donor</b>	SIDA

### Strengthening Disaster Risk Reduction and Emergency Preparedness

<b>Status</b>	Ongoing
<b>Project Period</b>	August 2008 to September 2009
<b>Beneficiaries</b>	N/A
<b>Budget</b>	USD 553,706
<b>Donor</b>	United Nations Mozambique Joint Fund

### Counter-Trafficking Prevention and Community Support Project in the Flooded Areas of Mozambique

<b>Status</b>	Ongoing
<b>Project Period</b>	01 March 2009 to 31 December 2009
<b>Beneficiaries</b>	1,500 women
<b>Budget</b>	USD 500,000
<b>Donor</b>	TICAD

# SENEGAL

## BASIC FACTS

**Total Area:** 196,722 sq km

**Population:** 12.7 million

**Gross Domestic Product (GDP) per capita PPP:** USD 1,792

**Net Migration Rate:** -1.8 migrants/1,000 population

**Annual Remittances:** USD 874 million

Types of Events	Types of Movement	Types of Response
Drought Wild fires Deforestation	Rural-urban migration Potential irregular migration	Research on migration and the environment Climate change adaptation Reducing migratory pressure Migration and development



A “transhumant,” a migrant who moves together with his family and a simple carriage transporting all their belongings. In search for appropriate pasture land and water, they can walk thousands of kilometres.

© IOM October 2009

# Appreciating the Forest for the Trees and Employing Youth for Green Change

<b>Status</b>	Ongoing <sup>28</sup>
<b>Projects Period</b>	December 2008 to February 2012
<b>Beneficiaries</b>	30 youths for employment in the environmental sector; Government of Senegal - Ministry of Environment; media and community-based organizations
<b>Combined Budgets</b>	USD 289,337
<b>Donors</b>	IOM 1035 Facility; Spain Millennium Development Goals (MDG) Achievement Fund

## Environmental Challenges and Other Intervening Factors

### *From forest decline to lack of employment: The complex impact on migration*

Senegal faces a decline in its forests. Climatic variability, forest fires, deficit of rain and dryness, further exacerbated by climate change, affect and will increasingly affect the livelihood and human security of a large part of the population of Senegal. With 60 per cent of the population depending directly on the agricultural sector including forestry, it represents a daunting and pressing challenge.

Ultimately, forest decline also compromises the struggle for poverty alleviation and vulnerability reduction of local populations which depend closely on forests for food, energy, construction, health, etc. Potentially, it could fuel migration and even forced migration at an advanced stage of environmental degradation, a situation that is already perceptible through increased levels of permanent out-migration from forest areas to urban areas.

Such movements are further influenced by other intervening and related factors such as lack of employment opportunities. Unfortunately, the situation in cities like Dakar, the capital, is also difficult. This is

<sup>28</sup> See project details at the end of the country section.

particularly true for young Senegalese facing a high unemployment rate. The lack of opportunity to enter the labour market is often considered a “push” factor inducing movement abroad, often through irregular channels.

There is no direct causal link between climate change and irregular migration, but what the case of Senegal shows is how environmental factors can negatively contribute to unmanaged migratory movements by increasing people’s vulnerability – leaving them with little option but to migrate in search of more opportunities and a better life.

## IOM Programmatic Responses

To support efforts to address challenges posed to human mobility by environmental degradation and climate change, IOM has so far been focusing on the following two tracks:

- gaining better understanding of the complex interrelation between migration and the environment in forest areas;
- empowering and educating youths in the promotion of environmental sustainability by creating employment opportunities in this sector.

### *Understanding a complex relationship*

The project, *Valuation of Forest Ecosystems in Senegal*, which was started in 2009 and runs until 2012, is part of UN joint programming<sup>29</sup> in cooperation with the Ministry of Environment of Senegal. In spite of some progress, agro-forestry is still confronted with governance challenges in the area of environmental management and protection. Therefore, the overall goal of this programme is to contribute to poverty reduction through the sustainable conservation and management of forest ecosystems.

As part of the project, IOM is creating a database on the relation between environmental changes and human mobility. A set of case

<sup>29</sup> Other participating UN agencies are the United Nations Environment Programme (UNEP), Food and Agriculture Organization (FAO), United Nations Development Programme (UNDP), United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Industrial Development Organization (UNIDO) and World Food Programme (WFP).

study investigations are being conducted with the aim of better understanding the complex relations between migration and environment and the impact of climate change on this nexus. The objective is to provide evidence to formulate and inform adequate policies and strategies for the promotion of disaster risk reduction (DRR) and adaptation to climate change aiming at sustainable development.

### *Providing opportunities for green change*

The project, *Promotion of Youth Employment in the Environmental Sector in Senegal*, aims at developing opportunities in the recycling sector, in ecotourism, and bio-agriculture through training and information-sharing activities. Further, to ensure the economic sustainability of the project, it is building the capacity of concerned financial institutions in assisting unemployed youths who want to start an income-generating activity in this sector. Other activities include the organization of a workshop on good practices to promote youth employment in this sector, professional training for a group of Senegalese youth, as well as the provision of financial and technical assistance. The project hopes to demonstrate that the **environmental sector presents an important opportunity for young people, while at the same time contributing to the greening of the economy and raising awareness on current and future environmental challenges.**

### Guiding Principles

Although still ongoing, these two projects share some common strengths:

- the active participation and involvement of the Senegalese government;
- a multi-sectoral partnership that enables IOM and its partners to meet multifaceted challenges;
- the involvement of the young generation; despite their economic marginality youths are the future and they are often more receptive to new opportunities and more environmentally aware.

## List of Projects

### Promoting Youth Employment in the Environmental Sector in Senegal

<b>Status</b>	Ongoing
<b>Project Period</b>	December 2008 to February 2010
<b>Beneficiaries</b>	30 youths for employment in the environmental sector; relevant financial institutions; employment agencies
<b>Budget</b>	USD 175,000
<b>Donor</b>	IOM 1035 Facility

### Valuation of Forest Ecosystems in Senegal

<b>Status</b>	Ongoing
<b>Project Period</b>	February 2009 to February 2012
<b>Beneficiaries</b>	Government of Senegal - Ministry of Environment; media and community-based organizations
<b>Budget</b>	USD 114,337 (represents IOM's share of this USD 4 million project implemented in partnership with UNDP, UNEP, FAO, UNESCO, UNIDO and WFP)
<b>Donor</b>	Spain MDG Achievement Fund through UNDP



# SUDAN

## BASIC FACTS

**Total Area:** 2.5 million sq km

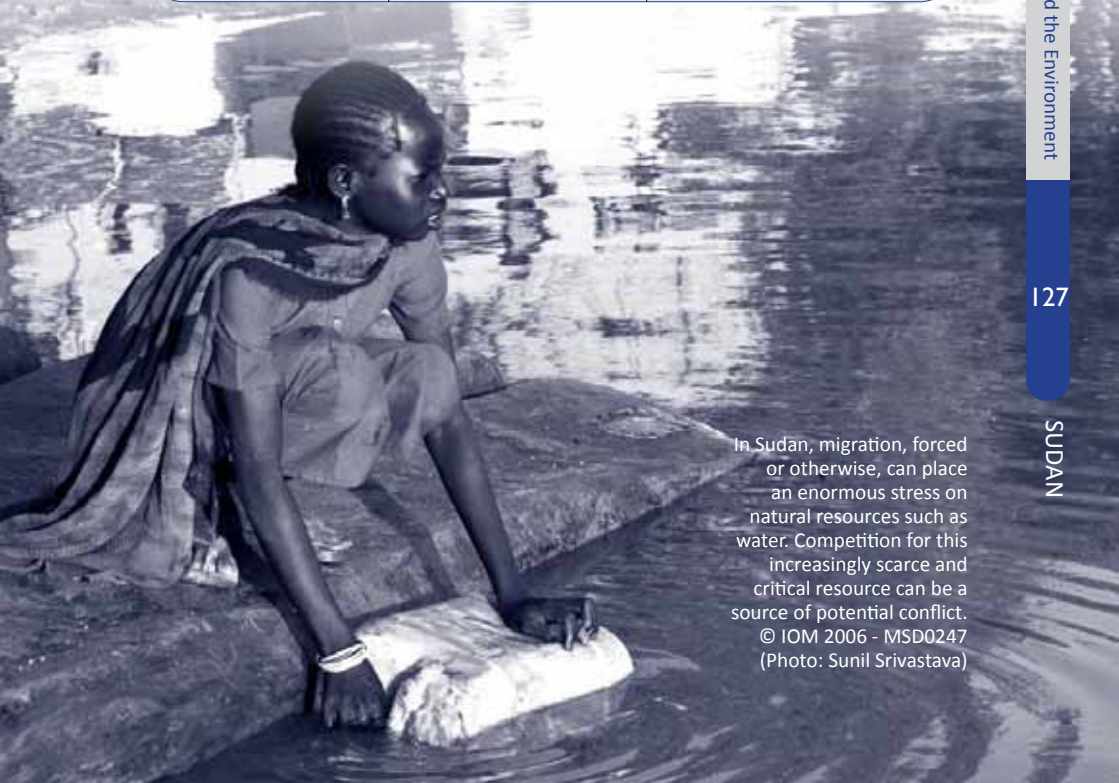
**Population:** 36,233,000

**Gross Domestic Product (GDP) per capita PPP:** USD 1,949

**Net Migration Rate:** -3.0 migrants/1,000 population

**Annual Remittances:** USD 1.4 billion

Types of Events	Types of Movement	Types of Response
Drought Water shortage Food insecurity Protracted conflicts	Internal displacement and refugees Voluntary returnees Relocation	Durable solutions through return or local integration Community stabilization and livelihood Preventing new displacement



In Sudan, migration, forced or otherwise, can place an enormous stress on natural resources such as water. Competition for this increasingly scarce and critical resource can be a source of potential conflict.  
© IOM 2006 - MSD0247  
(Photo: Sunil Srivastava)

# Conflict, Migration and the Environment: Working towards Peace, Stability and Sustainability

<b>Status</b>	Ongoing <sup>30</sup>
<b>Projects Period</b>	January 2009 to December 2009 <sup>31</sup>
<b>Total Beneficiaries</b>	700,000 individuals including internally displaced persons (IDPs); returning IDPs, urban IDPs, labour migrants, nomadic and semi-nomadic pastoralists, civil society
<b>Combined Budgets</b>	USD 8.5 million
<b>Donors</b>	Government of Japan, the Common Humanitarian Fund (CHF) and the United States Agency for International Development (USAID)

## Environmental Challenges and Other Intervening Factors

### *Degrading environment as a threat multiplier in a conflict situation*

Although not the main driver of the crisis that has been devastating Sudan for many years, conflict between pastoralists and sedentary groups over scarce land suitable for grazing livestock or growing crops has been among the contributing factors to this complex situation. **This type of conflict, while not new, has the potential to escalate, in light of the effects of long-term climate change. A decade-long decline in rainfall has badly degraded much previously fertile land, dramatically reducing many areas' ability to support human life and livelihoods.**

This has forced growing populations to subsist on shrinking parcels of productive land, leading to clashes that, in combination with other political, economic and environmental factors, have developed into the current major humanitarian crisis. Therefore, the human security of vast numbers of people remains under threat, and there is little sign that the situation will improve in the near future.

<sup>30</sup> See project details at the end of the country section.

<sup>31</sup> Because of the number of projects implemented in Sudan over the past decade, the country programmatic profile presented here focuses on activities related to migration and the environment implemented in the year 2009.

### *Desperation leading to degradation: Impact of population movements on the environment*

The conflict, in turn, has precipitated severe environmental problems. The ongoing crisis in Darfur, for example, has displaced close to 2 million people, in hundreds of IDP camps and gatherings. To meet their daily needs, resources such as water, wood fuel, non-timber forest products and foraged plants are being consumed through non-traditional, unbalanced means which are not sustainable. Much of the land in Darfur is of marginal quality, and water, forest and forage resources are typically scarce. Local communities' own needs often force them to utilize these scarce resources to their limits, notwithstanding long-established systems for maintaining their environments and distributing natural resources.

The sudden movement of large populations, whether they reside in camps or integrate into local communities, places an additional strain on environmental resources, often exacerbated by new arrivals being unfamiliar with their host communities' resource management practices. Often, the result is severely degraded land, as forest and plant cover is rapidly reduced and water resources are heavily exploited. This creates considerable potential for conflict between displaced persons and their host communities.

### **IOM Programmatic Responses**

IOM has been providing humanitarian assistance and protection to displaced persons in Sudan for many years. In light of its comprehensive approach to population movement, IOM strives to find durable solutions, including voluntary return. Through its human security approach, IOM is convinced of the need to integrate environmental security as an important factor. With these challenges in mind, IOM, in cooperation with partnering organizations including the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP) and local NGOs, has launched several initiatives to address issues of environmental degradation and human vulnerability and to complement its ongoing activities in support of displaced persons living in camps.

## *Using information and technology to address food security and build resilience in Darfur*

Data are always scarce and difficult to gather although they are indispensable to developing sound responses. IOM is working to improve the quality of environmental data, particularly in areas most affected by population movements and those areas that host IDP camps. With its partners, IOM is conducting detailed vulnerability mapping in Darfur, identifying areas of scarce resources and regions at risk of particular environmental degradation due to population movements. The mapping exercise is further taking into account other vulnerability indicators in line with IOM's human security approach. This information can allow IOM to:

- effectively monitor livelihoods endangered by environmental damage and intervene;
- support minimizing the risk of conflict between IDPs and host communities;
- make further recommendations for appropriate land use.

The project, *Developing an Updated and More Environmentally Sustainable Response to the Global Food Crisis and Other Livelihood Challenges in Darfur*, aims to assist IDPs and other vulnerable rural populations in addressing the multiple challenges of environmental degradation and climate variability, food insecurity, displacement and conflict, in line with IOM's human security approach. The project is aligned with the strategy of partner organizations in Darfur and the governmental and non-governmental humanitarian community. In particular, it is consistent with the environmental strategy developed by UNEP.

The project objectives are directed towards populations affected by conflict and climate variability in North Darfur and South Darfur, and aim to inform and support diversified and environmentally sound livelihoods among four target groups:

- IDPs;
- spontaneous IDP returnees or relocations;
- rural residents at risk of being displaced to overcrowded urban

- centres due to critical constraints in livelihoods and basic services;
- vulnerable nomadic and semi-nomadic pastoralists.

### *Concerns about safe return in South Sudan: Assessing human security needs to inform future responses*

Following the signing of the Comprehensive Peace Agreement between the Government of Sudan and the Sudan People's Liberation Movement in January 2005, hundreds of thousands of IDPs have demonstrated their confidence in peace by returning home to areas of Central and Southern Sudan which have been affected by decades of war, drought and famine. Within the framework of the project, *Livelihood Approaches to Food Aid Dependency and Environmental Degradation in Southern Sudan and the Transitional Areas*, IOM has been working closely with UN and government partners to provide support to an organized return process, while working to improve conditions in areas of return.

The *Population Baselines, Population Tracking and Village Assessment* project implemented in South Sudan was designed to address the information gap for both humanitarian planning and longer-term return/resettlement planning. Through this project, IOM draws on its existing expertise to support monitoring of the basic service needs of settled and mobile populations in hard-to-reach areas. As part of this initiative, IOM is undertaking an assessment of the human security needs of affected populations. The findings will be used to inform humanitarian and early recovery interventions in vulnerable rural areas to mitigate unnecessary displacement and, in the longer term, to prepare for larger-scale returns when conditions are conducive.

#### Key Findings

The monitoring of 4,905 villages shows that an overwhelming majority of the 1.9 million IDPs and refugees who have returned to Southern Kordofan and Southern Sudan since the signing of the Comprehensive Peace Agreement in January 2005 continue to face insurmountable challenges accessing basic services and facilities.

According to the IOM's fourth village assessment reports, a third of all communities in Southern Kordofan and Southern Sudan continue to use rivers and unprotected wells as their main source of water. In Unity State and in Northern Bahr El Ghazal, 77 per cent and 68 per cent of the villages, respectively, do not have access to safe drinking water because of broken hand pumps.

In this context, IOM is conducting in-depth analysis of village needs assessments, environmental vulnerability mapping and land use mapping. This integrated analysis has helped to identify the resources available locally for reconstruction and rehabilitation, and areas in which water points and other structures should be built in order to avoid the risk of local inter-group conflict. Furthermore, through these studies, IOM has provided suggestions on the crop seeds and tree varieties most suited to the ecological zone of the target areas. The organization has also advised on potential flashpoints over natural resource use between returnee, IDP, resident sedentary farmers, and nomadic and semi-nomadic pastoralist groups. Thereby, it is also enhancing protection monitoring of IDP returns and feeding into appropriate conflict mitigation responses.

Importantly, the study has fed into the development of *Community Environmental Action Plans*. The Action Plans aim to develop the capacity of local communities to address environmental issues and improve sustainability, balancing environmental considerations with the needs of communities. It also addresses environmental issues using techniques available to local communities.

## Lessons Learned and Sustainability

### *Making the humanitarian response sustainable*

As part of its direct aid delivery activities, IOM is committed to providing environmentally sustainable support and assistance. This implies reducing the direct environmental footprint of the camps and minimizing the pressure on surrounding natural resources. Currently in development, this IOM initiative is expected to distribute information about locally applicable technologies, such as improved cooking stoves and liquefied petroleum gas that drastically reduce the need to collect fuel wood or produce charcoal. Other contributions will include Stabilized Soil Blocks, an environmentally friendly substitute for mud bricks that can be manufactured locally, as well as other construction materials that relieve the need to harvest timber for shelters. **IOM believes that sustainable livelihood practices can be built into humanitarian response to ensure a limited ecological impact on hosting areas and communities.**

## Ensuring an efficient response through timely and accurate information

With the conflict in Darfur now entering its fifth year, the coping capacities of IDPs and rural communities are increasingly at risk, particularly given the continued human and environmental insecurity. With attacks on World Food Programme (WFP) food aid convoys leading to a cut in food aid rations, and limited possibilities of opening and extending IDP camps, there is an urgent need to meet the immediate food, water, income and basic service needs of the most vulnerable populations. Thus, accurate and timely information which is systematically updated and analysed will enable partners such as WFP and other aid organizations to more efficiently meet their needs.

### List of Projects

#### Livelihood Approaches to Food Aid Dependency and Environmental Degradation in Southern Sudan and the Transitional Areas

<b>Status</b>	Ongoing
<b>Project Period</b>	February 2009 to December 2009
<b>Beneficiaries</b>	Up to 100,000 individuals in some 50 villages
<b>Budget</b>	USD 4 million
<b>Donors</b>	Government of Japan

#### Developing an Updated and More Environmentally Sustainable Response to the Global Food Crisis and Other Livelihood Challenges in Darfur Project Proposal, January 2009

<b>Status</b>	Ongoing
<b>Project Period</b>	February 2009 to December, 2009
<b>Outcomes and Beneficiaries</b>	IDPs; returning/relocating IDPs; urban IDPs; labour migrants; nomadic and semi-nomadic pastoralists; civil society
<b>Budget</b>	USD 2.5 million
<b>Donors</b>	Government of Japan

#### Population Baselines, Population Tracking and Village Assessments in North and South Darfur PTP Project Profile for WP2009 (PHR sector)

<b>Status</b>	Ongoing
<b>Project Period</b>	January 2009 to December, 2009
<b>Outcomes and Beneficiaries</b>	Up to 600,000 IDPs in North Darfur and South Darfur; under-developed rural populations of up to 4 million people
<b>Budget</b>	USD 2 million
<b>Donor</b>	CHF and USAID

# ZIMBABWE

## BASIC FACTS

**Total Area:** 390,759 sq km

**Population:** 13,120,000

**Gross Domestic Product (GDP) per capita PPP:** N/A

**Net Migration Rate:** -0.8 migrants/1,000 population

**Annual Remittances:** N/A

Types of Events	Types of Movement	Types of Response
Heavy rains Seasonal flooding	Internal displacement Relocation	Disaster risk management/ Emergency response Disaster risk reduction/Disaster preparedness

In Chipinge, Zimbabwe, the construction of permanent shelters and efforts to “build back better” have contributed to prevent secondary displacement by stabilizing communities in the aftermath of a disaster. © IOM 2008





# Bridging Short- and Long-Term Needs of Flood Victims

<b>Status</b>	Completed <sup>32</sup>
<b>Projects Period</b>	January 2008 to December 2008
<b>Total Beneficiaries</b>	3,601 households
<b>Combined Budget</b>	USD 880,000
<b>Donors</b>	United Nations Central Emergency Response Fund (UN-CERF) and the Swedish International Development Cooperation Agency (SIDA)

## Environmental Challenges and Other Intervening Factors

Available data show that the six warmest years on record for Zimbabwe were recorded after 1987, and four of those years were recorded after 1998. During this period, Harare and Bulawayo experienced a warming in temperature of about 2 degrees Celsius, and precipitation patterns indicated a 30 per cent reduction in rainfall. Predictions suggest that agricultural productivity in the country could decrease by up to 30 per cent because of these climate extremes that have been linked to climate change.

Climate change in Zimbabwe has also been associated with unprecedented erratic weather patterns, with devastating effects on fragile ecological environments. Some of the notable weather events include cyclones that brought heavy rains and floods.

### *The devastation brought by too much rain*

Torrential rains across Southern Africa over the past few years resulted in severe flooding in high-risk geographical areas in Zimbabwe.<sup>33</sup> From mid-December 2007 through to January 2008, continuous rain impacted most parts of the country, especially the north-east and eastern districts. The Department of Meteorological Services reported that rainfall during this period was the heaviest experienced in the last

<sup>32</sup> See project details at the end of the country section.

<sup>33</sup> See the Southern Africa profile below for additional details on the regional impact of the 2007-2008 floods.

127 years. Households were displaced as floods destroyed houses, household assets, field crops and livestock. As people had lost all of their possessions and had nowhere to go, they were forced to build makeshift homes whilst waiting for the floods to subside. Further, poverty, instability, and hardships created an environment conducive to risk behaviours, HIV and sexually transmitted infections (STIs), as well as the deterioration of family ties.

There were also outbreaks of diseases such as cholera, diarrhoea, malaria, intestinal worms and scabies, due to poor water and sanitation conditions and exposure to disease vectors (e.g. mosquitoes, fleas, lice). This was made worse by the lack of access to health services.

## IOM Programmatic Responses

IOM played a leading role in providing emergency humanitarian assistance to the victims of the 2007-2008 floods, focusing on the Chipinge district in Manicaland province. Following the disaster, once immediate and basic needs were met, efforts focused on longer-term issues such as meeting the need for permanent shelter, attending to community health and environmental concerns, and helping to prepare the community for possible future disasters.

### *Attending to basic needs*

In the immediate aftermath of the disaster, IOM provided non-food items (NFIs) to flood victims. As many properties and personal effects were destroyed or lost in the flooding, the NFI packages included clothing, blankets, kitchen utensils, sanitary pads, hygiene and laundry soaps, a jerrycan, aqua tablets and a bucket. Notably, the NFI packs were adapted to the needs of the beneficiaries. For instance, NFI packs included mosquito nets in areas with high incidence of malaria. In addition, IOM provided emergency shelter (plastic sheeting, roofing sheets and camping tents) as initial shelter response in the acute phase of the disaster.

### *Providing shelters for displaced communities*

As soon the situation became more stable, and with the support of the local authorities and the district civil protection unit, IOM started

assisting communities with the provision of more permanent shelters, providing materials for the construction of houses made of cement, farm bricks, door and window frames, roofing timber and sheets, roofing nails, termite poison and air vents. As an initial support to durable solutions, the government also contributed by providing land and subsequent relocation of the affected people to higher ground.

**These efforts to *build back better* have contributed to prevent secondary displacement by stabilizing communities in the aftermath of the disaster.** Brick moulders and builders from the community were trained, while non-locally available construction materials were provided. Addressing land issues in coordination with implementing partners, local government authorities and the communities has been an essential part of the process of finding durable solutions for these displaced communities.

### *Promoting environmental and community health*

Vulnerable groups identified among these communities included children, single female heads of households, the elderly and people living with HIV and AIDS. Vulnerable households are often unable to access health care, including awareness programmes, condoms, information and care related to STIs, because they have limited or no means of transportation or financial resources to obtain health services at local facilities.

Given these considerations a key objective was to mainstream activities to prevent and mitigate sexual and gender-based violence (SGBV), HIV and AIDS to all its interventions. These activities included:

- the distribution of information materials;
- the promotion and distribution of condoms;
- targeted food aid for chronically ill, orphans and vulnerable children.

IOM further trained community-based peer educators on SGBV, HIV and AIDS.

The project further helped to ensure access to safe water and sanitation through *water, sanitation and hygiene (WASH)* assistance to

communities in need. During the emergency phase of displacement, the timely decontamination of damaged water and sanitation facilities was a key concern in efforts to limit the spread of water-borne related diseases. As a long-term recovery solution, IOM assisted in the reconstruction and construction of toilet facilities that are particularly resistant to future natural hazards. Efforts were further aimed at the rehabilitation, treatment and protection of wells and boreholes.<sup>34</sup> These activities were linked with training in sanitation for the communities.

### *Taking it one step further: Incorporating disaster risk reduction into immediate response efforts*

Further, IOM has been working with the Department of Civil Protection to create awareness among the vulnerable communities on how to deal with disastrous situations arising from floods. The people have been assisted in designing risk reduction and preparedness plans for their respective communities as a proactive measure. Furthermore, interventions have been implemented with regard to risk reduction. As one example, following IOM's lobbying and advocacy, semi-permanent structures were constructed on higher ground away from flood-prone areas to reduce the risk to flooding in the future.

## Lessons Learned and Sustainability

### *Working together to rebuild lives*

IOM's shelter intervention was implemented in close partnership with local and international NGOs, faith-based organizations and local authorities. All communities benefiting from shelter assistance followed a standard implementation procedure requiring the participation of local community leaders, city or municipal authorities and national authorities when applicable.

During the shelter construction process, the community and other stakeholders selected the candidates who would benefit from training

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<sup>34</sup> A borehole is a generalized term for any narrow shaft drilled in the ground, either vertically or horizontally.

to build shelters. Other beneficiaries assisted with unskilled labour such as excavation or mixing concrete under the supervision of skilled builders. This procedure has proved to be more cost effective. At the same time, it built the capacities of local residents in building adaptive and resistant shelters which were spontaneously replicated in other villages beyond the areas covered by the initial project.

#### Looking Ahead...

##### Study on Climate Change and Migration in Smallholder Farming Areas in Zimbabwe

Large-scale oscillations of weather events have become a common phenomenon in Southern Africa. In Zimbabwe, for example, the past 20 years have been characterized by a gradual increase in temperatures and a decline in total rainfall figures. The encroachment of desertification in the south-western parts of Zimbabwe has been linked to climatic variations.

As predictions suggest that agricultural productivity in the country could decrease by up to 30 per cent, the smallholder farming sector is particularly affected. The vulnerability of these households is further exacerbated by various socio-economic and demographic factors, as well as policies that limit their capacity to adapt to change. Poverty, small farm sizes, low technology, low capitalization, and other stressors tend to further reduce the resilience of smallholder farmers. Considering the limited economic opportunities in Zimbabwe, labour migration has become a livelihood strategy and coping mechanism.

The objective of the IOM study is to understand the effects of climate change on migration in smallholder farming areas in Zimbabwe. The study will collect and analyse empirical data from five sites selected from semi-arid areas in ten districts of the country. The project will further aim to develop strategies and policy responses for combating the negative effects of climate change based on sound modelling and research.

This study will contribute to better understanding of the impact of climate change. It will also provide information that will be important for the Government of Zimbabwe to formulate sound policies to promote climate change adaptation for the benefit of the poor, with a focus on reducing forced migration pressures and managing migration that is taking place with a view to maximizing its development benefits.

## List of Projects

### Emergency Assistance to Mobile and Vulnerable Populations in Zimbabwe

<b>Status</b>	Completed
<b>Project Period</b>	April 2008 to December 2008
<b>Beneficiaries</b>	1,620 households
<b>Budget</b>	USD 800,000
<b>Donor</b>	UN-CERF

### Southern Africa Region Preparedness and Response Plan for Flood 2008 (SARP)

<b>Status</b>	Completed
<b>Project Period</b>	August 2008 to December 2008
<b>Beneficiaries</b>	18,000 persons in Zambia, Mozambique and Zimbabwe
<b>Budget</b>	USD 501,672 (USD 80,000 was allocated to Zimbabwe)
<b>Donor</b>	SIDA

# Subregions

Eastern Africa  
Southern Africa



# EASTERN AFRICA

(Ethiopia, Kenya, Sudan, Tanzania and Uganda)

## BASIC FACTS

### *Ethiopia*

**Total Area:** 1.13 million sq km

**Population:** 78,986,000

**Gross Domestic Product (GDP) per capita PPP:** USD 756

**Net Migration Rate:** -0.4 migrants/1,000 population

**Annual Remittances:** USD 134 million

### *Kenya*

**Total Area:** 582,646 sq km

**Population:** 35,599,000

**GDP per capita PPP:** USD 1,240

**Net Migration Rate:** 1.3 migrants/1,000 population

**Annual Remittances:** USD 1.2 billion

### *Sudan*

**Total Area:** 2.5 million sq km

**Population:** 36,233,000

**GDP per capita PPP:** USD 1,949

**Net Migration Rate:** -3.0 migrants/1,000 population

**Annual Remittances:** USD 1.4 billion

### *Tanzania*

**Total Area:** 945,087 sq km

**Population:** 38,478,000

**GDP per Capita PPP:** USD 674

**Net Migration Rate:** -1.9 migrants/1,000 population

**Annual Remittances:** USD 16 million

**Uganda**

**Total Area:** 241,038 sq km

**Population:** 30.9 million

**GDP per capita PPP:** USD 1,454

**Net Migration Rate:** -0.1 migrants/1000 population

**Annual Remittances:** USD 900 million

Types of Events	Type of Movement	Types of Response
Drought Water shortage Food insecurity Small-scale conflict	Pastoralist cross-border movement	Disaster risk reduction Climate change adaptation Conflict prevention

Cattle rustling incidents are increasing in East Africa as pastoralists seek to restock herds badly affected by the searing drought across local communities in the East Africa. © IOM 2006 - MSD0142 (Photo: SvenTorfinn)



# Security in Mobility: Regional Partnership for Pastoralist Communities Facing Drought and Cross-Border Conflict

Status	Project Proposal
Project Period	2 years
Expected Beneficiaries	Pastoralist communities and sedentary communities living in border areas
Proposed Budget	USD 1.5 million

## Environmental Challenges and Other Intervening Factors

### *Drought and cross-border armed conflict: Pastoralists in search of depleting resources*

The human security of pastoralist communities living along the borders of Sudan, Kenya,<sup>1</sup> Ethiopia and Uganda is under threat due to increased cross-border armed conflict over resources. Along with the availability of small arms, depleted livestock, limited pasture and water – the cumulative effect of three years of drought – are driving aggressive pastoralist cross-border movement in search of pasture and water in ways that are triggering violent cross-border conflict. Cattle-rustling incidents have increased in the region in recent months, as owners seek to restock herds badly affected by the searing drought across local communities in East Africa.

While drought is not uncommon to this region, a steady decline in rainfall has become the norm over the past two decades, a phenomenon that is likely related to the effects of climate change.

The issue of cross-border conflict and pastoralists' access to key resources such as water and pasture in the region is a major security challenge in East Africa. The region has the largest grouping of pastoralists in the world, with Sudan having the highest percentage. In

<sup>1</sup> See also Kenya Programmatic Profile.

Kenya, semi-arid and arid land constitutes 80 per cent of the country's total land area, supporting 25 per cent of the Kenyan population and half of its livestock. **At the core of these cross-border conflicts are pastoralists' desperate need to sustain their livelihood in the face of recurring droughts that are eroding their traditional coping capacities.**

## IOM Programmatic Responses

### *Exploring creative solutions: Security in Mobility*

Along with its project partners, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), United Nations Environment Programme (UNEP) and the Institute for Security Studies (ISS), IOM proposes to develop a regional preparedness strategy that aims to reduce drought-induced cross-border conflict among pastoralists in East Africa. This projects aims to reconcile the livelihood needs of pastoralists with cross-border security requirements. Doing this necessitates providing pastoralists with a forum to voice their concerns, on the one hand, and supporting relevant government authorities in developing a regional normative framework on migration and mobility for pastoralists, on the other.

Activities include:

- Assessments and consultations in targeted communities, namely the Turkana/Karamoja cross-border area, the Mandera Triangle cross-border area and the Maasai Cluster within the Tanzania-Kenya Border area. The first two areas experience regular cross-border and internal conflict, whereas Maasai pastoralists have experienced restrictions on their free movement in recent years as a result of government initiatives, wildlife corridors, and private investments claiming rights over land and water resources.
- Furthermore, IOM, in cooperation with project partners, local authorities and community representatives, will develop advocacy and communication resources to support workshops and follow-up advocacy for conflict risk reduction.
- Finally, a media event and a major workshop will be hosted with government officials to present outcomes and strategies for disaster risk reduction and climate change adaptation in the concerned communities.

One of the key challenges will be to take into account diverse and at times divergent interests, including environmental concerns. For example, private farmers and ranchers, as well as wildlife conservation efforts, have imposed restrictions on pastoralist movements. The complex nature of the issue will call upon stakeholders to explore creative solutions to increase the resilience of vulnerable communities and, at the same time, preserve the ecosystem as a whole.

## First Steps Forward

This Security in Mobility initiative is still in the concept-note stage. However, preliminary assessment activities should commence shortly within the framework of an ongoing project on livelihoods funded by the Government of Japanese/Tokyo International Conference on African Development (TICAD).

To date, the project has been met with enthusiasm by relevant parties, as expressed during an initial workshop to test the initiative. More importantly, representatives of the pastoralist communities are actively engaged in the consultations in recognition of the mutual gain achievable through equitable and open dialogue.

In addition, the governments of the concerned areas are becoming more open to exploring solutions to address the root causes of pastoralist cross-border conflict. For instance, Kenya's Ministers for Northern Development stated that addressing inter-clan and cross-border conflict is the top priority for the office. The South Sudanese Government also changed its position, from armed response to pastoralists caught in cross-border cattle rustling to looking at a more sustainable approach: it has launched a project to address pastoralists' economic marginalization.

### Food security under threat

Food insecurity is a real threat to an estimated 23 million East Africans this year, a result of poor harvests due to lack of rain and ongoing small-intensity inter-communal conflict. Since 2005, livestock have been dying at a worrying and increasing pace throughout the region, raising the alarm on a daunting humanitarian crisis. According to a recent report by the Food and Agriculture Organization (FAO), the number of persons dependent on food assistance in the region, currently at 20 million, is likely to increase due to a drop in cereal prices.

Countries in the region are already suffering from food insecurity. Somalia is facing its worst humanitarian crisis in 18 years, as 1.4 million people have been affected by severe drought. In Ethiopia, the number has reached 1.3 million, with a possible increase to 6.2 million. The maize crop in Kenya, which accounts for 80 per cent of annual cereal production, is estimated at 28 per cent below usual levels, while the fourth successive poor harvest in Uganda is expected to have decreased crops by 50 per cent, potentially increasing the number of food-insecure persons in the country, which is already at more than 1 million.

The climatic effect of El Niño<sup>2</sup> will bring additional hardship, with heavy rains in October that generate floods and mudslides, ruining crops, killing livestock and damaging infrastructure. At the same time, more severe temperature and a rapid drought cycle are further weakening communities' resilience, as there is no time for their livelihoods to regenerate.

## Project Proposal

### Regional Partnership for Disaster Preparedness/Risk Reduction on Climate Change, Migration and Cross-Border Conflict in Pastoralist Communities in East Africa

Status	Project Proposal
Project Period	2 years
Expected Beneficiaries	Pastoralist communities and sedentary communities living in the border areas
Proposed Budget	USD 1.5 million

<sup>2</sup> El Niño is the appearance every few years of unusually warm surface waters of the Pacific Ocean along the tropical western coast of South America. It affects fishing, agriculture and local weather from Ecuador to Chile, and can cause global climatic anomalies in the equatorial Pacific, Asia, and North America.

# SOUTHERN AFRICA

(Mozambique, Zambia and Zimbabwe)

## BASIC FACTS

### *Mozambique*

**Total Area:** 812,379 sq km

**Population:** 21.8 million

**Gross Domestic Product (GDP) per capita PPP:** USD 1,242

**Net Migration Rate:** -0.2 migrants/1,000 population

**Annual Remittances:** USD 80 million

### *Zambia*

**Total Area:** 752,614 sq km

**Population:** 11,668,000 (est.)

**GDP per capita PPP:** USD 943

**Net Migration Rate:** -1.2 migrants/1,000 population

**Annual Remittances:** N/A

### *Zimbabwe*

**Total Area:** 390,759 sq km

**Population:** 13,120,000

**GDP per capita PPP:** N/A

**Net Migration Rate:** -0.8 migrants/1,000 population

**Annual Remittances:** N/A

Types of Events	Types of Movement	Types of Response
Heavy rains Seasonal flooding	Internal displacement Relocation	Disaster risk management/ Emergency response Disaster risk reduction/Disaster preparedness

# Taking a Regional Approach: The Southern Africa Region Preparedness and Response Plan for Flood 2008

<b>Status</b>	Completed
<b>Project Period</b>	August 2008 to December 2008
<b>Beneficiaries</b>	18,000 persons in Mozambique, Zambia and Zimbabwe
<b>Budget</b>	USD 501,672
<b>Donor</b>	Swedish International Development Cooperation Agency (SIDA)

Families transport thatching grass to build new shelters on higher ground after floods destroyed their homes in Chipinge, Zimbabwe.  
© IOM 2008 (Photo: Wonesai Sithole)





## Environmental Challenges and Other Intervening Factors

### *La Niña in Southern Africa 2007-2008: Wreaking havoc throughout the region*

Countries in southern Africa are particularly vulnerable to seasonal heavy rainfalls which usually result in flood, affecting and displacing thousands of people. From October 2007, countries in the region experienced early and unusually heavy rains due to the meteorological phenomenon called “La Niña.”<sup>3</sup>

Rains that pelted Zambia in the first half of November 2007 were atypical, not only in their intensity but also in their distribution. Usually predominant in the north-west, this time, they covered the drought-stricken low-lying areas of south-eastern Zambia, where they poured into the Magoye and Kafue rivers that empty into the Zambezi River.

Similarly, flash floods washed through Muzarabani in north-eastern Zimbabwe in mid-December 2007. As the heavy rain continued in January 2008, runoff from Zambia and Zimbabwe swelled and filled the Cahora Bassa dam reservoir in Mozambique. At one point in mid-January 2008, water backed up and spilled over the banks of the Musengezi River in Zimbabwe.

Four days after Christmas, the rain engorged the Save River, which flows through central Mozambique, and burst its banks, affecting villages and a refugee camp in the districts of Chipinge and Chiredzi. Downstream communities between Lake Kariba and Cahora Bassa dams were encouraged to evacuate, while in Mozambique, the national disaster authority planned for possible additional flooding.

As of February 2008, approximately 449,000 people had been affected and more than 111,000 hectares of farmland destroyed. About 60 per cent of the affected populations were in Mozambique, as the country receives most of the water resulting from rainfall in the region.

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<sup>3</sup> La Niña is the cooling of surface waters of the Pacific Ocean along the western coast of South America. Among the normal weather effects of La Niña are wetter monsoons and flooding on the Indian sub-continent; torrential rains and floods in Southeast Asia and northern and eastern Australia; cool and wet winters in south-eastern Africa; and warm and dry conditions along the coast of Peru and Ecuador. La Niña events often follow El Niño events, which occur at irregular intervals of about 5-10 years.

## IOM Programmatic Responses

Given the wide geographical span and the varied impact of flooding throughout the southern African region, IOM decided to back up its local emergency response with a regional approach that would increase synergies while allowing for flexible and adaptive responses based on local needs and resources. In each of the three countries, the response was adapted to fill gaps.

### *Mozambique: Complementing emergency response with disaster risk reduction and disaster preparedness measures*

In Mozambique, IOM assisted with the provision of permanent shelters for vulnerable households and basic sanitation. This was achieved through an initial assessment of the targeted communities to identify households that were in immediate need of emergency shelter materials or non-food items (NFIs). Beyond this essential and basic humanitarian assistance, IOM integrated disaster risk reduction (DRR) and disaster preparedness (DP) in its activities, including:<sup>4</sup>

- confirmation of plot demarcation and land registration with local leaders and government authorities to guarantee basic tenure rights to affected households;
- agreement with government officials on the type of shelter that conformed to national standards, assessment of local markets to establish a price per house (materials, labour and transportation);
- construction of 40 houses in Mutarara and 40 houses in Morrumbala, in an effort to build back better and educate local populations in the surrounding areas on how and where shelter should be built; and
- provision of water and sanitary facilities to reduce the risk of disease and equip households with basic sanitation facilities.

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<sup>4</sup> See Mozambique Programmatic Profile for additional information on projects implemented during this period to promote disaster risk reduction to floods.

### *Zambia: Preparing for future floods, from evacuation plans to coordination and pre-positioning of relief items*

In addition to its participation in assessment missions led by the Government Disaster Management and Mitigation Unit, IOM went on its own specific assessment missions, before and during the rainy season, in areas close to the Zambezi River that were at high risk of river flooding as well as in areas that experienced above-normal rainfalls. These missions surveyed the areas and established logistics and evacuation plans based on the population size. Deployment strategies of relief assistance were also developed.

As cluster lead on human settlement and shelter,<sup>5</sup> IOM also convened and chaired regular operational meetings with sector agencies in order to review and plan activities in human settlement and shelter for flood victims. Agencies participating included Action Aid, Habitat Zambia, the Zambia Red Cross/International Federation of the Red Cross and United Nations Human Settlements Programme (UN-HABITAT).

IOM additionally procured relief items useful for construction, as well as the most basic and immediate items for human settlement. These included 125 tents, 300 shovels, 300 slashes, 250 hoes, and 200 wheelbarrows, which were used both during the establishment of temporary habitats as well as during the recovery phase. Considering that the flooding was relatively moderate, 40 per cent of the relief items were distributed in the southern and western provinces to vulnerable families through relief agencies working on the ground. The remainder of the relief items was made available for donation to the Government Disaster Management and Mitigation Unit and other agencies.

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<sup>5</sup> The cluster approach was proposed by the **Inter-Agency Standing Committee (IASC)** in the 2005 Humanitarian Response Review as a way of addressing gaps and strengthening the effectiveness of humanitarian response through building partnerships and clarifying roles and responsibilities of organizations within the different sectors of humanitarian response. Global cluster leads have been designated in 11 areas of humanitarian activity. At the global level, IOM leads the Camp Coordination and Camp Management (CCCM) Cluster for Natural Disasters and actively participates in the Logistics, Early Recovery, Health, Emergency, Shelter and Protection Clusters.

## *Zimbabwe: Focusing on health and gender*

Within the framework of the *Southern Africa Region Preparedness and Response Plan for Flood*, IOM's efforts in the Chipinge district in Zimbabwe focused on health and gender.<sup>6</sup> More specifically, its efforts aimed to:

- increase access to health services, safe water and sanitation facilities;
- raise awareness of HIV and AIDS, and sexual and gender-based violence (SGBV);
- foster partnerships with local health and gender organizations.

Additionally, training workshops were held with government officials and among local communities on emergency preparedness and response.

The assistance provided varied among groups depending on their needs. IOM worked in coordination with a network of humanitarian partner agencies, which enabled wide coverage and easy bridging of gaps in the five assisted communities. Unfortunately, because of the government's political decision to suspend humanitarian operations already underway for over five months (from April to August 2008), the affected population's vulnerability increased until activities resumed on 4 September 2008, delaying the completion of life-saving activities.

## **Lessons Learned and Sustainability**

### *The need for assessment to ensure flexibility in humanitarian response*

As an example, while conducting assessments in resettlement centres in Mozambique, IOM became aware that emergency shelter materials (tarpaulins and NFIs, including blankets and cooking utensils) had already been distributed to affected households by various relief agencies. As short-term relief was considered addressed, IOM decided to concentrate its efforts on constructing durable transitional shelters.

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<sup>6</sup> See Zimbabwe Programmatic Profile for details on other projects carried out in the Chipinge district in response to the 2007-2008 floods.

### *The importance of community involvement*

Use of local labourers and materials for shelter construction helped to ensure the sustainability of the project. It also produced a multiplier effect by providing additional labour opportunities and, therefore, a source of income within beneficiary communities, contributing to revitalize the local economy. Furthermore, consultation with the communities on identifying the beneficiaries of the transitional shelter project was an important factor in promoting the equitable and transparent distribution of assistance.

### *Inter-agency/multi-stakeholder collaboration and coordination*

Coordination with other humanitarian actors, particularly local NGOs, is critical to ensuring rapid, appropriate and effective response and implementing community stabilization activities in the context of natural disasters. In Zimbabwe for instance, through IOM coordination, local-level clusters were activated in education, health, water, sanitation and hygiene, shelter, NFIs, food, logistics and agriculture.

### *Capacity building on disaster risk management: Bridging the gap between different national and community levels*

As part of this regional project, workshops were convened for government representatives and community members. Participants reviewed emergency preparedness and response at the district level, and provided recommendations on how it could be strengthened. It also focused on community-level capacities in DP, mitigation and management, while strengthening local linkages to national disaster response mechanisms.

## Project

The Southern Africa Region Preparedness and Response Plan for Flood 2008

<b>Status</b>	Completed
<b>Project Period</b>	August 2008 to December 2008
<b>Beneficiaries</b>	18,000 persons in Mozambique, Zambia and Zimbabwe
<b>Budget</b>	USD 501,672
<b>Donor</b>	SIDA



AMERICAS

Bolivia

Haiti

Mexico

Peru

Trinidad and Tobago



# BOLIVIA

## BASIC FACTS

**Total Area:** 1,098,580 sq km

**Population:** 9,182,000 (est.)

**Gross Domestic Product (GDP) per capita PPP:** USD 4,500

**Net Migration Rate:** -1.05 migrant(s)/1,000 population

**Annual Remittances:** USD 758 million

Types of Events	Types of Movement	Types of Response
La Niña Heavy rains Hailstorms Flooding Mudslides and landslides Drought	Internal displacement	Disaster risk management/ Emergency response Cluster Disaster risk reduction/ Disaster preparedness Capacity building

Children playing in front of their new house in Bolivia. Very high precipitations affected the country over the past few years, displacing thousands of people and posing a severe risk to the most vulnerable among them, particularly women and children. © IOM 2008



# Taking Humanitarian Aid One Step Further

<b>Status</b>	Completed and Project Proposal <sup>1</sup>
<b>Project Period</b>	November 2007 to July 2008
<b>Beneficiaries</b>	6,224 families
<b>Budget</b>	USD 250,000
<b>Donors</b>	United Nations Central Emergency Fund (UN-CERF) and the Netherlands Minister for Development Cooperation

## Environmental Challenges and Other Intervening Factors

### *Natural disasters in Bolivia: A never-ending battle*

From November 2007 to April 2008, the phenomenon of La Niña<sup>2</sup> hit different regions of Bolivia, resulting in heavy precipitation, hailstorms, flooding, drought, mudslides and landslides. The dramatic consequences for the population added to the still lingering effects of El Niño,<sup>3</sup> which was felt in the country from 2006 until 2007. The impact of both weather phenomena was believed to be aggravated by human factors, such as mismanagement of natural resources, a high rate of internal migration leading to structural changes in human settlements, as well as weaknesses in integrating disaster risk reduction (DRR) and urban planning approaches for newly settled communities.

The Bolivian regions of the Eastern Cordillera, the lowlands of the South Plains and the East Amazon Basin, were affected by very high precipitation over the past few years. The departments of Beni and Pando, in the Bolivian East Amazon Basin, were the most severely hit. As a consequence, more than 100,000 families were affected, some of them for the third consecutive year. Entire families lost their homes

<sup>1</sup> See project details at the end of the country section.

<sup>2</sup> La Niña is the cyclic counterpart to El Niño, characterized by a cooling of surface waters of the Pacific Ocean along the western coast of South America. La Niña often follows El Niño, which occur at irregular intervals of about 5 to 10 years.

<sup>3</sup> El Niño is the appearance, every few years, of unusually warm surface waters of the Pacific Ocean along the tropical western coast of South America. It affects fishing, agriculture, and local weather from Ecuador to Chile and can cause global climatic anomalies in the equatorial Pacific, Asia, and North America.

and sources of income. Summer-season food and cash crops were ruined, along with livestock loss due to illness and death. Thousands of people were displaced and forced to migrate to other regions, posing a severe risk to the most vulnerable, women and children among them. The increased vulnerability and extreme poverty caused by the cycle of displacement and destruction is leading to economic, psychological and social damage.

In addition to floods, Bolivia declared an emergency in October 2008 due to widespread drought. According to Bolivia's National Service of Meteorology and Hydrology, 70 per cent of the highlands and valleys, as well as the Chaco region of the country, were affected. Over 10,000 people suffered from lack of water.

## Programmatic Responses

### *Helping to put a roof over their heads and provide for basic needs*

In response to La Niña in the five months between November 2007 and April 2008, humanitarian organizations and the government promptly deployed shelter support and humanitarian aid for the internally displaced. The *Support to Affected Populations in Shelters and Temporary Housing Facilities* project aimed to strengthen the coordinated humanitarian response by the government and Emergency Shelter Cluster members<sup>4</sup> in order to provide non-food items (NFIs) and shelter assistance to the displaced population. In total, IOM helped to assist 6,224 families residing in temporary camps through the provision of humanitarian aid. Of the 6,224 families, 200 families were provided with housing in the recovery and reconstruction period.

Notably, gender mainstreaming was prioritized. **As the camps were newly established, the camp administrators had strict rules and**

<sup>4</sup> The cluster approach was proposed by the Inter-Agency Standing Committee (IASC) in the 2005 Humanitarian Response Review as a way of addressing gaps and strengthening the effectiveness of humanitarian response through building partnerships and clarifying roles and responsibilities of organizations within the different sectors of humanitarian response. Global cluster leads have been designated in 11 areas of humanitarian activity. At the global level, IOM leads the Camp Co-ordination and Camp Management (CCCM) Cluster for Natural Disasters and actively participates in the Logistics, Early Recovery, Health, Emergency, Shelter and Protection Clusters.

**monitoring for the protection of the affected women and children, in order to reduce the risk of violence and crimes.** Furthermore, IOM was vigilant in making sure that NFI kits distributed contained all the necessary hygiene items for women as well as for men.

Furthermore, IOM was involved in the definition of exit strategies for all departments<sup>5</sup> with displaced populations. In Beni (Trinidad), the construction of 200 houses allowed the relocation of part of the most vulnerable population. The exact identification of the needs of the municipality was undertaken by IOM, the municipal government and World Vision. In La Paz, partnership with the EOC allowed for the identification of families in urgent need of relocation. Joint IOM and EOC efforts also allowed for the identification of available land for construction. By the end of this project, the municipality of La Paz had already allocated a construction area.

### *Reducing the risk to disaster by strengthening the framework for response*

While immediate response was regarded as critical, DRR was also prioritized. In its efforts to ensure timely and effective responses to future emergencies, rapid disaster response hubs were established to implement response plans in the most affected districts. Training was then conducted to strengthen local capacity for disaster response. To compliment and provide structure for these DRR efforts, a Manual for Camp Coordination and Camp Management (CCCM) in Bolivia was produced, based on guidelines set out by the CCCM cluster within the UN cluster system. Furthermore, the Protocol of Camp Management and Shelter and NFI Standardization was drafted, setting out minimal and standardized services to be provided in camps for displaced persons. An online database was also developed to streamline information collected in each shelter and prompt identification of gaps in assistance. The work was done in coordination with the Bolivian Civil Defense, the regional and departmental EOC and other partnering organizations.

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<sup>5</sup> Bolivia is divided into nine departments (*departamentos*). Each of the departments is subdivided into provinces (*provincias*), which are further subdivided into municipalities (*municipios*).

## Lessons Learned and Sustainability

At the end of the project, a meeting took place with the involved organizations to evaluate the problems encountered and propose ways to improve the emergency response. Recommendations include the following:

- Create a central coordinating centre to enable better management of the available resources, staff and logistics.
- Strengthen information management, as response time is linked to the time it takes to process information. It is therefore crucial for central authorities and operating agencies to process information as quickly as possible.
- Develop a central database combining information on all participating NGOs, UN agencies and governmental organizations and including operational sectors, operational capacities, specialties, and logistic capabilities in order to foster coordination between all stakeholders. Such a tool can help to prevent miscommunication and overlaps.
- Build the capacity of governmental institutions to mitigate staff turnover and related lack of technical expertise. This is one element of improving coordination with the government.
- Strengthen transport capabilities, especially since an acute problem with transportation has been identified. As it is difficult to access affected areas by land, air transport is needed. However, only the Transporte Aereo Militar (TAM) had the available capacities to airlift humanitarian assistance. The World Food Programme (WFP) is taking the lead in advising the government on how to improve access.
- Increase geographical coverage to provide assistance not only to the most accessible and visible populations.

## The Way Forward

### *Supporting the most vulnerable*

Some segments of the population are considerably vulnerable as a result of extreme poverty and because of the fact that they are living

in disaster-prone areas close to rivers and hillsides. These groups are mostly internal migrants who have settled in slum areas in the urban periphery. Examples of these migrants are the 1,500 people displaced yearly in Trinidad who have settled in flood-prone areas on the outskirts of the city, or the 250 migrants settled in hillsides in La Paz, who were affected by landslides resulting from heavy rainfall.

The objective of the *Shelter Reconstruction and Durable Solutions in Flood-Affected Areas in Bolivia* project would be to provide dignified housing conditions to the internal migrants and the displaced. The project will support the development of urban planning guidelines and the allocation of resources for disaster preparedness, urban development and DRR. Furthermore, livelihood training and skills upgrading will be conducted to allow families to secure income and access better jobs. The overall objective will be to decrease the high levels of vulnerability of the population that is directly or indirectly affected yearly by massive destruction and displacement. One strategy would be to construct elevated houses to protect people's livelihoods and reduce the number of displaced people during floods. The project aims to reach out to 550 households regularly affected by floods and identified as highly vulnerable. Providing housing brings stability to highly vulnerable families so they can allocate more time and effort to their livelihoods.

### *Building government capacity*

One of the issues identified was that EOCs, the backbone of Bolivia's emergency response, are only activated during emergencies and that their maintenance depends on financial resources that are often unavailable. As a result, the municipal EOCs of La Paz and Santa Cruz de la Sierra are the only permanent and operative EOCs in Bolivia. In most of the other departments and municipalities, EOCs have not been created; in cases where these EOCs do exist, they lack human resources, technical capacity and equipment.

The objective of the *Strengthening Emergency Operational Centres (EOCs) Capacity and Operability* project is to build the capacity of the government to respond to natural disasters through the creation of an EOC coordination structure. Furthermore, technical training will

be conducted on disaster response among concerned governmental officials. IOM will also assist with adequately equipping the centres to ensure their effective functioning. The objective of equipping EOCs is to provide some sustainability related to the lifespan of the material (an estimated 5 years without maintenance and 10 years with minimum maintenance).

Nevertheless, IOM believes that long-term sustainability is only achievable through the institutionalization of EOCs, and the strengthening of the coordination network. To help foster sustainability, IOM will advocate among concerned parties for the inclusion of EOCs in the Annual Operative Plan of each municipality. Efforts will also be made to involve citizens and raise public awareness on the need to prevent disasters and how to respond to them.

## List of Projects

### Support to Affected Population in Shelters and Temporary Housing Facilities

<b>Status</b>	Completed
<b>Project Period</b>	November 2007 to July 2008
<b>Beneficiaries</b>	6,224 households (with 200 of these families provided with housing)
<b>Budget</b>	USD 250,000
<b>Donors</b>	UN-CERF and the Netherlands Minister for Development Cooperation

### Shelter Reconstruction and Durable solutions in Flood-Affected Areas in Bolivia

<b>Status</b>	Project Proposal
<b>Project Period</b>	N/A (12 months)
<b>Beneficiaries</b>	550 households
<b>Proposed Budget</b>	USD 3,160,000

### Strengthening Emergency Operational Centres (EOCs) Capacity and Operability in Bolivia

<b>Status</b>	Project Proposal
<b>Project Period</b>	N/A (6 months)
<b>Beneficiaries and Outcomes</b>	36 municipal EOCs consolidated and equipped; 72 persons trained
<b>Proposed Budget</b>	USD 1,600,000

# HAITI

## BASIC FACTS

**Total Area:** 27,750 sq km

**Population:** 9,296,000

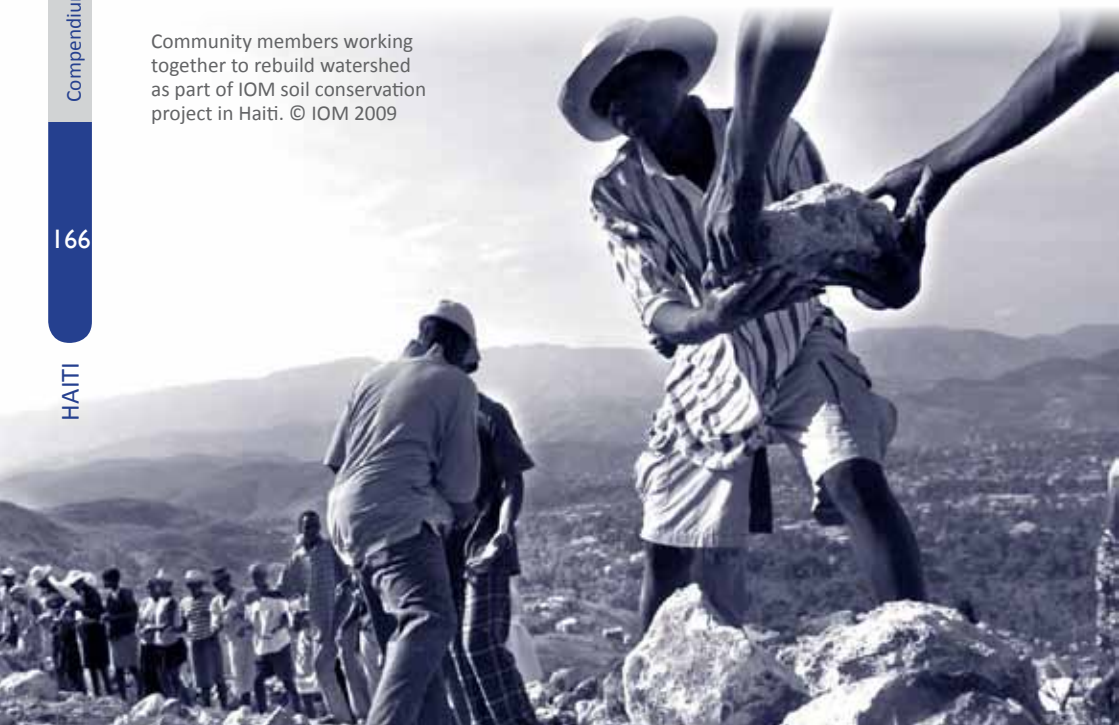
**Gross Domestic Product (GDP) per capita PPP:** USD 1,892

**Net Migration Rate:** -2.6 migrants/1,000 population

**Annual Remittances:** USD 876 million (2004)

Types of Events	Types of Movement	Types of Response
Hurricanes Deforestation Unmanaged urbanization Political unrest	Internal displacement Rural-to-urban migration	Disaster risk management/ Emergency response Cluster Disaster risk reduction/Disaster preparedness Community stabilization and livelihood

Community members working together to rebuild watershed as part of IOM soil conservation project in Haiti. © IOM 2009





# When Hurricanes Hit Harder, Emergency Response is not Enough

<b>Status</b>	Ongoing <sup>6</sup>
<b>Project Period</b>	2008 to 2010
<b>Beneficiaries</b>	1.1 million persons
<b>Combined Budgets</b>	USD 11.3 million
<b>Donors</b>	Governments of Japan, Norway, the United Kingdom and the United States; European Commission; United Nations Development Programme (UNDP); United Nations Central Emergency Response Fund (UN-CERF), United Nations Office for the Coordination of Humanitarian Affairs (OCHA) Rapid Response and Recovery Fund; United Nations Children's Fund (UNICEF); UN Stabilization Mission in Haiti (MINUSTAH)

## Environmental Challenges and Other Intervening Factors

*Exposed without protection: The devastation brought by hurricanes in light of mass deforestation*

Haiti has suffered extensive deforestation and environmental degradation over the past decades. The country's population is therefore particularly vulnerable to adverse climate conditions brought about by the annual hurricane season. Cutting down forests exposes rich topsoil to erosion, significantly hindering agriculture and making the terrain more susceptible to what can become deadly mudslides. Climate change, which already appears to make storms in the Caribbean more intense, is expected to heighten these risks.

Extreme poverty is an exacerbating factor, further compromising the human security and resilience of the population. According to the human development index, Haiti is the poorest country in the Western hemisphere, ranking 153<sup>rd</sup> out of 177 countries worldwide. The resulting inadequate infrastructure, particularly with regard to water channels, has caused many parts of Haiti to suffer disproportionate damage during hurricane season. According to a Christian Aid report,<sup>7</sup>

<sup>6</sup> See project details at the end of the country section.

<sup>7</sup> Christian Aid (2006) *The Climate of Poverty: Facts, Fears and Hope*, May 2006, available at <http://www.christianaid.org.uk/Images/climate-of-poverty.pdf>

when tropical storm Jeanne hit Haiti in September 2004, nearly 3,000 people lost their lives, even though the winds were not fierce enough to be deemed hurricane force. As a matter of fact, when the same storm hit Jamaica, it caused very few casualties.

In 2008, a series of tropical storms caused heavy damage and directly affected 800,000 individuals. The city of Gonaives and the surrounding Artibonite region suffered the heaviest toll. Out of 350,000 inhabitants, 100,000 were displaced, including 60,000 in temporary shelters. This massive displacement was the result of persistent flood waters and an estimated 2 million cubic metres of mud that subsequently encased the city, restricting access to roads and houses, and generating economic losses, as well as health hazards for the city's population.

## IOM Programmatic Responses

### *Providing basic emergency items, shelter support and debris removal assistance in the immediate aftermath of the hurricane*

As the emergency shelter cluster lead agency in Haiti,<sup>8</sup> IOM undertook to provide the displaced with non-food items (NFIs) as well as shelter packages immediately following the disaster. Furthermore, environmental recovery activities were launched in the Artibonite region, with a particular focus on the city of Gonaives. Such activities entailed removal of debris and mud obstructing all major access ways as well as private dwellings.<sup>9</sup> Large parts of the population remained displaced for several months. Interventions were therefore designed to enable the gradual and sustainable return of those groups, as well as resumption of normal economic activity.

Efforts are now underway to rehabilitate public infrastructure used as temporary shelter throughout areas considered most vulnerable to

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<sup>8</sup> The cluster approach was proposed by the **Inter-Agency Standing Committee (IASC)** in the 2005 Humanitarian Response Review as a way of addressing gaps and strengthening the effectiveness of humanitarian response through building partnerships and clarifying roles and responsibilities of organizations within the different sectors of humanitarian response. Global cluster leads have been designated in 11 areas of humanitarian activity. At the global level, IOM leads the Camp Co-ordination and Camp Management (CCCM) Cluster for Natural Disasters and actively participates in the Logistics, Early Recovery, Health, Emergency, Shelter and Protection Clusters.

<sup>9</sup> The initial phase came to a conclusion in the first quarter of 2009.

floods and other natural disasters. Following an extensive assessment and the elaboration of contingency planning, preparedness will be further improved through the construction of dedicated shelter structures and the constitution of stocks of NFIs.

*Cleaning and rehabilitating the environment: Soil conservation, irrigation and drainage improvement*

Nearly one year after the onset of the devastating series of storms in 2008, IOM and its partners continue to lend their resources to ongoing recovery activities. Renewed emphasis has been placed on the need to address the root causes of such recurring population displacement induced by natural disasters, through sustainable improvements to the country's environment, particularly in the densely populated areas that tend to be most vulnerable to displacement. These follow-up initiatives have focused on addressing the core vulnerabilities of the region's environment and physical infrastructure. Significant investments, as part of the recovery programme, have been allocated to infrastructure improvements and soil conservation, in close partnership with local and national authorities.

Many parts of Haiti have poor canal infrastructure, congested waterways and experience large-scale deforestation. As a result, these areas are physically vulnerable to rain water and suffer disproportionate damage during hurricane season. IOM, through its Community Stabilization framework programme, is supporting government-initiated efforts towards improved watershed management and the rehabilitation of irrigation and sewage canals, promoting local employment. The target area is the Plaine de Cul du Sac area of Croix des Bouquets, once considered the bread basket of Port au Prince until political turmoil and a series of devastating hurricanes left the irrigation system in disrepair. Project activities mainly include canal cleaning, rehabilitation and construction.

Together, these interventions have resulted in a reduction in long-term displacement levels in affected areas, as well as measured improvements to the chronic physical vulnerability of some major urban centres to the effects of natural disasters, in particular those caused by sudden flood waters.

### Clearing canals to bring water to the land

Canal cleaning necessitated the removal of dirt, rocks and silt that had settled into the canals after years of neglect. Rehabilitation work involved repairing broken concrete canal structures or building new concrete walls and floors in places where the existing canals are simple earthen canals.

Soil conservation work on the hillside is critical for protecting these canals in the plains below. The work includes building rock walls and gully plugs as well as planting vetiver grass to hold the soil and further protect the walls. In 15 months, 4,000 hectares of fertile land returned to food production.

## Lessons Learned and Sustainability

### *Small initiatives making a big impact*

Better management and reinforcement of the many watersheds that surround Haiti's main population centres has been a major focus of longer-term interventions. Initiatives carried out on a relatively small scale have had significant impact on the communities directly situated within and below watersheds by reducing specific areas' vulnerability to sudden floods. Given this success, expansion of efforts to larger areas is desirable, but will require considerable investments.

### *Promoting sustainability*

**Infrastructure improvement and environmental conservation projects represent the only strategy, short of large-scale population relocation, that presents prospects of sustainability in efforts to curb environmental degradation and its devastating effects on urban and coastal population centres.**

### *Creating jobs and investment opportunities*

The activities implemented by IOM in its soil conservation and irrigation and drainage improvement efforts required the assistance of a large number of labourers, thereby creating short-term employment opportunity for a significant proportion of the affected communities. In 15 months, 10,000 short-term jobs were created. These jobs represent critical injections of cash into families marginalized by poverty,

unemployment and increasingly challenging cost of living. Income for farmers working on these projects was used to supplement farm income, as well as to make further investments in on-farm activities.

## List of Projects

### I. Recovery Programme

#### Gonaives Recovery Programme

<b>Status</b>	Ongoing
<b>Project Period</b>	2008 to 2009
<b>Beneficiaries</b>	35,000 persons
<b>Budget</b>	USD 816,450
<b>Donor</b>	Government of the United Kingdom (in partnership with UNDP)

#### Gonaives Recovery Programme II

<b>Status</b>	Ongoing
<b>Project Period</b>	2008 to 2009
<b>Beneficiaries</b>	250,000 persons
<b>Budget</b>	USD 1,001,431
<b>Donor</b>	European Commission

#### Gonaives Recovery Programme III

<b>Status</b>	Ongoing
<b>Project Period</b>	2008 to 2009
<b>Beneficiaries</b>	300,000 persons
<b>Budget</b>	USD 725,781
<b>Donor</b>	Government of Norway (in partnership with UNDP)

#### Gonaives Recovery Programme IV

<b>Status</b>	Ongoing
<b>Project Period</b>	2009
<b>Beneficiaries</b>	50,000 persons
<b>Budget</b>	USD 24,341
<b>Donor</b>	UNDP (through UN-CERF)

**Mud Removal in Raboteau and Descahos – Gonaives**

<b>Status</b>	Ongoing
<b>Project Period</b>	2008 to 2009
<b>Beneficiaries</b>	125,000 persons
<b>Budget</b>	USD 123,375
<b>Donor</b>	UNDP

**Support for Improvement and Construction of Shelters and Pre-Positioning of Supplies in Haiti**

<b>Status</b>	Ongoing
<b>Project Period</b>	2009 to 2010
<b>Beneficiaries</b>	50,000 persons
<b>Budget</b>	USD 1 million
<b>Donor</b>	Government of the United States

*II. Soil Conservation, Irrigation and Drainage Improvement*

**Haiti Transition Initiative: Soil Conservation Sub-Component**

<b>Status</b>	Ongoing
<b>Project Period</b>	2008 to 2009
<b>Beneficiaries</b>	7,000 persons
<b>Budget</b>	USD 620,338
<b>Donor</b>	Government of the United States

**Cabaret Soil Conservation through Ravine Protection**

<b>Status</b>	Ongoing
<b>Project Period</b>	2008 to 2009
<b>Beneficiaries</b>	10,000 persons
<b>Budget</b>	USD 127,287
<b>Donor</b>	OCHA Rapid Response and Recovery Fund

**Support to Child-Friendly Environment through Community Participation**

<b>Status</b>	Ongoing
<b>Project Period</b>	2008 to 2009
<b>Beneficiaries</b>	135,000 persons
<b>Budget</b>	USD 2,973,891
<b>Donor</b>	Government of Japan (in partnership with UNICEF)

**Support to Child-Friendly Environment through Community Participation – Phase II**

<b>Status</b>	Ongoing
<b>Project Period</b>	2009
<b>Beneficiaries</b>	33,620 persons
<b>Budget</b>	USD 740,595
<b>Donor</b>	Government of Japan (in partnership with UNICEF)

Rehabilitation of Infrastructure and Improving Urban Environment – Community Violence Reduction

Status	Ongoing
Project Period	2008 to 2009
Beneficiaries	50,000 persons
Budget	USD 1,609,685
Donor	MINUSTAH

Rehabilitation of Infrastructure and Improving Urban Environment – Community Violence Reduction

Status	Ongoing
Project Period	2009 to 2010
Beneficiaries	90,800 persons
Budget	USD 1,515,215
Donor	MINUSTAH

# MEXICO

## BASIC FACTS

**Total Area:** 1,972,550 sq km

**Population:** 111,211,789 (July 2009 est.)

**Gross Domestic Product (GDP) per capita PPP:** USD 1.088 trillion (2008 est.)

**Net Migration Rate:** -3.61 migrant(s)/1,000 population (2009 est.)

**Annual Remittances:** USD 25 billion

Types of Events	Types of Movement	Types of Response
Hurricanes El Niño and La Niña Drought Soil degradation	Internal displacement Labour migration	Disaster risk management Emergency response Disaster risk reduction Climate change adaptation

Following the passage of tropical storm Noel at the end of 2007, more than one million people were affected by the flooding in Tabasco and Chiapas in the southern region of Mexico. © IOM 2007



# Responding to Emergency Needs of Remote Communities while Assessing Climate Change Impact on Migration

Status	Completed
Period of Projects	November 2006 to February 2007
Total Beneficiaries	4,200 families
Combined Budget	USD 683,600
Donors	United Nations Central Emergency Response Fund (UN-CERF)

## Environmental Challenges and Other Intervening Factors

Mexico is highly vulnerable to climate change and environmental events mainly because of its geographic location, topography and socio-economic status. The El Niño and La Niña phenomena,<sup>10</sup> as well as extreme weather events, have resulted in disasters and heavy damage to different socio-economic sectors of the country.

### *In the eye of the storm*

Hurricanes have had the greatest effect on the population, the infrastructure and coastal ecosystems, causing both human and economic loss as well as displaced populations every year, mainly between May and November. The hurricanes that have entered south of the Gulf of Mexico have been more severe during the last 20 years. In the last five months of 2005, 23 hurricanes and tropical storms were registered, something that had never occurred in such a short period of time in the Gulf. From September to October of 2005, the southern region of Mexico was hit by hurricanes Emily, Stan and Wilma, damaging 120,000 homes and causing 93 deaths.

<sup>10</sup> El Niño is the appearance every few years of unusually warm surface waters of the Pacific Ocean along the tropical western coast of South America. It is associated with floods, droughts and other weather disturbances causing global climatic anomalies in the equatorial Pacific, Asia, and North America. La Niña is the cyclic counterpart of El Niño, characterized by a cooling of surface waters of the Pacific Ocean along the western coast of South America. While its local effects on weather and climate are generally the opposite of those associated with El Niño, its global effects can be more complex. La Niña often follows El Niño, which occur at irregular intervals of about five to ten years.

### *Waiting for the rain*

Another environmental event that has been progressively impacting Mexico is severe drought and soil degradation, which especially affects rural populations and the agriculture and livestock sectors. This, along with the tradition of migrating that exists in many rural communities, has resulted in the emigration of a large number of men of working age towards cities, other states in Mexico or the US. Women, children and the elderly are left in charge of the land, which is largely unproductive. The family income then becomes dependent on remittances, other sources of income generated at home (often through small business initiatives) and government support. Some of the fundamental needs of these agricultural communities include access to tools to diversify crops and new technologies.

### *Predictions for the future: Climate change making an impact*

According to different climate scenarios, both hurricanes or tropical storms and droughts are expected to intensify and increase in numbers in the following decades. These events will have an increasing impact on migration patterns and can potentially result in massive movements of people.

### *Passing through or staying? Mexico an important transit and destination country for the region*

Along with being an important country that sends its nationals abroad, particularly to the US, Mexico is a key transit and destination country in the region. Environmental changes, either slow or sudden in nature, have spurred an increase in migrants transiting through and remaining in Mexico. In 1998, for example, Hurricane Mitch resulted in an increase in Central American migrants, especially Guatemalans and Hondurans, transiting through Mexico towards the US. This disaster also marked the beginning of a new wave of migrants, which included children travelling with their families, as well as unaccompanied children migrants.

## IOM Programmatic Responses

### *Responding to Noel 2007: Working with partners to assist affected communities in Tabasco and Chiapas*

Following the passage of tropical storm Noel at the end of 2007, more than a million people were affected by flooding in Tabasco and Chiapas in the southern region of Mexico. With support from UN-CERF, IOM Mexico established an assistance programme for affected communities in order to provide reconstruction materials and non-food items (NFIs). The programme assisted 2,500 families in Tabasco and 1,700 families in Chiapas. It also facilitated the establishment of coordination mechanisms between local non-governmental organizations (NGOs) and different state institutions in order to provide comprehensive support to damaged communities and affected families.

## Lessons Learned and Sustainability

### *Supporting local efforts to assist marginalized communities*

**Federal and state institutions in Mexico are well-prepared for emergency responses following extreme weather events. However, support has commonly focused on large urban areas or heavily populated communities. In the case of tropical storm Noel, many isolated communities did not receive the necessary assistance.** Emergency responses in these isolated communities are usually coordinated by local NGOs, which have local knowledge but lack the necessary preparation to implement disaster risk reduction (DRR) programmes in some cases. Thus, IOM decided to focus its efforts on supporting local NGO efforts to assist these rural and marginalized populations.

### *Migration management as a tool for DRR and climate change adaptation*

Appropriate migration management is essential for assisting communities in coping with sudden events, such as tropical storms and slow-onset environmental changes like soil degradation. Incorporating

migration strategies into DRR programming in light of emergencies provides the opportunity for communities to be prepared for temporary or permanent relocation. In the case of slower degradation of land, the management of movement can help to minimize the negative effects of migration and strengthen local capacities to adapt to climate change. This can be achieved through such measures as the promotion of regular migration channels, enhanced communication with diasporas and better use of remittances for the development of local communities.

### *Looking ahead: The need for policy reform*

Finally, the increase in numbers and intensity of natural disasters in Central America and the related increase in “environmental migrants” transiting or remaining in Mexico would require revisiting public policies to face future challenges.

## List of Projects

### Provision of Shelter and Non-Food Items in Tabasco, Mexico

<b>Status</b>	Completed
<b>Project Period</b>	November 2006 to 25 February 2007
<b>Beneficiaries</b>	2,500 families
<b>Budget</b>	USD 401,700
<b>Donor</b>	UN-CERF

### Provision of Shelter and Non-Food Items in Chiapas, Mexico

<b>Status</b>	Completed
<b>Project Period</b>	November 2006 to 25 February 2007
<b>Beneficiaries</b>	1,700 families
<b>Budget</b>	USD 281,900
<b>Donor</b>	UN-CERF

# PERU

## BASIC FACTS

**Total Area:** 1.28 million sq km

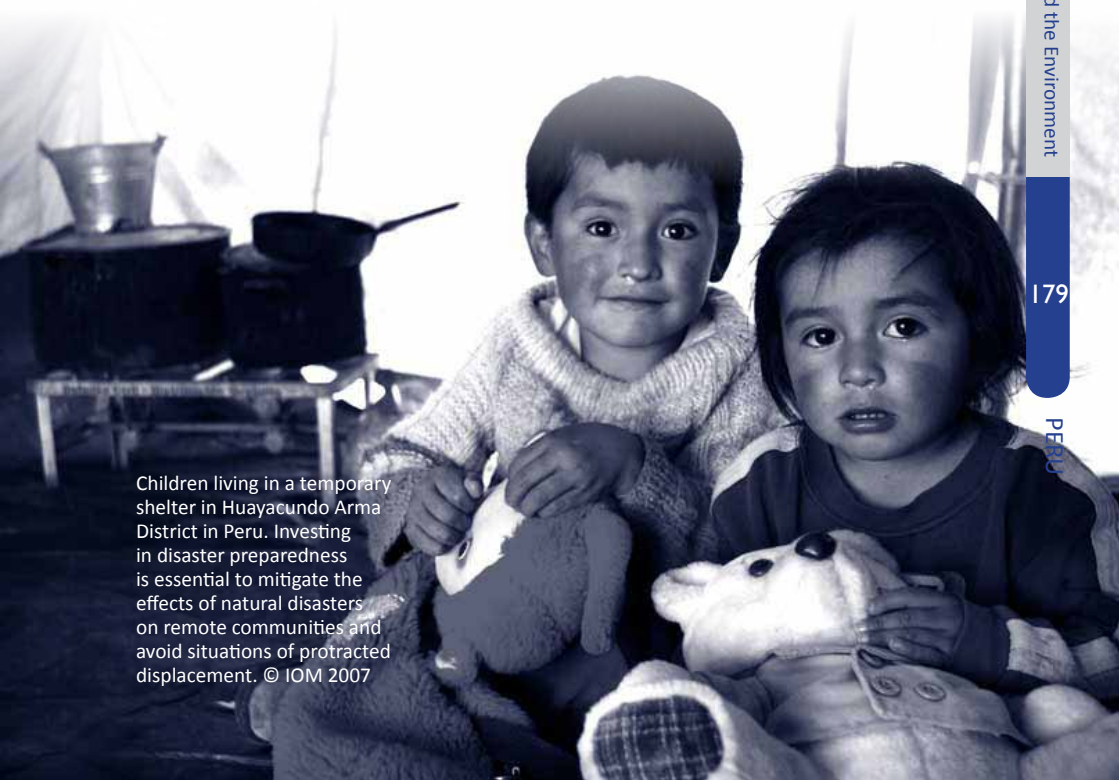
**Population:** 28 million

**Gross Domestic Product (GDP) per capita PPP:** USD 6,000

**Net Migration Rate:** -0.95 migrants/1,000 population

**Annual Remittances:** USD 2,131 million

Types of Events	Types of Movement	Types of Response
Floods Earthquakes Landslides Cold fronts	Internal displacement	Disaster risk reduction/Disaster preparedness Capacity building Enhancing data gathering and processing



Children living in a temporary shelter in Huayacundo Arma District in Peru. Investing in disaster preparedness is essential to mitigate the effects of natural disasters on remote communities and avoid situations of protracted displacement. © IOM 2007

# Information Management at the Heart of Disaster Preparedness

## Institutional and Community Strengthening of the Civil Defense System

<b>Status</b>	Completed
<b>Project Period</b>	March 2006 to 30 June 2007
<b>Beneficiaries</b>	1,400 persons (public officials, non-governmental organizations (NGOs), community leaders)
<b>Budget</b>	USD 295,264
<b>Donor</b>	Disaster Preparedness European Commission Humanitarian Aid (DIPECHO)

## Environmental Challenges and Other Intervening Factors

### *A diverse country with varied threats*

Peru is a country of geographically diverse regions, including the Costa (Coastal region), the Sierra (Andean region) and the Selva (Amazonian region). While affecting each region differently, natural disasters, including floods, earthquakes, landslides and cold fronts are common to all, resulting in the displacement of many communities.

Climate change brings with it additional temperature variations that could result in an increase in the frequency and intensity of the El Niño phenomenon,<sup>11</sup> damaging the fishing industry in the Costa and resulting in droughts in the Sierra that damage the agricultural sector. Crucially, water supply throughout the country will become increasingly limited due to glacial melting placing a serious threat on the human security of the population which depends on it.

<sup>11</sup> El Niño is the appearance every few years of unusually warm surface waters of the Pacific Ocean along the tropical western coast of South America. It affects fishing, agriculture and local weather from Ecuador to Chile, and can cause global climatic anomalies in the equatorial Pacific, Asia, and North America.

## IOM Programmatic Responses

IOM's strategy has been to provide technical support for the strengthening of Peru's System of Civil National Defense. In addition, IOM is supporting the initiatives of the National Humanitarian Network that seek to prevent emergencies and effectively respond to them when they occur.

### *Building government and local authority capacity for improved preparedness*

Through the use of a geographic information system (GIS),<sup>12</sup> the *Institutional and Community Strengthening of the Civil Defense System in Callejon de Huaylas*<sup>13</sup> project (FORDECI in Spanish) aimed to strengthen the capacity of local authorities in decision-making for community welfare, with a focus on managing natural risks and hazards. This involved enhancing tools, data and coordination channels in order to better plan and prepare for natural disasters in this region of Peru. In particular, vulnerability and adaptation to climate change in the Santa River's hydrographical basin was a key theme.

Specifically, the project included the elaboration of risk cartography and the creation of the Geomatics Centre.<sup>14</sup> These initiatives helped to map risk areas and thereby supported the development and application of disaster risk reduction (DRR). Consistent with these efforts, the relevant authorities were trained in the gathering, maintenance and appropriate use of information for improved disaster preparedness (DP). FORDECI contributed to strengthening the Civil Defense System by enhancing the role of the Civil Defense Regional Committee (CDRC). Furthermore, **DRR and DP capacities were significantly enhanced through improvements made to the existing risk-related cartography which was limited, outdated and based on technology that did not allow quick updating or referencing to a location.** Notably, as a result

<sup>12</sup> A GIS captures, stores, analyses, manages, and presents data that is linked to location.

<sup>13</sup> The project was implemented in the provinces of Huaylas (Caraz), Yungay, Carhuaz, Huaraz and Recuay (Callejon de Huaylas/Santa River Basin).

<sup>14</sup> Geomatics is the discipline of gathering, storing, processing, and delivering geographic information, or spatially referenced information.

of information dissemination and awareness raising, DRR and DP gained significance in the political agenda.

### *Supporting national initiatives*

In addition to IOM's strategy to provide technical support for strengthening Peru's System of Civil National Defense, the organization is supporting the initiatives of the Peruvian National Humanitarian Network, which was formed in 2008 with the participation of IOM as a full member. The main goal of the Network is to prevent loss resulting from emergencies and effectively respond to them through effective coordination. The three strategic areas of action for the Network are the following:

- Improve coordination efforts and the exchange of meaningful information among members, with the government and with the international humanitarian community.
- Strengthen national capacities and technical expertise for the management of natural disasters.
- Develop a normative framework and procedures according to humanitarian international standards in order to bring rapid and effective responses to natural disasters, incorporating technical support from the international humanitarian community.

### *Lessons Learned and Sustainability*

#### *Using information technology to reach out*

By making information available and accessible on the web, the project managed to reach out to and work with a range of stakeholders, including municipalities, NGOs, local universities, and other public institutions. In addition, to promote and ensure the usefulness of the web-based tools, various activities, workshops, conferences and courses were conducted with the relevant target audiences in the province of Callejón de Huaylas.

#### *Not enough time*

While FORDECI was considered to have met its objective of strengthening institutional preparedness capacities through improved



information gathering and processing, the project period, limited to 15 months, did not allow for full utilization of the tools developed. For example, in terms of training, more time would have been useful to conduct workshops and courses for municipal officers and thus ensure the sustainability of the project by transferring the necessary skills and knowledge. Capacity building in DRR and DP often requires long-term engagement with the target groups.

## Project

### Institutional and Community Strengthening of the Civil Defense System

<b>Status</b>	Completed
<b>Project Period</b>	March 2006 to 30 June 2007
<b>Beneficiaries</b>	1,400 persons (public officials, NGOs, community leaders)
<b>Budget</b>	USD 295,264
<b>Donor</b>	DIPECHO

# TRINIDAD AND TOBAGO

## BASIC FACTS

**Total Area:** 5,128 sq km

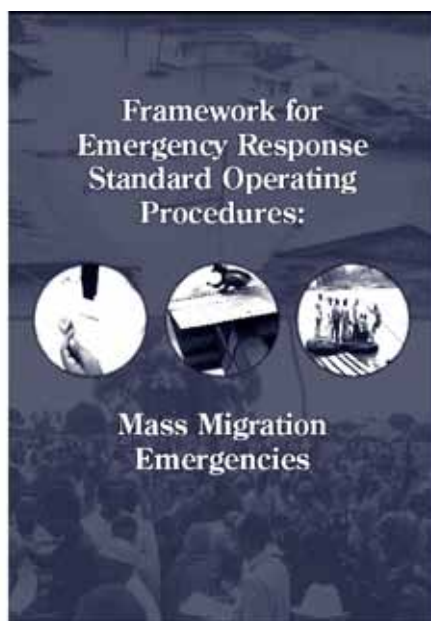
**Population:** 1.3 million

**Gross Domestic Product (GDP) per capita PPP:** USD 14,603

**Net Migration Rate:** -3.1 migrants/1,000 population

**Annual Remittances:** USD 92 million

Types of Events	Types of Movement	Types of Response
Hurricanes Volcanic eruption Earthquakes	Internal and external mass migration	Disaster risk management Disaster preparedness



Guidance for action in case of mass migration emergencies in Trinidad and Tobago: Framework for Emergency Response Standard Operating Procedures. © IOM Publication 2008

# Providing a Framework to Efficiently Respond to Mass Migration

Status	Completed
Project period	2008
Beneficiaries	Government ministries, local authorities, private businesses, non-governmental organizations (NGOs) and intergovernmental organizations
Budget	N/A
Donor	US Department of State

## Environmental Challenges and Other Intervening Factors

### *Prone to disasters*

The Caribbean region is vulnerable to natural disasters such as hurricanes, volcanic eruptions and earthquakes. Climate change is likely to lead to increased and more severe weather events. As a result, the Caribbean will experience increased hurricane activity, sea-level rise and storm surges. Weather events not common to the region, including droughts and heat waves, are expected to occur.

### *Where migration comes into play*

The vulnerability of affected populations is compounded by other intervening factors such as economic disparities and the potential for political unrest. In light of such events and circumstances, migration may be induced, either as a result of the environmental threat, unrest, or perhaps both taken together. Under such circumstances, neighbouring Caribbean states may act as a relief valve. Migration may also be an adaptation strategy for individuals, families and communities looking to expand their resource base, as seen in cases of slow-onset degradation.

### *Trinidad and Tobago: A common destination and transit country for migrants in the Caribbean*

In the Caribbean, Trinidad and Tobago has traditionally been a major destination and transit country, with one-third of all migrants from within the Caribbean region residing in the twin-state. These

movements have been influenced by a variety of “push” and “pull” factors, including those mentioned above.

In the event of natural disasters, as one of the four Subregional Focal Points established by the Caribbean Disaster Emergency Response Agency (CDERA),<sup>15</sup> Trinidad and Tobago is responsible for assisting Grenada and Guyana. **Given the responsibilities that the island faces and the possibility of increased movements, including displacement, due to climate change, it is critical that it builds its capacity for effective response.**

## IOM Programmatic Responses

*The framework for emergency response standard operating procedures: A tool for migration management in disaster situations*

In order to help the Government of Trinidad and Tobago manage potential mass migration flows resulting from emergencies, IOM, in partnership with the Office for Disaster Management and Preparedness (ODPM) and the Ministry of National Security, has developed a manual to help guide the development of a plan of action in disaster preparedness. As part of this aim, the manual seeks to establish a framework for Standard Operating Procedures (SOPs) which will enable a more effective response on the part of the local and national authorities, as well as foster a culture of preparedness among local communities. The guidelines are part of a wider initiative to build technical capacity within Trinidad and Tobago in migration management.

The manual is organized by grouping agencies in accordance with their potential Emergency Support Functions (ESFs) such as transport, communications and management, thereby establishing clear lines of inter-agency responsibilities in cases of emergency. A further breakdown of functions is provided in each area including

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<sup>15</sup> CDERA is a regional inter-governmental agency responsible for disaster management. Its main function is to make an immediate and coordinated response to any disastrous event affecting any participating state, once the state requests such assistance. There are presently 16 CDERA member states.

identification of the lead and supporting agencies, the purpose, concept of operations and responsibilities for each support function. The manual also provides an emergency response toolkit, containing practical models for information tracking, such as the situation report template and gap identification sheet.

This framework for orderly migration management in states of emergency is consistent with international conventions and was developed taking into consideration both short- and longer-term objectives. It is meant to serve as a tool for training the relevant agencies involved in emergency response efforts.

## Lessons Learned and Sustainability

### *Making sure all are involved and coordinated*

Emergency response requires inter-agency coordination, at both administrative and operational levels. For this reason, this manual has been careful to involve a variety of stakeholders at both levels. Actors include government ministries, local authorities, private businesses, as well as NGOs and intergovernmental organizations. Furthermore, the manual provides a detailed description of tasks to ensure that roles are understood and delineated, to help facilitate effective coordination.

### *Remaining flexible*

Although emergency situations may be similar, each operation is unique and thus requires a level of adaptability in the interpretation of guidelines as set out in such manuals.

### *Under constant revision*

Guideline manuals such as this one require frequent updating to reflect changing types of situations and alterations in modes of responses, reflecting lessons learned from past experiences. As an example, the names and functions of ministries noted in the manual may change, thus calling for revisions to the manual accordingly. Furthermore, policies are frequently revised, which should be properly accounted

for in the text. Such efforts call for the lead ministry to remain on vigilant lookout for such circumstantial changes. It is also important that contact with beneficiaries is maintained so that new versions are appropriately redistributed. Disaster risk reduction could be an area to expand in for future editions.

## Project

### Framework for Emergency Response Standard Operating Procedures: Mass Migration Emergencies

<b>Status</b>	Completed
<b>Project period</b>	2008
<b>Beneficiaries</b>	Government ministries, local authorities, private businesses, NGOs and intergovernmental organizations
<b>Budget</b>	N/A
<b>Donor</b>	US Department of State

# ASIA & THE PACIFIC

Bangladesh  
Cambodia  
Indonesia  
Myanmar  
Nepal  
Pakistan  
Philippines  
Timor-Leste



# BANGLADESH

## BASIC FACTS

**Total Area:** 143,998 sq km

**Population:** 161.3 million

**Gross Domestic Product (GDP) per capita PPP:** USD 2,053

**Net Migration Rate:** -0.5 migrants/1,000 population

**Annual Remittances:** USD 6,500 million

Types of Events	Types of Movement	Types of Response
Cyclones Flooding Landslides Droughts Coastal erosion and sea-level rise	Internal displacements Internal movements, including from coastal and riverbank areas to urban slums	Disaster risk management/ Emergency response Climate change adaptation Advocacy and awareness raising Research migration and the environment

Migration with no return from Shyamnagar, Bangladesh. Floods and coastal erosion as a result of irregular rain patterns and cyclones are expected to further increase in the future.  
 © IOM 2009



# Bangladesh on the Move: Escaping from Eroding Coasts and Extreme Weather Events<sup>1</sup>

Status	Ongoing
Project Period	October 2009 to March 2010
Beneficiaries	24,000 families
Budget	USD 1.6 million
Donors	United Kingdom Department for International Development (DFID), Bangladesh

## Environmental Challenges and Other Intervening Factors

Bangladesh is one of the countries in the world most vulnerable to the impacts of climate change, due to its predominant location on a flood plain, low elevation, high population density, high levels of poverty and the direct dependency of its population on natural resources. Extreme climatic events have historically claimed millions of lives and destroyed livelihoods, but Bangladesh has also been able to prove to the rest of the world that with proper investment in Disaster Risk Reduction, it is possible to drastically cut down the death toll.

However, with climate change looms a daunting challenge. Bangladesh has a very low and flat topography, except for the north-east and south-east regions. About 10 per cent of the country is hardly 1 metre above the mean sea level (MSL), and one-third is under tidal excursions. **It is estimated that with a sea rise of 1 metre, should no dyke enforcement measures be taken, one-fifth of Bangladesh will be under water.** This would result in a loss of an estimated USD 5 billion in 2010, or 10 per cent of the country's GDP. Already one of the world's poorest countries, Bangladesh will see immense losses to development.

The effects of climate change are already taking their toll. Summers are becoming hotter, cold spells longer and rain patterns (including the monsoon) more irregular. Coastal areas are experiencing embankment

<sup>1</sup> See also Migration Magazine, Autumn 2009, IOM, available at [http://publications.iom.int/bookstore/free/migration\\_autumn\\_09.pdf](http://publications.iom.int/bookstore/free/migration_autumn_09.pdf)

erosion and salinization as the sea level rises. The irregularity of rainfall is leading both to flooding and drought. Furthermore, there has been an increased prevalence of diseases such as dengue, malaria, cholera and diarrhoea.

These occurrences have made an impact on the socio-economic resources and sectors of Bangladesh, including water resources, agriculture and forestry, infrastructure and human health, to name a few, posing a severe threat to the human security of its inhabitants.

### *Urbanization of an already crowded city*

As an example of the effects of climate change on Bangladesh's inhabitants, a vast number of families have lost their homes permanently to river bank erosion and have been compelled to move, often to urban slums in large metropolitan areas such as the capital city Dhaka, as well as Rajshahi, Khulna and Chittagong. The World Bank estimates that Bangladesh's urban population may reach approximately 68 million by 2015, accounting for 37 per cent of the total population.

Dhaka, on the banks of the Buriganga River, is the world's fastest-growing megacity. It has a population of more than 12 million people – double the population a decade ago – and this number is projected to grow to 20 million by 2020.<sup>2</sup> Dhaka's slum population – estimated at 3.4 million – is also expected to grow,<sup>3</sup> with as many as 400,000 migrants, most of them poor, arriving each year from rural and coastal areas where environmental hardship is increasingly common.

The outcome of such rapid and unregulated internal migration could increase tension over available resources in the destination areas. An IOM evaluation indicates that internal migrants, including forced migrants, may experience marginalization and social exclusion. They may also find health care services lacking and encounter difficulties in relocation.

<sup>2</sup> World Bank (2007) "Dhaka: Improving Living Conditions for the Urban Poor" *Bangladesh Development Series*, Paper No. 17, The World Bank Office, Dhaka.

<sup>3</sup> World Bank (2009) *Urban Growth: A Challenge and an Opportunity*, <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/0,,contentMDK:21393869~pagePK:146736~piPK:146830~theSitePK:223547,00.html#example>.

## *Cyclone Aila: The new future?*

Cyclone Aila, which hit coastal West Bengal on 25 May 2009, is regarded as the worst storm to hit Kolkata in 20 years. The storm affected over 5.1 million people in 16 districts of West Bengal. Ninety-six deaths were recorded, 25 of which were caused by a landslide in Darjeeling. Over 500,000 houses were damaged and the losses to agriculture were particularly sizeable for farmers preparing for the upcoming harvest. Worst-hit was the Sundarbans National Park, with a population of 3 million.

### IOM Programmatic Responses

Given the diverse threats faced by Bangladesh, from rising sea levels to natural disasters, such as the cyclones which hit coastal areas in the spring of 2009, IOM has undertaken a comprehensive approach in assisting affected communities.

#### *Months after Cyclone Aila: Responding to the needs of the displaced*

In response to Cyclone Aila and at the request of the government and the Inter-Agency Standing Committee (IASC), IOM undertook two field assessments in areas in Southern Bangladesh affected by Cyclone Aila. Based on these assessments, IOM is implementing a project to support over 24,000 displaced families, providing temporary shelter support and other essential non-food Items (NFIs).

The displaced families benefiting from this project are those who live on embankments, as well as those temporarily squatting in public places in and around collective centres, for whom a return to their places of residence is not an option until the dry season begins and critical infrastructure in and around their places of origin has been fixed by the authorities.

To facilitate implementation, IOM is setting up a temporary office and presence in the areas and closely coordinating with the local administration and through its network of local partner NGOs to ensure effective and rapid implementation in line with international standards. The objective is to address assistance gaps.

## Challenges and Considerations on the Road Ahead

Although relief assistance was provided immediately after the cyclone by the government as well as different humanitarian agencies, months later there were still important needs. **The IOM field assessment mission that took place in August 2009 discovered that some locations had not received assistance since the first week of July, showing the difficulty to sustain humanitarian assistance to victims that are dependant over a long-period of time.** Needs are numerous, and disparity is growing daily as people vie for scarce resources.

### *Gender and protection challenges*

Moreover, it was highlighted during the first assessment mission that took place in June that issues of protection (victims of trafficking) were already arising in addition to cases of gender-based violence and child protection. Meeting immediate transitional shelter needs will equally mean that protection and security needs will be better addressed. IOM has already gained experience in Bangladesh in a similar context through an ongoing United States Agency for International Development (USAID) project (*Counter-Trafficking Interventions in Prevention, Protection and Prosecution for Victims of Trafficking in Persons in Bangladesh*) by setting up Community Information Centres (CICs) in areas worse affected by the devastating Cyclone Sidr that wreaked havoc on 15 November 2007.

A Task Force on Temporary Settlements, under the Shelter Cluster,<sup>4</sup> and in close coordination with the office of the Resident Coordinator, will be established. The task force will comprise agencies such as the World Food Programme (WFP), the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), in coordination with

<sup>4</sup> The Cluster Approach was proposed by the **Inter-Agency Standing Committee (IASC)** in the 2005 Humanitarian Response Review as a way of addressing gaps and strengthening the effectiveness of humanitarian response through building partnerships and clarifying roles and responsibilities of organizations within the different sectors of humanitarian response. Global cluster leads have been designated in 11 areas of humanitarian activity. At the global level, IOM leads the Camp Co-ordination and Camp Management (CCCM) Cluster for Natural Disasters and actively participates in the Logistics, Early Recovery, Health, Emergency, Shelter and Protection Clusters.

the Government of Bangladesh, in order to address the outstanding needs (health, sanitation, food, and protection) of these families in a coordinated manner.

#### For a Comprehensive Policy Approach: Putting Environment and Migration on the Climate Agenda

IOM has been advocating for the recognition of the nexus between climate change, environment and migration, and is notably in the process of convening a high-level policy dialogue on Climate Change, Environment and Population Movements.

Owing to IOM's advocacy on issues regarding environmental migrants, including displacement, governments and concerned experts have taken note of the complex relationship between climate change, environment and population displacement, an element that features significantly in Bangladesh's position paper for the climate change negotiations during the Fifteenth Conference of the Parties (COP 15) in December 2009 in Copenhagen, Denmark.

To deepen understanding of the local situation, IOM has also commissioned a study on the impacts of river bank erosion on population displacement and produced a documentary entitled *The Silent Cries* on the victims of river bank erosion.

## Project Details

<b>Status</b>	Ongoing
<b>Project Period</b>	October 2009 to March 2010
<b>Beneficiaries</b>	24,000 families
<b>Budget</b>	USD 1.6 million
<b>Donors</b>	DFID

# CAMBODIA

## BASIC FACTS

**Total Area:** 181,035 sq km

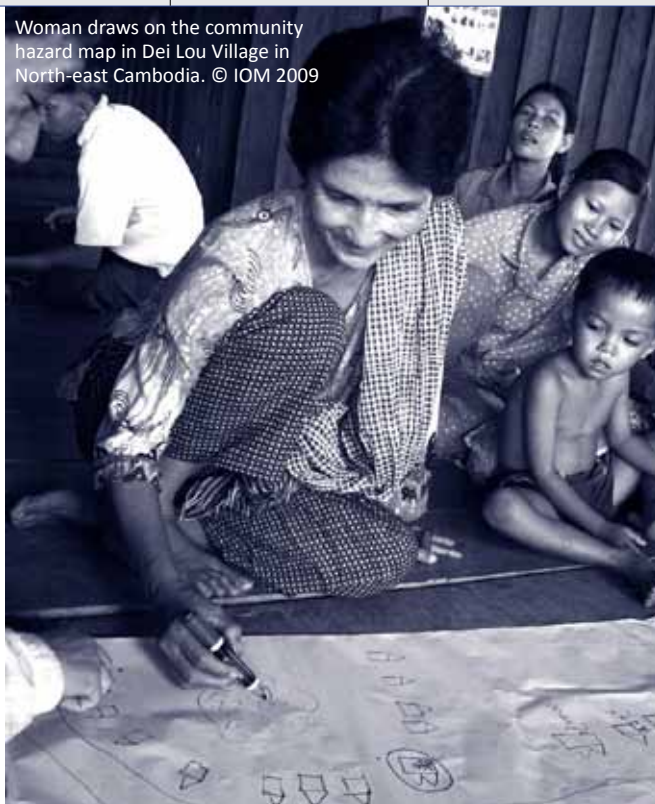
**Population:** 13,956,000

**Gross Domestic Product (GDP) per capita PPP:** 2,423

**Net Migration Rate:** -0.1 migrants/1,000 population

**Annual Remittances:** 177.4 million

Types of Events	Types of Movement	Types of Response
Flood Drought Insect infestation	Potential displacement Internal movement to higher ground Temporary and permanent relocation of villages	Research on migration and environment Disaster risk reduction Climate change adaptation



Woman draws on the community hazard map in Dei Lou Village in North-east Cambodia. © IOM 2009

# Reaching Out to Remote Indigenous Populations: Community Based Disaster Risk Management in Practice

<b>Status</b>	Ongoing
<b>Projects Period</b>	January 2009 to July 2010
<b>Beneficiaries</b>	Local communities and indigenous populations in villages situated in hazard-prone areas of Ratanakiri and Mondulkiri provinces; members of the National Committee for Disaster Management (NCDM) in Phnom Penh and its line offices at the district and provincial level; local non-governmental organizations (NGOs) and community-based organizations.
<b>Combined Budget</b>	USD 747,000
<b>Donors</b>	Spanish Agency for International Cooperation and Development (AECID) and the Ministry of Foreign Affairs of Finland

## Environmental Challenges and Other Intervening Factors

*Floods, droughts and deforestation: Increasing the vulnerability of marginalized forest communities*

Cambodia is one of the hazard-prone countries in South-East Asia. Flooding and drought in the country have always been seasonal, expected occurrences. Today, climate change, deforestation, logging, and environmental degradation are converging to contribute to a higher occurrence of unexpected and extreme events.

In both absolute and relative terms, Cambodia is among the countries at highest risk of floods; it has the greatest number of people, as a percentage of its population, exposed per year. Furthermore, Cambodia is considered to be among the countries with the highest vulnerability to natural disasters, in terms of relative economic loss and economic resilience. Every year, a significant number of people are exposed to natural hazards that threaten their human security.

Ratanakiri and Mondulkiri are two remote provinces, situated on the border with Viet Nam and Laos in the north-east part of the country. They are extremely rich in dense forests, a fact that helped Cambodia earn the moniker “green lung of South-East Asia.” However, large areas



of this region's forests have been logged and their ecological integrity has become frail. The consequences of deforestation compounded by climate change have gradually caused flooding and drought to intensify, prompting some villages to relocate to safer areas and raising challenges in terms of food and water security.

Moreover, village communities have experienced a substantial loss of control over land use and natural resources, due to the socio-economic dynamics experienced in the region. A rapidly changing economy driven by the intense exploitation of the region's resources, in particular timber and agricultural land, poses a threat to traditional livelihoods and increases communities' vulnerability to natural and man-made hazards.

Over 85 per cent of the population of Ratanakiri and Monduliri is composed of indigenous groups and ethnic minority groups who lead a traditional way of life and strongly rely on the forest for their subsistence. Their marginalization, compounded by their strong reliance on natural resources, leaves these communities particularly vulnerable to the effects of climate change, environmental degradation and natural hazards.

## IOM Programmatic Responses

### *Developing the knowledge base to act on*

*Mapping Vulnerability to Natural Hazards in Ratanakiri and Monduliri* was a nine-month research project carried out by IOM in support of the Cambodian government's efforts to promote disaster risk reduction (DRR) in the north-eastern provinces of the country.

The nine-month mapping exercise in Ratanakiri and Monduliri set out to identify community-level vulnerabilities to natural hazards and assess the linkage between environmental degradation and increased vulnerability. This analysis included issues relating to natural resource management, focusing on deforestation practices and man-made hazards, which contributed to the existing disaster vulnerability of communities. The mapping exercise further examined existing

indigenous coping mechanisms for natural disasters and proposed strategies for further building community resilience.

In partnership with the National Committee for Disaster Management (NCDM) and its line committees at provincial, district and commune levels, IOM conducted a Hazard, Vulnerability and Capacity Assessment in 52 selected villages in Ratanakiri and Mondulkiri. Data collected on the impact of natural and man-made hazards on these village communities was validated by representatives of the villages who also participated in the workshops organized to disseminate the research findings.

The detailed findings, conclusions, and recommendations of the mapping study have been published in two final reports, one for each province.<sup>5</sup> A video documentary has been produced in each of the two provinces with the intention to give a voice and a face to the affected indigenous communities and add a visual dimension to the research findings. The NCDM has endorsed both reports and has moreover decided to include the two provinces in its Strategic National Plan of Action for Disaster Risk Reduction.

#### *Study Findings*

IOM's research has determined that the assessed communities are highly vulnerable to flood, drought, and insect infestation. The frequency and severity of these three main natural hazards often combine in ways that threaten the livelihoods and food and water security of indigenous village communities.

The target communities reported that excessive exploitation and degradation of natural resources are among the factors seen to increase the occurrence and severity of all hazards, and exacerbate the impacts of climate change, including the onset and duration of rainy and dry seasons. Reduced access to alternative livelihood options (such as forest non-timber products and game, as well as fishing) further limits the coping abilities of communities in times of flood and drought.

Basic yet effective community-based disaster risk management (CBDRM) practices based on generations-old knowledge and warning systems are applied, respected, and considered reliable by villagers. However, increasingly unpredictable changes in climate

<sup>5</sup> Final Report: Mapping Vulnerability to Natural Hazards in Mondulkiri: <http://www.iom.int/jahia/webdav/shared/shared/mainsite/activities/countries/docs/Final-Report-Mapping-Vulnerability-Natural-Hazards-Mondulkiri.pdf> and Final Report: Mapping Vulnerability to Natural Hazards in Ratanakiri: <http://www.iom.int/jahia/webdav/shared/shared/mainsite/activities/countries/docs/Final-Report-Mapping-Vulnerability-Natural-Hazards-Ratanakiri.pdf>

patterns have rendered such traditional practices less effective, especially as they are better suited to slow-onset disasters.

Communities expressed interest in engaging in natural-resource management and protection of forests; some are in the process of establishing community-protected areas and forests with governmental agencies. This approach is seen as a key element in preserving knowledge of traditional coping strategies, which could be effectively integrated in future CBDRM initiatives.

The study determined that all hazards impact human security in various degrees, in particular food and water security. Food shortages resulting from floods are a central feature. Areas that experienced deforestation show higher vulnerability to floods and droughts due to depletion of topsoil, reduced water-retention capacity of the soil, and reduced rainfall. Flash-flood risk was also identified in relation to existing or planned hydropower dams.

DRR has yet to be embraced at the local level in the remote provinces of Ratanakiri and Monduliri, through Cambodia's mechanisms of decentralization and deconcentration. Consequently, DRR is not included in development planning, and disaster management at this time focuses solely on emergency relief and response. The Provincial Committee on Disaster Management needs support to include and build its DRR programming.

**The research documented some instances of village communities using migration as an adaptation response. A typical pattern of mobility is one driven by floods, with villagers moving to higher ground away from the river, and sometimes villages splitting into smaller sub-villages located away from each other in their search for safe areas.**

Resettlement of villages can be temporary or permanent. Access to water often becomes highly restricted as a result of such relocation. Resettlement impacts are mixed, with some communities experiencing positive effects from the move, and others experiencing negative impacts, depending on the location of the new village, proximity to roads, access to water sources, soil type and available land.

## Lessons Learned and Sustainability

### *Community resilience and disaster mitigation capacity: Learning from the past*

**Community-based natural resources management is not only a core building block of indigenous identity, but also a basis for community-based disaster risk management (CBDRM).** The two are closely interlinked in these communities. Future interventions seeking to introduce CBDRM practices in these north-eastern provinces should aim to learn from and integrate indigenous practices of community-based natural resources management.

## *Helping to protect the environment and communities through policy and legislative reform*

The passage in recent years of several important laws, decrees, sub-decrees, and policy documents, provide new opportunities for the interaction of natural resource management policies and disaster risk reduction strategies, particularly in the context of decentralization reforms and distribution of mandates at the sub-national and community levels.

### The Way Forward...

#### *Putting recommended actions into play*

As a second phase of the *Mapping Vulnerabilities to Natural Hazards in Ratanakiri and Mondulakiri* project and acting on the recommendations put forth in the final report of the field research, IOM proposed a follow-up project in these remote provinces and received funding from AECID in October 2009.

In partnership with the NCDM, IOM aims to build community resilience and institutional capacity for DRR, focusing on remote and marginalized populations identified through the mapping study to be highly vulnerable to flood and drought. An additional component will be to expand the vulnerability mapping exercise to the neighbouring province of Stung Treng, to ensure more comprehensive coverage of the north-eastern part of the country.

At the community level, resources will be mobilized to allow the participation of the most remote villages in training programmes to be held at the district level with the support of the District Committees for Disaster Management (DCDM). This training component will seek to enhance understanding of DRR key concepts and policies and promote the inclusion of disaster preparedness and management strategies into community development planning. The training modules will cover a wide range of topics including:

- community risk assessments;
- evacuation and safe area management;

- early warning systems;
- damage and needs assessments.

The workshops will see the participation of village chiefs from each community surveyed during the recent assessment phase, as a first step towards the creation of Village Disaster Management Teams.

Further training programmes will be designed and delivered at the sub-national level, focusing on general knowledge of DRR legislation, policy, and climate change adaptation strategies. These programmes will serve as a venue for transferring and adapting standardized training formats to the specific contexts of Ratanakiri and Mondulakiri. The training workshops will also provide a platform for identifying coordination mechanisms between the province and the district down to the communities, and will ultimately seek to foster the mainstreaming of disaster management policies into their respective development plans.

## List of Projects

### Mapping Vulnerability to Natural Hazards in Ratanakiri and Mondulakiri, Cambodia

<b>Status</b>	Completed
<b>Project Period</b>	January to September 2009
<b>Beneficiaries</b>	Local communities and indigenous populations in villages situated in hazard-prone areas of Ratanakiri and Mondulakiri provinces; members of the NCDM in Phnom Penh and its line offices at the district and provincial level; local NGOs and community-based organizations
<b>Budget</b>	USD 277,000
<b>Donors</b>	AECID and the Ministry of Foreign Affairs of Finland

### Building Resilience to Natural Hazards in North East Cambodia

<b>Status</b>	Ongoing
<b>Project Period</b>	November 2009 to July 2010
<b>Beneficiaries</b>	Local communities and indigenous populations living in hazard-prone areas, members of the NCDM, DCDM, line ministries, NGOs and community-based organizations.
<b>Budget</b>	USD 370,000
<b>Donor</b>	AECID

# INDONESIA

## BASIC FACTS

**Total Area:** 1.9 million sq km

**Population:** 234.3 million

**Gross Domestic Product (GDP) per capita PPP:** USD 3,455

**Net Migration Rate:** -0.9 migrants/1,000 population

**Annual Remittances:** USD 6 billion

## Aceh/Nias and Yogyakarta

### Environmental Challenges and Other Intervening Factors

Indonesia has a long history of disasters. Situated along the Eurasian and Australian tectonic plates, it is regularly hit by devastating and deadly earthquakes, such as the recent earthquakes that struck the West Java and West Sumatra regions in September and October 2009. The earthquakes resulted in heavy death tolls and damages, leaving thousands homeless. Indonesia is also susceptible to tsunamis, as witnessed in December 2004, and volcanic eruptions. Sumatra and other parts of the archipelago are affected by both the north-east and south-west monsoon and, as a result, suffer from regular floods and landslides.

The steady population growth increases the demand for agricultural products and land. It leads to deforestation in order to establish new farmland, settlements and infrastructure projects to connect these settlements to the main local trade centres.

The growing demand worldwide for crude palm oil increases this environmental trend. Indonesia is recognized as the country with the fastest rate of deforestation in the last five years. According to *Indonesia and Climate Change*, a 2007 study conducted by the UK Department for International Development (DFID) and World Bank, deforestation

and land conversion are among the main contributors to the degraded state of the environment and increasing effects of climate change, putting populations at greater risk when disasters strike.

**Between 2002 and 2005, earthquakes and tsunamis internally displaced about 550,000 persons (IDPs), while floods resulting in landslides alone displaced about 1.5 million persons. Unfortunately, the latter has received little notice, while disasters such as earthquakes and tidal waves receive the most attention from the media and the international donor community.**

## Aceh and Nias

Types of Events	Types of Movement	Types of Response
Tsunami Earthquakes Floods and landslides	Internal displacement	Disaster risk management/ Emergency response Disaster risk reduction Community stabilization and livelihoods

Earthquake-related rehabilitation programme in Aceh/Nias, Indonesia. The involvement of the local community workers is a key factor to ensure the sustainability of the reconstruction process. © IOM 2006



# Facing Reoccurring Natural Disasters: How to Rebuild Better

<b>Status</b>	Ongoing <sup>6</sup>
<b>Project Period</b>	2005 to 2009
<b>Total Beneficiaries and Outcomes</b>	Approximately 22,240 individuals benefited from shelter assistance; 14,270 individuals benefited from access to safe water and sanitation systems; 3,350 families benefited from livelihood support; 595 individuals benefited from direct health assistance; 3,936 health care professionals were trained; 3,687 female members of IOM-assisted women's cooperatives; 388 public buildings constructed (incl. clinics, schools, community centres, etc.)
<b>Combined Budgets</b>	USD 125,891,879
<b>Donors</b>	European Commission Directorate-General for Humanitarian Aid (ECHO); Governments of the United States of America, Australia, Korea, Sweden, Switzerland, Japan, Canada, Portugal, Queensland, Germany, the Netherlands, Norway, the United Kingdom, China, Poland and Italy; United Nations Development Programme (UNDP); United Nations Children's Fund (UNICEF); American Red Cross; Netherlands Red Cross; UBS; AmeriCares; Latter-day Saint Charities (LDSC); Oxfam; Care; Save the Children; and Dow Chemical Company.

## Environmental Challenges and Other Intervening Factors

### *Heavy rainfall with devastating effects*

In Sumatra, floods resulting from heavy rainfall continue to cause entire sub-districts to be disconnected for days, with aid arriving by far too late. Local emergency management authorities are often overwhelmed, and the capacity and preparedness to react adequately are too limited. The floods not only wash away roads and bridges, they also destroy fields and irrigation systems which local populations rely on for their livelihoods. The vulnerability of affected communities is exacerbated by deforestation and the absence of contingency planning. As climate change predictions pass into reality, heavy rainfall that was previously considered an unusual phenomenon may evolve into a regular occurrence. Therefore, local authorities need assistance to prepare for what may become yearly, anticipated events.

<sup>6</sup> See project details at the end of the section.



## *Tidal waves and earthquakes*

In March 2005, Sumatra, including the islands of Nias (North Sumatra) and Simeulue (Aceh), was hit by a powerful 8.7 magnitude earthquake only three months after the fierce seaquake that caused the Indian Ocean tsunami in December 2004. Both natural disasters resulted in heavy death tolls, while forcing hundreds of thousands of people from their homes and damaging hundreds of schools, infrastructures and government buildings.

## IOM Programmatic Responses

### *The road to recovery*

In the aftermath of the natural disasters in Aceh and Nias, IOM's rehabilitation programmes expanded significantly across the province, with thousands of new homes, schools, clinics and water supply systems constructed, in addition to effective livelihood support and health education initiatives.

In response to the severe flooding in Aceh's Central Highlands in December 2006 which made some remote areas, parts of the Gayo Lues district, completely inaccessible as a result of heavy landslides triggered by deforested slopes, IOM, under its *2007 Flood Response in the Highlands of Aceh* project, helped to reconstruct essential infrastructure such as bridges and water-supply systems. By July 2007, safe water supply had been provided to 350 households, and six bridges, two culverts, one river crossing and five irrigation systems had been rehabilitated.

The project also helped to improve the livelihood security of farmers through emergency supply of agricultural input and equipment. Agricultural support in the form of land clearing, tools and seed kits were provided to 700 households to immediately restore and strengthen food levels in households and income security.

In the aftermath of the natural disasters that hit Aceh province, the affected population was also in need of clean water and sanitation.

Collaborating with community committees, IOM determined the most appropriate and sustainable water and drainage solutions. The quality of septic systems was improved and this helped to reduce potential environmental impact.

### *Building back better*

Considering the high seismic risk in Indonesia, IOM used a building design that provides a secure, earthquake-resistant structure (Earthquake Zone 6). IOM utilized a certified locally available shelter solution (RISHA – Indonesian Research Institute for Human Settlements) under the supervision of the Public Works Department's laboratory-tested design. This design incorporates a 38 square metre to 44 square metre modular reinforced pre-cast concrete structure and septic system design that can deal with the high water table found in most coastal communities. The same certified model was also applied to the construction of public buildings accommodating community activities such as schools, clinics (108 sqm), student dormitories, community centres (180 sqm), and administrative offices (90 sqm). The model was also adapted for unconventional site conditions such as hillsides and flood (swamp) areas.

Together with Muslim Aid and Andalas University's Department of Civil Engineering, IOM conducted a series of training and awareness-raising campaigns on safe earthquake construction practices across 80 West Sumatran villages.

**In 2008, IOM completed three years of sustained efforts in post-tsunami and post-earthquake reconstruction in Aceh and Nias. A total of 4,448 transitional shelters and permanent houses were built, along with 388 public buildings such as schools, clinics and community centres.** In light of the recent earthquakes on 30 September 2009 and 1 October 2009 that wreaked havoc in West Sumatra, the potential to replicate "building back better" programmes is being assessed.

### *Building back livelihoods*

In partnership with local NGOs, IOM also developed and field-tested income-generating initiatives that have reached a total of

3,400 earthquake and tsunami-affected households along the coast. This support-to-livelihood component, ranging from fisheries and agricultural support activities to micro-financing support for small businesses, were integrated into the Organization's housing and reconstruction programme in order to rebuild household economies and ensure overall community stability and rapid return to normalcy.

The changing role of women in light of the destruction of livelihoods was recognized as a priority. Thus, IOM has supported 19 communities of women to establish female-managed savings and loan cooperatives and one secondary women's cooperative. The loans that have been made through this project enabled almost 4,000 women, who would not have had access to credit otherwise, to start or expand their businesses, diversify their sources of income and recover from economic shocks resulting from natural disasters.

As part of its response to natural disasters, IOM also provided medical assistance to injured victims of the 2004 tsunami and 2007 Sumatra earthquake. It also facilitated the training of midwives and other health care professionals on detecting and addressing mental health and psychosocial issues faced by disaster-affected and displaced populations, as well as managing birth asphyxia and post-partum haemorrhage.

## Lessons Learned and Sustainability

### *The importance of quality assurance*

Building in earthquake-prone environments naturally bears a huge risk of failure. Therefore, quality assurance during the construction process is an important issue. In order to ensure quality throughout its shelter support programmes, IOM opted for a pre-fabricated system. In addition, it trained all of its local contractors and staff on sound seismic construction. To ensure the sustainability of its intervention, IOM believes that investment in local construction workers is also a key factor, as trained construction workers can transfer their knowledge to their colleagues and their community. In that context, whenever possible, local knowledge should be used and fine-tuned.

## Offering alternatives

Environmental sustainability calls for alternative choices. As part of the *2007 Flood Response in the Highlands of Aceh* project, IOM identified alternative cash crops which could prevent farmers from logging. Ginger, patchouli, cacao and coffee were already being harvested by local farmers, but for private or local consumption only. IOM provided technical training and support to enable farmers to grow such crops on a bigger scale. Whenever possible, intercropping was applied. If fields had to be cleared, bigger trees would not be chopped so that they could help to stabilize soil.

## List of Projects

### Tsunami and Earthquake-Related Rehabilitation Programmes in Aceh and Nias<sup>7</sup>

<b>Status</b>	Completed
<b>Project Period</b>	2005 to 2009
<b>Beneficiaries</b>	Approximately 22,240 individuals benefited from shelter assistance; 14,270 individuals benefited from access to safe water and sanitation systems; 3,350 families benefited from livelihood support; 595 individuals benefited from direct health assistance; 3,936 health care professionals were trained; 3,687 female members of IOM-assisted women's cooperatives; 388 public buildings constructed (incl. clinics, schools, community centres, etc.)
<b>Budget</b>	USD 125,891,879
<b>Donors</b>	ECHO; the Governments of the USA, Australia, Korea, Sweden, Switzerland, Japan, Canada, Portugal, Queensland, Germany, Netherlands, Norway, United Kingdom, China, Poland and Italy; UNDP; UNICEF; American Red Cross; Netherlands Red Cross; UBS; AmeriCares; LDSC; Oxfam; Care; Save the Children; and Dow Chemical Company

### Flood Response in the Highlands of Aceh

<b>Status</b>	Completed
<b>Project Period</b>	December 2006 to June 2007
<b>Beneficiaries</b>	700 farmers
<b>Budget</b>	USD 754,967
<b>Donor</b>	ECHO

<sup>7</sup> Given the scale of the disasters, IOM has had numerous projects funded by various donors to respond to many humanitarian and livelihood challenges. The figures and list of donors provided below are therefore a combination of IOM's multiple projects, which all included a mix of support activities in the sectors of shelter, infrastructure reconstruction, livelihood, health and education.

# Yogyakarta

Types of Events	Types of Movement	Types of Response
Earthquake Altered precipitation patterns (droughts, floods, erratic rainfall, poor water quality and disease)	Internal displacement Rural-to-urban internal migration	Disaster risk management/ Emergency response Disaster risk reduction Community stabilization and livelihoods Climate change adaptation

In Indonesia, income-generating initiatives, such as micro-financing support for small businesses, can ensure the overall communities' stability and rapid return to normalcy in the wake of a disaster. © IOM 2006



# Earthquake and Climate Change Impacts on Local Environment: Looking at New Livelihood Options

<b>Status</b>	Ongoing <sup>8</sup>
<b>Projects Period</b>	2007 to April 2010
<b>Total Beneficiaries</b>	5,934 persons
<b>Combined Budgets</b>	USD 7 million
<b>Donors</b>	Australian Agency for International Development (AusAID); the Government of Queensland; Java Reconstruction Fund (European Commission; the Governments of the UK, Netherlands, Canada, Finland and Denmark; Asian Development Bank)

## Environmental Challenges and Other Intervening Factors

### *An earthquake like no other*

On 27 May 2006, an earthquake measuring 5.9 on the Richter scale struck Indonesia's central island of Java. The earthquake affected five districts in Yogyakarta Province and six districts in neighbouring Central Java Province –together home to 8.3 million people – severely damaging housing and other infrastructure. The two worst-affected districts were Bantul in Yogyakarta Special Region and Klaten in Central Java Province.

A total of 5,749 people were killed, and nearly 40,000 were seriously injured. Over 350,000 houses were damaged beyond repair, while 250,000 houses suffered lesser damage. Around 1.5 million people lost their homes – three times the number of the homeless in Aceh after the Indian Ocean tsunami struck on 26 December 2004. The total damage and losses were estimated<sup>9</sup> at USD 3.1 billion, comparable to the devastating earthquake in Gujarat (26 January 2001) and Kashmir (8 October 2005). Beyond damage to housing, the earthquake also

<sup>8</sup> See project details at the end of the section.

<sup>9</sup> Source: *Joint Preliminary Damage and Loss Assessment – Yogyakarta and Central Java Natural Disaster*, from Bappenas, the Provincial and Local Governments of Yogyakarta and Central Java districts, and International Partners, dated 14 June 2006.

resulted in massive loss and depletion of productive assets, all of which directly impact on housing and livelihood rehabilitation.

#### Other Environmental Challenges: Mapping Vulnerabilities

The island of Java faces diverse environmental challenges that pose a threat to the human security of its inhabitants. Among these challenges are droughts, floods, erratic rainfall, poor water quality and disease.

Some areas in Indonesia, particularly the Gunung Kidul District, are affected by **systemic water shortages during the dry season**. These shortages have an impact on the ability of communities to access drinking water. They also affect irrigation of cropland and thus food security and income-generation. Community coping mechanisms include planting drought-resilient crops and purchasing drinking water from other areas, albeit placing additional burden on poor households with small plots and limited cash savings.

**Prolonged drought** linked to climate change creates harvest failure, forcing affected populations to seek new livelihood sources in urban areas on a temporary or permanent basis, thereby exacerbating already existing migration pressures. However, growing “labour urbanization” does not guarantee more sustainable incomes for groups that lack the skills and resources to build an “urban livelihood”.

Other areas, particularly Klaten District, are affected by **annual floods**, which affect agricultural land and result in harvest failures that impact on particularly vulnerable farm households with smaller plots, as well as landless farm labourers. These floods also increase risks arising from water-borne diseases and frequently lead to landslides, with often devastating impact on affected people’s homes and livelihoods.

Climate change leading to **erratic rainfall** has created difficulties for farmers in determining the planting and harvest season for their crops, undermining the effectiveness of traditional methods (*pranata mangsa*). This leads to frequent harvest failures due to lack of water during the growth season, while also increasing the likelihood of pests and crop diseases.

**Poor water quality** is also a problem. Research conducted in Yogyakarta Province found that 85 per cent of wells have poor water quality, mainly linked to contamination by E. coli bacteria and heavy metal, including manganese, cadmium and copper. Furthermore, there are high levels of “biological oxygen demand”, which reflects heightened pollutant levels from organic materials in the water that require more oxygen than usual for bacteria to disperse and dissolve the pollutants.

There is a **growing incidence of malaria and dengue** linked to climate change. Higher temperatures from climate change allow mosquitoes to spread to new areas, such as higher ground, increasing the risk of the spread of malaria and dengue. Prolonged intense heat waves coupled with high humidity lead to heat exhaustion, particularly among the urban poor and the elderly.

## IOM Programmatic Responses

Environmental degradation caused by the earthquake has become a threat for the human security of the communities in the catchment area. There is a strong causal relationship between poverty, a degraded

environment and higher disaster risk. Environmental management, including community-based resource management, helps to increase community resilience.

### *Community-based assistance and capacity building among the affected*

The *Mobile Community Assistance (MCA) Programme* was developed following the earthquake, with the aim of providing community-based assistance that would also help to reduce the vulnerability of communities to hazards. The MCA programme adopted an integrated strategy for holistically building communities. It featured a number of separate but inter-related components. Training was held on such topics as safe and earthquake-resistant construction practices, disaster preparedness and prevention and “training of trainers” in community-based disaster risk management (CBDRM).

IOM further assisted with the construction of permanent prototype houses and community centres. Livelihood improvement activities were based on training in household finances, entrepreneurship and business development, as well as livelihood assistance in the form of technical assistance, input supply and asset replacement.

Some of the key objectives of the project were to:

- enhance the communities’ knowledge of disaster preparedness and prevention and establish hazard mitigation measures and crisis management systems;
- build community capabilities and their knowledge of managing and utilizing potential skills, assets and natural resources to support their livelihood activities;
- provide vulnerable beneficiaries with a permanent housing solution that could also be used as a fixed information resource on seismic-resistant construction.



### The Bamboo Project: Crafting Opportunities out of Vulnerabilities

A preliminary livelihoods assessment revealed that the bamboo-craft sector in Wukirsari, a target community of the MCA project, was a vulnerable sector. Most of the bamboo crafters had been badly affected by the earthquake, directly due to collapsed or damaged houses and indirectly through the sudden increase in the production input price.

Wukirsari is located in a rocky, arid and hilly area in the southern part of Yogyakarta Special Region. Therefore, the communities could not rely on bamboo crafting nor agricultural activities, which are typical livelihood activities for the area. The community had adopted other livelihood strategies to supplement their income, including inter-city trading (birds, traditional lamps, leather puppets, etc). These were mainly occupations for the males in the household, requiring them to leave their villages for several months at a time.<sup>10</sup> Family members who remain in the village relied on the remittances sent back by members engaged in inter-city trading. Earnings from the trading ventures were divided between funds sent to the village and costs incurred for conducting the trading business.

Given that cash flow from remittances tended to be volatile, most of the females in the households engaged in bamboo-crafting activities, where they made traditional products such as *kalo* and *tambir*.<sup>11</sup> Therefore, despite bamboo crafting not being the main source of income for almost all of the bamboo crafters, the existence and survival of this sector was vital to ensure regular cash flows to the households.

Fortunately, there were various opportunities for growth in this sector. The potential to harness a vast number of bamboo crafters for high production output was recognized. Also, there was high latent demand for bamboo weaving and bamboo weave-based products in the market. Based on discussions with communities and their recommendations, a draft project design was developed and work soon began.

### Repairing the damage

Damage to irrigation systems caused by the May 2006 earthquake in Yogyakarta and Central Java resulted in poor irrigation water supply during dry seasons. Moreover, flooding would negatively impact cultivated lands during subsequent rainy seasons. During the six months following the earthquake, widespread lack of irrigation led to substantial crop failures and lack of job opportunities for farm labourers.

Under its project, *Livelihood Sustainability for Victims of the Earthquake in Central Java*, IOM put in place a "System of Rice Intensification"

<sup>10</sup> On average, the duration of absence is between three months and six months. They return home and stay for approximately a month before leaving again.

<sup>11</sup> *Kalo* and *tambir* are traditional bamboo-weave baskets mostly utilized in daily cooking activities to put or clean vegetables, make coconut milk and others.

(SRI), which subsequently helped farmers to increase their production capacity, independent of external factors such as water, quality of soil, etc. The system efficiently uses scarce land, labour, capital and water resources, protects soil and ground water from chemical pollution, and is also accessible to poor farmers.

### *Sustainable agriculture: The only way to go*

More recently, in 2008, IOM helped to improve land use and soil conservation through organic farming. Through its project, *Yogyakarta and Central Java: Access to Finance and Capacity Building of Earthquake-Affected Micro and Small Enterprises*, cattle breeders in earthquake-affected Sumberharjo Village (Yogyakarta Province) have set up their own production of organic fertilizers for use in rice and other crop production, the major source of livelihood in the community.

While chemical fertilizers have a long-term adverse impact on living soil organisms and are detrimental to the long-term soil productivity of local farmland, organic fertilizers have the potential to improve the health and productivity of soil and plants, as they provide essential nutrients that encourage plant growth. **Notably, throughout the implementation of IOM's project, environmental impact assessments were conducted to identify, mitigate and manage the potential environmental impact of project activities.**

## Lessons Learned and Sustainability

### *Gaining from community involvement*

Local communities can provide invaluable contributions to the assessment and identification of hazards and risks. They have a good understanding of the surrounding environment and are keen to garner support as they learn how to structure local committees and groups to achieve improved levels of preparedness and response. Time should be dedicated to learning about community coping mechanisms, as opposed to enforcing external or conflicting approaches. There should also be a clear focus on grassroots capacity development of local institutions (health, education, civil society etc.). This includes co-establishing systems for local maintenance of equipment, fund-raising, and regular access to as well as institutionalization of training activities.

### *Conflict resolution*

There was latent conflict in one of the sub-villages in Wukirsari (Karang Talun), where previously ten households had received 15 million Indonesian rupiah as house reconstruction fund from another programme. Conflict arose when the rest of the community requested the ten households to allocate some of the funds received for house reconstruction to the sub-village cash funds. This was refused by the concerned households. As a result, the majority of the Karang Talun community refused to be involved in the bamboo-craft intervention if any of the ten households were included. Significant time and effort went into resolving this issue, including information gathering for a complete situation report and advocacy in the community. It shows the importance of dealing with possible resentment within communities and applying conflict resolution techniques.

### *Addressing vulnerability*

Results of assessments for the livelihood component of the MCA indicated that many of the potential beneficiaries were elderly (above 65 years old) and unable to read or write; some were handicapped. Many of the potential beneficiaries were also part of the poorer population of their communities. IOM attempted to address this issue to ensure that these vulnerable people did not fall through the cracks.

IOM achieved this by doing the following:

- A high weighting for household economic situation was included in the selection criteria.
- The illiterate were assisted with the administration requirements and during training sessions.
- Various methods and techniques were employed<sup>12</sup> to ensure that the illiterate were “not left behind”.
- Distribution points were made easily accessible to the elderly.
- A clear “no exploitation” policy was implemented, in terms of fees requested from any other member of the community or

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<sup>12</sup> Games, role play, small group discussions, multimedia, etc.

any authority. Steps taken included the distribution of “No Fee” posters, extensively socializing the complaints mechanism, and responding promptly to any complaints received.

### *Striving for sustainability*

In order to achieve sustainability, the team ensured that regular liaison was conducted with the beneficiaries. This activity intended to increase the community’s awareness, participation and sense of ownership of the programme itself. Moreover, at the early stage of programme implementation, field staff was equipped with basic skills and knowledge, especially on the sustainable livelihood framework.

### *Getting feedback*

IOM’s monitoring and evaluation unit conducted a beneficiary follow-up survey as part of the MCA, utilizing both the questionnaire and focus group discussion methodology to gather feedback from the communities involved in the programme. Based on the results, it appeared that the various interventions were having the right impact. However, it could not be determined at the time of the evaluation’s completion whether the outputs and outcomes achieved from this component of the MCA programme will lead to a sustainable impact. Uncertainty notwithstanding, IOM is confident that communities’ income-generating activities will be enhanced, if they continue to apply the additional skills and knowledge they received, fully utilize the tools and equipment provided to them and continue working together and with others.

## List of selected projects

Livelihood Sustainability for Victims of the Earthquake in Central Java

<b>Status</b>	Completed
<b>Project Period</b>	2007
<b>Beneficiaries</b>	1,045 persons
<b>Budget</b>	USD 394,250
<b>Donor</b>	Government of Queensland

### Mobile Community Assistance Programme (MCA)

<b>Status</b>	Completed
<b>Project Period</b>	May 2007 to December 2008
<b>Beneficiaries</b>	3,608 persons
<b>Budget</b>	USD 2,206,756
<b>Donor</b>	AusAID

### Yogyakarta and Central Java: Access to Finance and Capacity Building of Earthquake-Affected Micro and Small Enterprises

<b>Status</b>	Ongoing
<b>Project Period</b>	March 2008 to April 2010
<b>Beneficiaries</b>	1,281 persons
<b>Budget</b>	USD 4,484,000
<b>Donors</b>	Java Reconstruction Fund

# MYANMAR

## BASIC FACTS

**Total Area:** 676,552 sq km

**Population:** 47,967,000

**Gross Domestic Product (GDP) per capita PPP:** USD 1,027

**Net Migration Rate:** 0.3 migrants/1,000 population

**Annual Remittances:** USD 117 million]

Type of Event	Types of Movement	Types of Response
Cyclone	Internal displacement Returnees Protracted displacement	Disaster risk management Disaster risk reduction Durable solutions Health

After cyclone Narguis, family members work together to extend their new shelter in Pyapon, Myanmar. © IOM 2008



# Cyclone Nargis: Dealing with the Shock and the Aftermath

<b>Status</b>	Ongoing <sup>13</sup>
<b>Projects Period</b>	May 2008 to May 2010
<b>Total Beneficiaries</b>	585,025 households
<b>Combined Budgets</b>	USD 14.4 million
<b>Donors</b>	United Kingdom Department for International Development (DFID); United Nations Central Emergency Response Fund (UN-CERF); Government of Japan; Humanitarian Medical Assistance (HuMA); European Commission Directorate-General for Humanitarian Aid (ECHO); Embassy of Denmark; Chevron Corporation; Government of Switzerland (SDC/3DF); United States Agency for International Development (USAID) - Office of the United States Foreign Disaster Assistance (OFDA); AmeriCares; Municipality of Hyogo/Japan

## Environmental Challenges and Other Intervening Factors

### *An unprecedented disaster*

Cyclone Nargis hit Myanmar on 2 May 2008. Measured in terms of mortality, it is one of the most severe cyclones in recorded global history, resulting in at least 146,000 fatalities. Myanmar had not experienced a disaster of this scale in living memory. Nargis displaced thousands of people from their communities throughout Myanmar's Irrawaddy Delta and forced them to seek shelter and security elsewhere. Immediately after the cyclone, this resulted in the establishment of formal camps run by local authorities, hundreds of temporary settlements in schools, monasteries and churches, and numerous and widespread "spontaneous settlements". So-called "frontier camps", located in remote southern parts of the delta, were also established near destroyed villages and inhabited by survivors.

Though there are estimates on the number of people that have been affected by the cyclone (approximately 2.4 million), the total number of persons that have had to leave their communities due to the devastation caused by the cyclone is not known. Nonetheless,

<sup>13</sup> See project details at the end of the country section.

statistics were collected in the early concentration of displaced people in camps and settlements in the towns and larger villages of the delta. In the third week of May 2008, it was estimated that *at least* 260,000 internally displaced persons (IDPs) were living in hundreds of urban camps and rural settlements throughout the Irrawaddy Delta and Yangon Division, where they received basic services and assistance from the government, the private sector, UN agencies, and non-governmental organizations (NGOs).

Heavily-affected townships such as Labutta, Bogale, Myaungmya and Pyapon each hosted between 15 and 35 camps, with each camp often sheltering thousands of people. At the same time, significant numbers of people simply migrated to neighbouring rural village tracts to seek shelter with extended family, friends and neighbours. These people should also be counted among the displaced.

In early June 2008, with the start of the school year and the national referendum approaching,<sup>14</sup> local authorities began to shut down official camps and informal settlements. In this manner, virtually all camps and settlements were either dismantled or scaled down significantly such that by the end of June, only a few remained.

The majority of persons displaced moved outside their villages and have since returned. Another significant group of persons affected by post-Nargis displacement include those who had been displaced a short distance *within the boundaries of their villages* – so-called “intra-village IDPs”. A third, comparatively smaller sub-group of displaced persons include those who have not been able to return to their communities of origin following their displacement outside of their native village or village tract – due to trauma and memories of destruction, severe damage to their home villages, loss of productive assets, or the lack of resources to re-establish lives – and who remain displaced more than a year and a half after the cyclone.

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<sup>14</sup> A national referendum was held on 10 May 2008 with regard to the new constitution. In light of the devastation caused by cyclone Nargis in May, the decision of the government to push through with the referendum was met with criticism by organizations such as Amnesty International and the Western media.



## Programmatic Responses

### *Shelter provision: An ongoing effort*

At the request of the UN Humanitarian Coordinator, a Temporary Settlements Group (TSG),<sup>15</sup> chaired by IOM, was established to assist the Myanmar government in attending to the shelter needs of persons displaced by the disaster. As the largest shelter assistance agency in the Nargis response, IOM continues to provide partial as well as full shelter support to an estimated 60,000 households in four townships in the Delta. IOM and its partners have also responded to the immediate needs of cyclone survivors by distributing household items.

### *Health and psychosocial support to reconstruct life*

Medical aid included the deployment of IOM mobile medical teams by boat to provide primary health care services and health education to affected communities and displaced persons. Five temporary fixed medical facilities were also set up, equipped and staffed.

**Cyclone Nargis left behind many frightened survivors acutely aware of their own vulnerability.** Agencies implementing psychosocial activities report that, whereas the most frequent problem they were dealing with until July was shock, this has now evolved into significant anxiety about the prospect of another cyclone. Thus, IOM's post-Nargis health-related activities has included psychosocial support, an area often overlooked in emergency response initiatives, thereby ensuring a more comprehensive approach to service provision. To this end, IOM is the lead agency and chair of the Mental Health and Psychosocial Support Technical Working Group, and has trained over 38,000 community representatives in basic psychosocial concepts and response awareness.

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<sup>15</sup> For reasons pertaining to the then-perceived sensitivity of addressing "IDPs" and "camps" in Myanmar's political context, a decision was reached not to activate the Camp Coordination and Camp Management cluster.

### *Addressing protection issues and new needs*

Although the majority of persons affected by the cyclone were displaced within the boundaries of their own villages, their full recovery is constrained by new-found landlessness, reduced livelihoods and little certainty about the future. Alongside the evolution of the displacement situation in the months following Nargis, protection issues related to displacement in the delta came to the fore. One challenge is that a majority of IDPs displaced outside of their villages prefer to remain in their current location, which raises the issue of sustainable integration.

In response, IOM worked in partnership with the United Nations High Commissioner for Refugees (UNHCR) to establish the Vulnerability Network (VN) in the third quarter of 2008, to look into such questions along with other issues such as documentation, access to land, relocation, and the vulnerability of the elderly and the disabled. With the formal establishment of an all-inclusive Protection Cluster in December 2008, IOM and UNHCR are co-chairs of the Displacement, Land and Relocations Working Group. A recent initiative has been an in-depth assessment of the number of IDPs and returnees and their needs a year after the tragedy.

### *Lessons Learned and Sustainability*

#### *Helping communities to regain their autonomy*

While the beneficiaries appreciate the humanitarian aid they have received, they are at the same time adamant about returning to a self-sufficient lifestyle. Many potentially useful efforts and initiatives are currently underway to promote livelihoods, but these discussions have been fragmented among the humanitarian community. Therefore, improved communication to ensure a consolidated strategy is a pressing need.

#### *Cultural sensitivity*

IOM's response has been culturally sensitive. For example, the organization engaged Buddhist monks and community representatives to develop a psychosocial programme that is culturally specific and sensitive to the local context.

### Looking Ahead: Making DRR a Priority

In an inter-agency real-time evaluation (IA RTE) of the response to Cyclone Nargis on 17 December 2008, disaster risk reduction was found to be among the three issues that required particular attention, along with community consultation and restorations of livelihoods. The report states:

The disaster in the Ayeyarwady Delta was not just the cyclone, which is a natural event. The disaster was the preventable deaths and damage due to a lack of preparedness and disaster risk reduction (DRR).

It stressed that continued lack of preparedness and DRR means that communities remain vulnerable, both mentally and physically.

It is critical that the national government and international community support the development of a national DRR strategy for Myanmar, facilitating learning and technical expertise as appropriate. This strategy should have a robust community-level component and give priority to community consultations around DRR, not only to improve planning, but to help alleviate widespread psychosocial stress.

## List of Projects

### Rapid Delivery of Life-Saving Transitional Shelter and Non-Food Items to Survivors of Cyclone Nargis - Myanmar (LSNF)

<b>Status</b>	Completed
<b>Project Period</b>	May 2008 to July 2008
<b>Budget</b>	USD 1.2 million
<b>Donor</b>	UN-CERF

### Rapid Establishment of up to 10 Temporary/Emergency Primary Health Care Clinics in Priority Locations in the Irrawaddy Delta region

<b>Status</b>	Completed
<b>Project Period</b>	May 2008 to July 2008
<b>Budget</b>	USD 250,006
<b>Donor</b>	UN-CERF

### Emergency Health Assessment and Response for Victims of Cyclone Nargis

<b>Status</b>	Completed
<b>Project Period</b>	May 2008 to June 2008
<b>Budget</b>	USD 32,259
<b>Donor</b>	Embassy of Denmark

**Delivery, Supply and Installation of Pre-Fabricated Shelters, Water Purification Systems, and Emergency Medical Support in Myanmar**

<b>Status</b>	Completed
<b>Project Period</b>	May 2008 to February 2009
<b>Budget</b>	USD 400,000
<b>Donor</b>	Chevron Corporation

**Emergency Health Assessment and Response - Mon State / Ayeyarwady Divison**

<b>Status</b>	Completed
<b>Project Period</b>	June 2008
<b>Budget</b>	USD 62,060
<b>Donor</b>	Government of Switzerland (SDC/3DF)

**Reconstruction in Myanmar in Areas Affected by Cyclone Nargis (MAAC)**

<b>Status</b>	Completed
<b>Project Period</b>	May 2008 to June 2009
<b>Budget</b>	USD 3 million
<b>Donor</b>	Government of Japan

**Enhancing Primary Health Care Service Delivery in South West Bogale (Tabin Seik), Eastern Bogale (Amar) and Mawlamyinegyun Townships**

<b>Status</b>	Completed
<b>Project Period</b>	August 2008 to March 2009
<b>Budget</b>	GBP 428,891
<b>Donor</b>	DFID

**Shelter and Non-Food Items to Cyclone Affected Areas of Myanmar**

<b>Status</b>	Completed
<b>Project Period</b>	August 2008 to February 2009
<b>Budget</b>	GBP 500,000
<b>Donor</b>	DFID

**Rehabilitation of Rural Health Centres Affected by Cyclone Nargis, Ayeyarwady Region, Myanmar**

<b>Status</b>	Completed
<b>Project Period</b>	August 2008 to February 2009
<b>Budget</b>	USD 40,000
<b>Donor</b>	HuMA Japan

**Emergency Medical Referrals and Assisted Return Services for Cyclone-Affected Communities in the Ayeyarwady Delta Region**

<b>Status</b>	Completed
<b>Project Period</b>	August 2008 to November 2008
<b>Budget</b>	USD 300,000
<b>Donor</b>	UN-CERF

### Rapid Delivery of Life-Saving Non-Food Items to Survivors of Cyclone Nargis in Myanmar (LNFNI)

Status	Completed
Project Period	August 2008 to November 2008
Budget	USD 649,999
Donor	UN-CERF

### Project in Support of the Temporary Shelter Working Group (TSWG) and Secretariat

Status	Ongoing
Project Period	July 2008 to Dec 2009
Budget	USD 250,000
Donor	USAID-OFDA

### Enhancing Community Capacity for Psychosocial Response in the Ayeyarwady Delta

Status	Completed
Project Period	October 2008 to July 2009
Budget	GBP 400,000
Donor	DFID

### Cyclone Nargis Emergency Response - Supplemental Partner Request to Purchase 5 Boat Ambulances

Status	Completed
Project Period	August 2008 to February 2009
Budget	USD 15,000
Donor	AmeriCares

### Durable and Shelter and Livelihood Solutions for Displaces and Other Vulnerable Persons in Cyclone Affected Areas

Status	Ongoing
Project Period	March 2009 to May 2010
Budget	EUR 4,625,180
Donor	ECHO

### Pre-Monsoon Shelter Recovery

Status	Ongoing
Project Period	May 2009 to December 2009
Budget	USD 800,000
Donor	USAID-OFDA

### Rehabilitation of Rural Health Centres Affected by Cyclone Nargis, Ayeyarwady Region, Myanmar

Status	Ongoing
Project Period	June 2009 to February 2010
Budget	USD 216,554.62
Donor	Municipality of Hyogo /Japan

Livelihood and Shelter Recovery in the Ayeyarwady Delta, Myanmar

<b>Status</b>	Ongoing
<b>Project Period</b>	September 2009 to March 2010
<b>Budget</b>	GBP 500,000
<b>Donor</b>	DFID

# NEPAL

## BASIC FACTS

**Total Area:** 147,181 sq km

**Population:** 23,151,423

**Gross Domestic Product (GDP) per capita PPP:** USD 1,120

**Net Migration Rate:** -0.8 migrants/1,000 population

**Annual Remittances:** USD 1.617 billion

Types of Events	Types of Movement	Types of Response
Floods Landslides Food insecurity	Internal displacement International migration	Disaster risk management / Emergency response Cluster Disaster risk reduction/Disaster preparedness Durable solutions Climate change Adaptation

A large number of people were displaced in Nepal when the Koshi River flooded their homes in August 2008; in response, IOM activated the CCCM cluster. © IOM 2009 - MNPO182 (Photo: Kari Collins)



## Objective Durable Solutions: Keeping Track in the Midst of Disaster

<b>Status</b>	Completed and Project Proposal <sup>16</sup>
<b>Projects Period</b>	September 2008 to present
<b>Total Beneficiaries</b>	Up to 70,000 internally displaced persons (IDPs) affected by the flood and the surrounding communities; relevant government ministries and migrants in the agricultural sector
<b>Combined Budget</b>	USD 413,565
<b>Donors</b>	United States Agency for International Development (USAID) - Office of the United States Foreign Disaster Assistance (OFDA); United Nations Central Emergency Response Fund (UN-CERF); Food and Agriculture Organization (FAO)

### Environmental Challenges and Other Intervening Factors

#### *Floods and landslides: Hazards of the Himalayas*

Floods and landslides are the major seasonal disasters in Nepal and are linked to the clearing of forests, particularly in the hill areas. Climate change is expected to further exacerbate the frequency and intensity of flooding, as rains spread westwards across the country and snow and melting glaciers further swell rivers during the wet season.

Nepal is in the low human development<sup>17</sup> category with respect to most of the human development indicators, with over 80 per cent of its population surviving on less than USD 2 per day. The more than decade-long armed conflict resulted in the loss of thousands of lives, thousands of people displaced and living in vulnerable conditions, and substantial infrastructural damage.

Gender is one of the important vulnerability factors in Nepal. In 2003, only 33.8 per cent of females in the country were literate, compared to 64.5 per cent of males. Women own only 6 per cent of houses and 7 per cent of livestock. At the same time, as there is high migration of male members of the family from mountainous regions and rural areas to newly developed cities, women often become heads of households

<sup>16</sup> See project details at the end of the country section.

<sup>17</sup> More information available at [http://www.mdgmonitor.org/factsheets\\_00.cfm?c=NPL](http://www.mdgmonitor.org/factsheets_00.cfm?c=NPL)



in areas prone to flooding and particularly hard-hit during seasonal disasters. This can further increase women's vulnerability to the effects of natural disasters.

### *When the floodgates break loose...*

In August 2008, Nepal was once again hit by consecutive flooding in the eastern and western regions that affected more than 250,000 people. The flooding had severe adverse impacts on an already vulnerable population that endures floods and landslides annually: in 2007, for instance, 70,000 families in 47 districts were affected by such disasters.

In the eastern part of the country, 70,000 persons were affected in the districts of Sunsari and Saptari, when the Koshi River, Asia's largest river basin, broke a retaining wall on 18 August 2008 and washed away the villages in its course. The force of the water was so strong that the river's course changed almost completely, rendering parts of the flooded areas completely inaccessible. As a result, six months after the flood, 25,000 people were still staying in camps and camp-like environments.

### IOM Programmatic Responses

As a response to the disastrous situation in Eastern Nepal, the Camp Coordination and Camp Management (CCCM) cluster,<sup>18</sup> under IOM's leadership, was immediately activated as part of the coordinated humanitarian response of the UN, the Red Cross and Red Crescent Movement, NGOs and other humanitarian actors. IOM's role as CCCM cluster lead entailed significant responsibilities during the ten-month emergency period. During the project, IOM was responsible for a range of activities, from site planning to the procurement and distribution of non-food items (NFI).

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<sup>18</sup> The Cluster Approach was proposed by the **Inter-Agency Standing Committee (IASC)** in the 2005 Humanitarian Response Review as a way of addressing gaps and strengthening the effectiveness of humanitarian response through building partnerships and clarifying roles and responsibilities of organizations within the different sectors of humanitarian response. Global cluster leads have been designated in 11 areas of humanitarian activity. At the global level, IOM leads the Camp Co-ordination and Camp Management (CCCM) Cluster for Natural Disasters and actively participates in the Logistics, Early Recovery, Health, Emergency, Shelter and Protection Clusters.

Some key initiatives were implemented as follows:

### *Identifying the victims to offer durable solutions*

A major challenge from the beginning of the Koshi flooding response was the identification and registration of displaced persons. IOM as the CCCM cluster lead and with its prior global experience in registration programmes, undertook the task of tracking IDPs in Sunsari and Saptari district immediately after CCCM cluster's activation in September. The Displacement Tracking Matrix (DTM) was constructed for the first time in Nepal to provide all humanitarian agencies information on the existing situation and gaps at camp level (including all planned camps, collective centres and spontaneous camps).

During the emergency period, tracking IDP movements was particularly challenging due to secondary and tertiary displacement of IDPs from collective centres to spontaneous camps, formal camps and self-settled return areas. However, DTM helped in generating effective response from the humanitarian agencies engaged in Koshi relief work. Humanitarian agencies were able to equitably distribute resources and provide timely assistance to all displaced persons based on the weekly update. Results were also shared with all relevant government agencies and other partners.

### *Assessing the situation to respond to immediate and long-term needs*

Various assessments at camps and return areas were conducted to provide protection to IDPs vulnerable to flood, health hazards and sanitation issues. The camp hazard assessment was carried out in flood-prone camps and camps vulnerable to water-borne diseases before the onset of monsoon season. The aim of the assessment was to ensure that adequate protection measures were taken. The relocation assessment was conducted in order to identify IDP camp occupancy and possible return options.

IOM also undertook an assessment that provided a number of details such as the socio-economic status and land ownership information of IDPs, which formed an important basis for the early recovery and rehabilitation phase. After the completion of verification, pink

slips were distributed to all legitimate IDPs, granting them access to the return packages from the Government of Nepal. Besides return packages, the government designed various compensation schemes for the IDPs according to their place of origin and the level of damage their homes, crops and land had sustained.

### *Disaster preparedness initiatives*

An important task for the CCCM cluster is to support the authorities and all the relevant stakeholders in capacity building for disaster risk reduction (DRR), using the experience acquired in addressing previous emergencies. In light of the cumulative vulnerabilities and likely recurrence of disasters,<sup>19</sup> this focus is crucial for developing long-term solutions, which would contribute to sustainable development. Disaster preparedness initiatives were therefore built into the emergency and early recovery response.

To generate local human resources, capacity-building training and “training of trainers” sessions were conducted with the Nepalese authorities and relevant stakeholders. Topics included CCCM, Humanitarian Response in Emergencies, Shelter and Settlement Planning, as well as the Sphere Standards<sup>20</sup> to ensure a consolidated response in the advent of new disasters in the region.

IOM has also constructed and staffed an Emergency Operations Centre (EOC) in the flood-affected region to ensure that a consolidated response effort is coordinated and managed by the Government of Nepal in a centralized location. It is anticipated that the capacity-building training on disaster preparedness and the establishment of the EOC will ensure a more consolidated response in the event of a disaster.

<sup>19</sup> The Sunsari and Saptari districts are vulnerable to numerous forms of natural disasters. Trends indicate that floods are the most likely to affect these districts on a yearly basis until the dam and barrage are correctly managed, taking into account the impact of climate change on precipitation patterns and the melting of glaciers.

<sup>20</sup> The Sphere Project was launched in 1997 by a group of humanitarian NGOs and the International Red Cross and Red Crescent Movement. The Sphere Humanitarian Charter and Minimum Standards in Disaster Response sets out to improve the quality of assistance provided to people affected by disasters, and enhance the accountability of the humanitarian system in disaster response. Available at <http://www.sphereproject.org/>

## Lessons Learned and Sustainability

### *Cooperation with the authorities to address lack of preparedness*

While government agencies and the international community responded quickly and positively to the emergency, in the absence of appropriate facilities and basic infrastructure for IDPs, providing assistance on the ground was problematic. The government quickly realized that the planning, consultation, coordination, and management skills they were lacking were essential for ensuring protection of the affected population and for the effective delivery of aid. The international community was therefore called upon to intervene in both areas by providing immediate assistance and assisting in better planning for future disasters. The cooperation established with the authorities is key to the timely delivery of humanitarian assistance and the planning of durable solutions.

### *Rebuilding local coping capacity*

**Beyond immediate assistance and protection, camps provide a stable environment to allow indigenous coping mechanisms to be progressively re-established, which can significantly** facilitate a safe, voluntary, orderly, and dignified return process.

### *Ensuring adherence to standards*

The CCCM cluster helped to provide protection and assistance to IDPs by ensuring that the set-up and administration of the camps was in line with international guidelines and technical standards for relief assistance, such as those developed under the Sphere project. These guidelines were incorporated into training, and in particular allowed implementing agencies to gain an understanding of the importance of identifying appropriate site locations that would not only protect IDPs from hazards but also minimize the negative impact camps can have on the immediate environment. The guidelines also clarified how facilities such as sanitation should be provided in camps, self-settled and assisted return areas.

## The Way Forward...

Nepal is an agricultural country, with around 78 per cent of its population dependent on agriculture for livelihood. Most households in rural Nepal depend on subsistence agriculture and face problems of inadequate food supply, a problem that climate change is exacerbating. Population growth, coupled with low agricultural productivity, has caused people to migrate in order to make ends meet.

The Food and Agriculture Organization (FAO) is working with the Ministry of Agriculture in Nepal to develop a National Medium Term Priority Framework (NMTPF). IOM and FAO have agreed to conduct a rapid assessment to look at the issues, challenges and gaps pertaining to overseas employment and agriculture. The rapid assessment could provide input to the FAO/Government of Nepal NMTPF process, as well as assist IOM in conducting research and designing relevant programmes.

IOM intends to conduct the rapid assessment to look at key issues involving agricultural migrant workers and overseas employment, with a view to helping policy formulation and programme development in Nepal. The output of the study will serve as an input to the NMTPF, as well as serve as basic information material for further research and future project development.

## List of Projects

### Koshi Flood Response in Nepal

<b>Status</b>	Completed
<b>Project Period</b>	September 2008 to June 2009
<b>Beneficiaries</b>	Up to 70,000 IDPs affected by the flood and the surrounding communities
<b>Budget</b>	USD 200,000
<b>Donor</b>	USAID-OFDA

### Koshi Flood Response in Nepal II

<b>Status</b>	Completed
<b>Project Period</b>	September 2008 to December 2008
<b>Beneficiaries</b>	42,807 individuals
<b>Budget</b>	USD 200,020
<b>Donor</b>	UN-CERF

### A Rapid Situation Assessment on Agriculture and Migration in Nepal

<b>Status</b>	Project Proposal
<b>Project Period</b>	N/A
<b>Expected Beneficiaries</b>	Ministry of Labour and Transport Management, Ministry of Agriculture and Potential Migrants in the Agricultural Sector
<b>Proposed Budget</b>	USD 13,545
<b>Potential Donor</b>	FAO

# PAKISTAN

## BASIC FACTS

**Total Area:** 796,095 sq km

**Population:** 158,081,000

**Gross Domestic Product (GDP) per capita PPP:** USD 2,225

**Net Migration Rate:** -2.4 migrants/1,000 population

**Annual Remittances:** USD 4.3 billion

Types of Events	Types of Movement	Types of Response
Earthquakes Floods Complex emergencies	Internal displacement Returnees	Disaster risk Management/ Emergency response Cluster Disaster risk reduction

First aid training of school children by Rapid Response Teams in Sirran Valley, Pakistan Administered Kashmir, after the October 2005 devastating earthquake. © IOM 2006



<b>Status</b>	Ongoing <sup>21</sup>
<b>Projects Period</b>	Present
<b>Total Beneficiaries and Outcomes</b>	100,000 families, 76,600 internally displaced persons (IDPs), 167 health houses and facilities
<b>Combined Budget</b>	Over USD 48 million
<b>Donors</b>	Governments of Australia, Austria, Canada, Greece, Japan, Korea, Germany, Ireland, Norway (through UNDP), Saudi Arabia, Sweden and Turkey; Swedish International Development Cooperation Agency (SIDA); UK Department for International Development (DFID); United States Agency for International Development (USAID) - Office of the United States Foreign Disaster Assistance (OFDA); Private contributions; European Union; American International Group Disaster Relief Fund (AIG DRF); UN Central Emergency Relief Funds (UN-CERF); United Nations Office for Coordination of Humanitarian Affairs (OCHA); United Nations Development Programme (UNDP); United Nations Population Fund (UNFPA); United Nations Human Settlements Programme (UN-HABITAT); United Nations High Commissioner for Refugees (UNHCR); World Food Programme (WFP)

## Environmental Challenges and Other Intervening Factors

### *Earthquakes 2005 and 2008: Displacing millions*

A major earthquake struck northern Pakistan on 8 October 2005. Official figures from the Pakistan government showed that over 73,000 people died, 70,000 were left severely disabled and 2.8 million people were left without shelter. Similarly, on 29 October 2008, an earthquake of magnitude 6.4 on the Richter scale hit the Balochistan province in south-western Pakistan. The worst-hit areas included the villages of Khanozai and Topa Achakzai in eastern Pishin and Wachun Kawas village in District Ziarat.

Both earthquakes inflicted heavy damages, including losses to business and agriculture. The loss of employment and lack of social safety nets placed many families in precarious positions. The environment was exposed to an unprecedented demand for natural resources for survival and reconstruction. In urban areas, highly sodic<sup>22</sup> rubble with hazardous waste buried underneath posed serious environmental and health threats. Additionally, scarred land used for hosting IDP camps

<sup>21</sup> See project details at the end of the country section.

<sup>22</sup> Relating to or containing sodium.

required major rehabilitation once people returned to their places of origin.

### *Cyclone 2007: Caught in a whirlwind*

Intense storms and a major cyclone caused severe flooding across Pakistan in June 2007. The floods affected over 2.3 million people, leaving 324 people dead and over 377,000 displaced. The annual monsoon caused flooding across large areas of southern Pakistan, mainly in the Balochistan and Sindh provinces. The situation worsened when Cyclone Yemyin made landfall on 26 June 2007, wreaking further havoc in Balochistan. The rains continued through July, and the flooding spread to 18 districts in Balochistan and five districts in Sindh.

### *An ongoing complex emergency*

In 2009, the military operation which started against militants in North Waziristan escalated into a large-scale counter-insurgency operation that destabilized the Federally Administered Tribal Areas (FATA) and spilled over to the adjoining regions of the North-West Frontier Province (NWFP), especially Malakand, Dir, Buner and Swat, resulting in the displacement of 2.6 million individuals, or approximately 382,950 families.

The Pakistan Army has begun to stabilize affected districts of NWFP, leading to the return of 1.65 million individuals to Buner, Swat and Lower Dir. However, displacement is still taking place. As recently as September 2009, approximately 128,262 individuals from South Waziristan and 100,000 individuals from Khyber Agency were forced to flee to safer areas owing to ongoing military action.

Humanitarian operations continue to focus on providing relief assistance to IDPs in the camps and host communities, while simultaneously planning for early recovery and reconstruction in areas of return. The immediate environmental impacts of the crisis include:

- debris from damaged buildings and landslides;
- wastewater and industrial effluents;
- unexploded ordnance;
- forest destruction;
- animal carcass.



## IOM Programmatic Responses

Following the devastating events in 2005 (earthquake), 2007 (cyclone) and 2008 (earthquake) and as a result of the current conflict, IOM has responded and continues to do so to meet the urgent needs of affected populations in Pakistan. **IOM's response in Pakistan looks at the entire migration crisis management cycle, from managing displacement to mitigating its impact and addressing long-term needs, as well as preventing displacement and better preparing for it.** Actions range from conducting baseline assessments immediately following the emergency to thinking about the long-term needs for disaster risk reduction (DRR).

### *Sent to the scene for timely delivery*

Immediately after Cyclone Yemyin and flash floods hit Balochistan and Sindh in 2007, IOM established a rapid distribution response, conducted rapid assessment and coordinated the response collection system in the flood-affected areas of Pakistan on the request of the National Disaster Management Authority (NDMA). Rapid Disaster Response Teams were deployed to the affected provinces (2 teams in Balochistan and 2 teams in Sindh) to spearhead ground logistics needs assessments, establish logistic networks, and coordinate distribution and monitoring facilities to cover the vast geographic areas that were targeted for assistance.

### *Providing basic material goods*

Following the cyclone in 2007, the Camp Coordination and Camp Management (CCCM)<sup>23</sup> cluster, led by IOM, assisted displaced communities and vulnerable beneficiaries by providing non-food items (NFIs) such as hygiene kits, kitchen sets, jerry cans, buckets, shelter

<sup>23</sup> The cluster approach was proposed by the **Inter-Agency Standing Committee (IASC)** in the 2005 Humanitarian Response Review as a way of addressing gaps and strengthening the effectiveness of humanitarian response through building partnerships and clarifying roles and responsibilities of organizations within the different sectors of humanitarian response. Global cluster leads have been designated in 11 areas of humanitarian activity. At the global level, IOM leads the Camp Co-ordination and Camp Management (CCCM) Cluster for Natural Disasters and actively participates in the Logistics, Early Recovery, Health, Emergency, Shelter and Protection Clusters.

kits. It also provided and transported clean drinking water, repaired and reactivated damaged water purification facilities, and installed shallow hand pumps and sanitation facilities in most affected districts of Balochistan and Sindh.

**In response to the 2005 earthquake, IOM's individual contribution to emergency shelter and winterization of tents included the provision of 23,312 tents, 28,928 shelter kits, 58,392 winterization kits, 178,867 blankets, 838,883 quilts and 231,424 tin sheets. IOM's logistics operation eventually comprised 5,241 convoys carrying a total of 20,964 tons of NFIs and shelter materials for 56 international and local aid agencies, including the UN, from Islamabad, Lahore and Karachi to often remote, high-altitude quake-affected areas.**

The complex emergency beginning in 2009 spurred IOM to oversee the procurement and distribution of 30,000 NFI kits, 5,000 tents and 22,000 jerry cans to IDPs residing in various camps, as well as the procurement and storage of 1,200 NFI kits as contingency measure for displacement in Waziristan. Ongoing activities include the distribution of 1,550 shelter kits for IDPs in host families in Lower Dir.

### *Removing the rubble and rebuilding communities*

The earthquake in 2005 left Muzaffarabad, the capital of Pakistan-administered Kashmir, a sea of rubble and damaged buildings. In April 2006, IOM launched a rubble removal programme to help the local authorities remove approximately 16 million cubic feet of debris from the city.

By the end of November 2006, more than 8.5 million cubic feet of rubble was removed by the project, which employed some 350 labourers, 50 tractor trolleys, eight dump trucks and a number of heavy earth-moving machinery. The programme restored road access and allowed people to start rebuilding their homes and businesses and stay, instead of migrating to non-affected areas. At the dumping site for rubble in Makri area of Muzaffarabad, IOM later built a public park with a jogging track and children's playing area. The park has become a favourite place for the locals.

### *Proving and improving on shelter provision*

In order to meet the housing needs of the urban population affected by the 2005 earthquake, work on a medium-term shelter in the Chehla Bandi area of Muzaffarabad commenced in April 2007. The project's target was to construct 1,200 medium-term shelters for those who were unable to build their permanent houses in areas categorized as hazard zones. All 1,200 shelters were built and handed over to beneficiaries, providing them with short-term, earthquake-resistant housing solutions. The shelter project was successfully completed by the end of June 2008. IOM also completed another medium-term shelter project in Pakistan-administered Kashmir in April 2009. Under the programme, 600 shelters were constructed in Muzaffarabad for vulnerable families.

In response to the 2007 cyclone, IOM received funding through the Shelter Cluster for under-funded flood emergencies. IOM and its partners delivered 2,400 shelter kits to the most vulnerable families in Kamber Shadadkot, prioritizing families without shelter, families living in basic shelter constructed from vegetation (basic sheds), and families living in significantly deteriorated shelters or families living with host families.

In 2008, based on its experience and institutional knowledge as Emergency Shelter Cluster lead during the Pakistan earthquake of 2005, IOM drafted the Winterized Shelter Strategy and, together with UN-HABITAT, designed a transitional shelter for earthquake-affected people. IOM constructed 30 model shelters in the most affected areas, refining and fine-tuning the design based on community and partner organization feedback to prepare for more substantial intervention from the Emergency Shelter Cluster that shortly followed.

### *Assisting in the return*

Following the 2005 emergency, from March through August 2006, IOM provided medical screening and transport to help some 76,000 displaced people or 16,000 families who returned home from displacement camps. The programme helped to relocate over 500 families from "red zones" threatened by landslides and flooding during the monsoon.

### *Creating an infrastructure to support disaster response*

In September 2006, IOM launched a six-month disaster preparedness programme to establish 11 trained and equipped Rapid Response Teams and support hubs in earthquake-affected areas during winter 2006-2007. During the course of the project, the Rapid Response Teams saved hundreds of lives, provided quick and adequate relief to thousands of affected people, and trained thousands of people, including at-risk communities, government and NGO officials, in disaster preparedness response.

### *Passing along knowledge in earthquake-proof construction*

Following the 2005 earthquake, IOM completed permanent shelter reconstruction training in 47 IDP camps to increase displaced persons' awareness of earthquake-resistant reconstruction techniques and guidelines set by the Earthquake Reconstruction and Rehabilitation Authority (ERRA). IOM teams of master trainers in carpentry, masonry and steel-fixing also provided five days of expert training to craftsmen.

In April 2007, IOM opened a Housing Reconstruction Centre (HRC) in the Abbottabad district of NWFP to provide training to help people who had been affected by the earthquake to rebuild earthquake-resistant houses in rural areas. The HRC provided technical assistance to help home owners reconstruct or repair their damaged houses and increase their awareness of safe rebuilding techniques.

## Lessons Learned and Sustainability

### *Coordination, coordination and coordination*

In any event warranting emergency action, coordination amongst the humanitarian actors serves as the key in designing a strategic response. IOM has actively participated in the cluster system of coordination ever since its inception at the field and the central level. With its extensive experience in providing emergency and transitional shelter solutions, IOM led the Emergency Shelter Cluster in the aftermath of the earthquake in 2005 and Cyclone Yemyin in 2007, whilst ensuring consistent membership of the Camp Coordination and

Camp Management, Protection, Logistics and Early Recovery clusters during every emergency after 2005. Active participation in the clusters led to better coordination within the humanitarian community and the government, along with timely identification of gaps in humanitarian assistance.

### *Retaining knowledge and know-how: Institutional memory*

The emergency response unit set up in 2005 expanded further and tackled a number of emergencies following the earthquake that occurred in the same year with increasing professionalism, building on contacts and understanding developed with the government and the military. In addition, proper measures were taken to establish a repository of project documents, tracking sheets, progress reports, lesson learnt documents, etc.

### *Long-term solutions start with disaster risk management*

Certain interventions like the deployment of Rapid Response Teams led to enhanced disaster response, updated needs assessment, confidence building and establishing of linkages within communities. This proved useful during project implementation as well as contributed to the long-term community rapport established in affected areas.

### *Contacts and linkages with local partners and NGOs*

Local NGOs not only serve as important partners in project implementation but also act as first-hand sources of information and mobilization in case of later emergencies. In order to maintain broad and effective outreach across the widespread hazard risk zones of Pakistan, associations with local partners are extremely useful.

## List of Projects

### Emergency Pakistan Earthquake Shelter Assistance.

<b>Status</b>	Completed
<b>Project Period</b>	October 2005 to April 2006
<b>Total Outcomes</b>	23,312 tents; 28,928 shelter kits; 58,392 winterization kits; 178,867 blankets; 838,883 quilts and 231,424 tin sheets
<b>Combined Budgets</b>	USD 21 million
<b>Donors</b>	Governments of Australia, Canada, Japan, Ireland, Germany, Greece, Norway (through UNDP), South Korea and Turkey; SIDA; DFID; Private contributions; EU; UNDP, USAID; AIG DFR

### Support Shelter Needs for the Urban Displaced

<b>Status</b>	Completed
<b>Project Period</b>	December 2007 to December 2008
<b>Beneficiaries</b>	600 Families
<b>Budget</b>	USD 3,060,000
<b>Donor</b>	Government of Saudi Arabia

### Reconstruction of Health Facilities in EQ-Affected Areas, Installation of Prefabricated Health House Structures in EQ-Affected Areas

<b>Status</b>	Completed
<b>Project Period</b>	April 2007 to December 2007
<b>Outcomes</b>	17 health facilities and 150 health houses
<b>Budget</b>	USD 939,751
<b>Donor</b>	UNFPA

### WFP-Logistics Support

<b>Status</b>	Completed
<b>Project Period</b>	January 2006 to April 2006
<b>Outcomes</b>	Free trucking services to 56 agencies for 5,241 convoys carrying 20,964 tons to earthquake-affected destinations; additionally, 406 4x4 pickup trucks daily from IOM's five sub-offices to deliver more than 609 tons of relief items to beneficiaries in high altitudes or where there is no road access for trucks
<b>Budget</b>	USD 990,000
<b>Donor</b>	WFP

### Return Programme for IDPs

<b>Status</b>	Completed
<b>Project Period</b>	April 2006 to August 2006
<b>Beneficiaries</b>	Medical screening and transport of 76,000 IDPs; relocation of over 500 families from "red zones" threatened by landslides and flooding during the monsoon
<b>Budget</b>	USD 2,252,213
<b>Donor</b>	UNHCR

### Rubble Removal in Muzaffarabad-Pakistan

Status	Completed
Project Period	April 2006 to June 2007
Outcomes	Removal of 16 million cubic feet of debris
Budget	USD 950,000
Donor	USAID

### Residual IDP Registration & Constraints Survey

Status	Completed
Project Period	June 2006 to July 2006
Beneficiaries	5,900 families
Budget	USD 201,999
Donor	OCHA

### Rapid Disaster Preparedness and Response Team

Status	Completed
Project Period	September 2006 to May 2007
Outcomes	Strengthened disaster relief and response capacities across earthquake-affected areas of NWFP and Pakistan-administered Kashmir
Budget	USD 1,016,627
Donor	AIG DRF

### Shelter & NFI Coordination & Distribution in Pakistan

Status	Completed
Project Period	December 2006 to November 2007
Budget	EUR 700,000
Donor	Government of Ireland

### Pakistan Post-Earthquake Shelters

Status	Completed
Project Period	December 2006 to April 2009
Beneficiaries	1,200 families
Budget	USD 6,089,596
Donor	SIDA

### Housing Reconstruction Centre Abbottabad

Status	Completed
Project Period	May 2007 to May 2008
Budget	USD 151,935
Donor	UN-HABITAT

### Support Implementation of the MCRAM - Thatta

<b>Status</b>	Completed
<b>Project Period</b>	July 2008 to September 2008
<b>Beneficiaries</b>	14 villages
<b>Budget</b>	USD 20,666
<b>Donor</b>	UN-CERF

### Needs Assessment: Flood & Conflict Hit Population - NWFP

<b>Status</b>	Completed
<b>Project Period</b>	August 2008 to September 2008
<b>Beneficiaries</b>	70 communities
<b>Budget</b>	USD 36,036
<b>Donor</b>	UN-CERF

### Needs Assessment: Conflict-Hit Population - NWFP

<b>Status</b>	Completed
<b>Project Period</b>	October 2008 to November 2008
<b>Outcomes</b>	12 camps
<b>Budget</b>	USD 36,036
<b>Donor</b>	UN-CERF

### Procurement & Distribution of NFIs & Portable Water-Flood Affected Population

<b>Status</b>	Completed
<b>Project Period</b>	July 2007 to October 2007
<b>Beneficiaries</b>	7,500 Families
<b>Budget</b>	USD 593,850
<b>Donor</b>	UN-CERF

### Pakistan Flood Response

<b>Status</b>	Completed
<b>Project Period</b>	July 2007 to March 2008
<b>Beneficiaries</b>	2,300 Families
<b>Budget</b>	USD 517,496
<b>Donor</b>	UN-CERF

### Support to Conflict IDPs of NWFP & FATA

<b>Status</b>	Completed
<b>Project Period</b>	May 2009 to December 2009
<b>Beneficiaries</b>	Approximately 30,000 families
<b>Budget</b>	USD 4,880,925
<b>Donor</b>	OFDA



## Shelter Support for IDPs

<b>Status</b>	Ongoing
<b>Project Period</b>	July 2009 to December 2009
<b>Beneficiaries</b>	Ongoing; 1,580 families to date
<b>Budget</b>	USD 643,500
<b>Donor</b>	SIDA

## Enhanced Surge Capacity for Responding to Natural Disasters

<b>Status</b>	Ongoing
<b>Project Period</b>	August 2009 to April 2011
<b>Budget</b>	USD 300,000
<b>Donor</b>	OFDA

## Security Awareness Induction Training

<b>Status</b>	Ongoing
<b>Project Period</b>	November 2008 to present
<b>Budget</b>	USD 1,424,981
<b>Donor</b>	Cost Recovery

## Distribution of NFI (Tool Kits) in Buner District NWFP

<b>Status</b>	Ongoing
<b>Project Period</b>	August 2009 to present
<b>Beneficiaries</b>	57,700 families
<b>Budget</b>	USD 2,000,000
<b>Donor</b>	OFDA

## Strategic Mass Communication

<b>Status</b>	Ongoing
<b>Project Period</b>	June 2009 to present
<b>Beneficiaries</b>	All inhabitants of affected districts
<b>Budget</b>	USD 186,000
<b>Donor</b>	USAID Office of Transition Initiatives

# PHILIPPINES

## BASIC FACTS

**Total Area:** 299,764 sq km

**Population:** 84,566,000

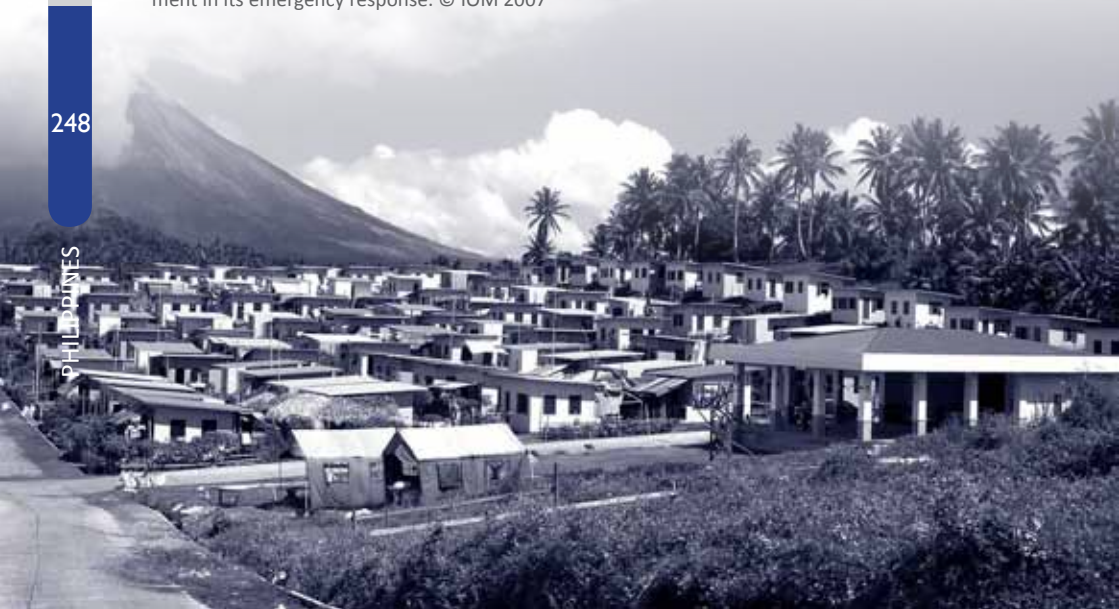
**Gross Domestic Product (GDP) per capita PPP:** USD 4,614

**Net Migration Rate:** -2.3 migrants/1,000 population

**Annual Remittances:** USD 13.6 billion

Types of Events	Types of Movement	Types of Response
Cyclones	Internal displacement Voluntary relocation Returnees	Disaster risk management/ Emergency response Cluster Disaster risk reduction Reconstruction Capacity building Community stabilization and livelihoods

Permanent shelter units in the Bicol region constructed after typhoon Durian brought devastation to the region. IOM supported the Philippine Government in its emergency response. © IOM 2007



# Bicol Emergency Response and Community Development Programmes

<b>Status</b>	Completed <sup>24</sup>
<b>Projects Period</b>	December 2006 to July 2008
<b>Total Beneficiaries and Outcomes</b>	30,224 families, 6 health centres constructed
<b>Combined Budgets</b>	USD 6 million
<b>Donors</b>	United Nations Central Emergency Response Fund (UN-CERF), European Commission Directorate-General for Humanitarian Aid (ECHO), United Nations Development Programme (UNDP), United States Agency for International Development (USAID), United Nations Population Fund (UNFPA)

## Environmental Challenges and Other Intervening Factors

### *Between Scylla and Charybdis: A multi-hazard location*

The Philippines, because of its geographical location, is particularly vulnerable to natural hazards. Located within what has been termed the “Pacific Ring of Fire,” the Philippines is prone to earthquakes and volcanic eruptions. The occurrence of tropical cyclones is not uncommon, as nearly one-third of the world’s tropical cyclones form in the Western Pacific region. The tropical storm Ondoy (Ketsana), which swept across Metro Manila and parts of Central Luzon on 26 September 2009, is reported to have affected over 2.5 million people, with 298 reported dead. Due to heavy flooding, 80 per cent of Manila, which is home to 12 million people, was under water.

The country’s vulnerability is further compounded by socio-economic challenges such as poverty, which reached 26.9 per cent in 2006. Poor households tend to be more dependent on ecosystems and have lower resiliency against natural disasters.

The Bicol region in Luzon is one of the most vulnerable regions in the Philippines. In a hazard mapping report released by the Manila

<sup>24</sup> See project details at the end of the country section.

Observatory in 2006, four of the region's six provinces are ranked as "at most risk" to climate- and weather-related risks. At the same time, the National Statistics Coordination Board reported the Bicol Region as the region with the fourth-highest poverty incidence in the country (41.8%).

Typhoon Durian (Reming) hit Catanduanes, an island-province in the Bicol Region, on 30 November 2006. Durian proceeded west on 1 December 2006, causing widespread destruction predominantly linked with mudflows and landslides in Catanduanes and Albay provinces. As of 7 December 2006, the Philippine Government reported 590 people dead, with some 749 missing and 1,995 injured. A total of 2.19 million people (458,632 families) were affected in 148 municipalities and 12 cities across 13 provinces. About 114,446 houses were reported to have been totally destroyed while 197,543 houses were partially damaged. Some 20,788 families (101,000 people) sought refuge in 338 evacuation centres.

Emergency relief needs identified by the United Nations Country Team's (UNCT) needs assessment included: food and non-food items (NFIs), potable water, medical and hygiene kits, as well as emergency shelter in the form of individual household tents.

## IOM Programmatic Responses

### *Providing immediate assistance*

Following the devastation caused by typhoon Durian, IOM supported the Philippine Government in its emergency response, providing immediate response assistance by providing transport and logistic support and distributing emergency shelter and NFIs. Additionally, IOM assisted the Philippine authorities in establishing monitoring, inventory and evaluation systems.

### *Not enough space*

Three months after Durian, the Philippine government continued its efforts towards permanent relocation by identifying 11 permanent

relocation sites, and committing to construct 4,100 permanent core shelters. In addition to core shelter commitments from other agencies, there were a total of 22,230 permanent core shelter units to be built. From the 312,000 houses that had been totally destroyed, there remained an assumed permanent shelter need of 289,770.

While fully supportive of permanent relocation initiatives, IOM also acknowledged the importance of addressing the affected population's interim needs (pending the move to permanent sites). A major issue was overcrowding in the temporary shelters. Months following the disaster, residual humanitarian needs were felt in cramped evacuation and transit sites (including schools) that served as temporary homes for internally displaced persons (IDPs). Due to poor conditions, many families moved out to seek better accommodations in empty lots or with host families. These IDPs continued to have access to relief aid being accounted for during distribution schedules.

The most apparent challenge was how to move towards decongesting IDP sites, when there was lack of land for a transit site and when the efforts of the local authorities (as well as their funding situation) were focused and earmarked for permanent relocation. As of April 2007, 2,071 IDP families (approximately 10,355 people) were residing in cramped conditions in 15 transit and evacuation sites in Albay. These families had no idea how long they would have to remain in such conditions. The IDPs continued to stay in schools, affecting the education of students in these schools.

In recognition of this problem, IOM worked in cooperation with the UNDP, UN-HABITAT, and the City Government to identify more sites for transit centres and construct more such shelters. IOM worked with communities to prepare them for the relocation and also engaged with local authorities and organizations in capacity-building activities. On the more technical side, IOM helped to meet the challenge of identifying and negotiating transit-land use, assisted with transit-site preparation activities, undertook the procurement of shelter materials and oversaw the construction of temporary shelter units.

## *Early recovery and community development initiatives*

IOM assisted in early recovery and community development through the construction of community centres and health facilities. Upon the request of UNFPA, and in coordination with the Provincial Government of Catanduanes and the Provincial Health Office, IOM constructed *barangay*<sup>25</sup> health facilities in Catanduanes within the framework of UNFPA's disaster management programme.

Furthermore, **legal clinics that had been set up helped to safeguard the beneficiaries' rights and provide general legal assistance to strengthen the rule of law.** Other pro-active IOM services accompanying the reconstruction process include orientation, consultations, training and event preparation, medical missions and food security and livelihood enhancement exercises, such as vegetable-seed distribution and organic farming seminars.

## Lessons Learned and Sustainability

### *Disaster proofing*

All projects in the residual relief and community development stage were designed to complement longer-term community development strategies, community empowerment and disaster preparedness. For example, shelters underwent typhoon-resistant modifications during the response efforts to Cyclone Dorian. Here it can be seen that disaster risk reduction efforts were incorporated into disaster risk management activities to ensure sustainability.

### *Information sharing*

As the lead organization in the Camp Management and Coordination Cluster,<sup>26</sup> IOM conducts periodic assessments and collates information

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<sup>25</sup> A *barangay* is the smallest administrative division in the Philippines and is the native Filipino term for a village, district or ward.

<sup>26</sup> The Cluster Approach was proposed by the **Inter-Agency Standing Committee (IASC)** in the 2005 Humanitarian Response Review as a way of addressing gaps and strengthening the effectiveness of humanitarian response through building partnerships and clarifying roles and

gathered by other members of the cluster regarding the status and needs of IDPs residing in transit sites. The general assessment is fed back to implementing organizations. This sharing of information has proven beneficial for all organizations in fulfilling their responsibilities to address humanitarian assistance and protection needs.

### *Promoting local ownership and community cohesion*

To strengthen social cohesion and local ownership of the project, non-beneficiaries as well as beneficiaries were involved in the construction process. From project orientation to coordination meetings, and from sourcing delivery and warehousing of building supplies to the actual construction of the houses in both Albay and Catanduanes provinces, beneficiaries and non-beneficiaries alike were trained and worked side by side.

## List of Selected Projects

### Transport and Logistics: NFIs and Shelter Materials

<b>Status</b>	Completed
<b>Project Period</b>	December 2006 to March 2007
<b>Beneficiaries</b>	5,000 families
<b>Budget</b>	USD 250,000
<b>Donor</b>	UN-CERF

### Coordination and Support of Logistics Operations for Emergency Relief Assistance in Bicol

<b>Status</b>	Completed
<b>Project Period</b>	December 2006 to June 2007
<b>Beneficiaries</b>	20,000 families
<b>Budget</b>	USD 713,359
<b>Donor</b>	ECHO

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responsibilities of organizations within the different sectors of humanitarian response. Global cluster leads have been designated in 11 areas of humanitarian activity. At the global level, IOM leads the Camp Co-ordination and Camp Management (CCCM) Cluster for Natural Disasters and actively participates in the Logistics, Early Recovery, Health, Emergency, Shelter and Protection Clusters.

### IOM Continuing Humanitarian Response for Albay with Focus on Temporary Shelter Support and Assistance

<b>Status</b>	Completed
<b>Project Period</b>	June 2007 to February 2008
<b>Beneficiaries</b>	2,303 IDP families
<b>Budget</b>	USD 954,301
<b>Donor</b>	ECHO

#### Building of Temporary Shelters

<b>Status</b>	Completed
<b>Project Period</b>	August 2007 to October 2007
<b>Beneficiaries</b>	454 families
<b>Budget</b>	USD 520,808
<b>Donor</b>	UN-CERF

#### IOM Transit Centres' Upgrading Support

<b>Status</b>	Completed
<b>Project Period</b>	April 2007 to October 2007
<b>Beneficiaries</b>	768 families
<b>Budget</b>	USD 17,115
<b>Donor</b>	UNDP

#### Bicol Core Permanent Shelter and Community Revitalization Assistance Project

<b>Status</b>	Completed
<b>Project Period</b>	September 2007 to December 2008
<b>Beneficiaries</b>	907 families and 5 communities
<b>Budget</b>	USD 3.5 Million
<b>Donor</b>	USAID

#### Barangay Health Centre Construction in Catanduanes

<b>Status</b>	Completed
<b>Project Period</b>	February 2008 to July 2008
<b>Beneficiaries</b>	6 barangays in Catanduanes (about 792 families / 3,960 individuals)
<b>Budget</b>	USD 118,182
<b>Donor</b>	UNFPA



# TIMOR-LESTE

## BASIC FACTS

**Total Area:** 15,007 sq km

**Population:** 1.2 million

**Gross Domestic Product (GDP) per capita PPP:** USD 668

**Net Migration Rate:** 19.2 migrants/1,000 population

**Annual Remittances:** N/A

Types of Events	Types of Movement	Types of Response
Risk of earthquakes and tsunamis Floods El Niño Post-political crisis situation	Potential internal displacements	Disaster risk management/ Disaster preparedness Capacity building Disaster risk reduction

Due to a number of environmental hazards affecting food security Timorese communities suffer from chronic and severe food shortages and associated malnutrition. Over 40 per cent of the population in Timor-Leste is believed to consume a daily average of less than the recommended minimum of 2100 calories, and 47 per cent of children are purportedly chronically malnourished. © IOM 2008 - MTP0132 (Photo: Jimmy Campos)



# Institution Building: Assisting the Government in Disaster Risk Management and Disaster Risk Reduction

<b>Status</b>	Ongoing and Project Proposal <sup>27</sup>
<b>Projects Period</b>	May 2008 to October 2009
<b>Beneficiaries</b>	Vulnerable populations, national and local government structures
<b>Budget</b>	USD 1,372,678
<b>Donor</b>	Australian Agency for International Development (AusAID)

## Environmental Challenges and Other Intervening Factors

### *An unsteady situation further destabilized*

Timor-Leste experiences a number of environmental hazards throughout the year, the cyclical effects of the El Niño/Southern Oscillation (ENSO) among them.<sup>28</sup> These are associated with droughts that often lead to crop failure which, in turn, can cause widespread food shortage as well as fires. Given its location between the Eurasian and Australian plates, Timor-Leste is further vulnerable to earthquakes and associated affects such as tsunamis. Other hazards affecting food security in the country include crop and animal diseases as well as pest infestations. Changes in weather conditions associated with climate change can increase the likelihood and intensity of recurrent natural disasters throughout the country. Climatologists project that, due to climate change, the weather in the region is likely to become hotter and drier with rainfall becoming more heavy and erratic.

As a post-conflict country, Timor-Leste has a weakened institutional framework which lacks the capacity to address growing environmental threats. The last bout of political and civil unrest was in 2006, which led

<sup>27</sup> See project details at the end of the country section.

<sup>28</sup> El Niño is the appearance every few years of unusually warm surface waters of the Pacific Ocean along the tropical western coast of South America. It is associated with floods, droughts and other weather disturbances causing global climatic anomalies in the equatorial Pacific, Asia, and North America.

to the destruction of homes and other property and the displacement of over 100,000 people. Such episodes have a destabilizing effect on both the government and society as a whole, thereby also heightening vulnerability to environmental challenges.

Concomitantly, Timorese communities suffer from chronic and severe food insecurity which is particularly intense from October to November and February to March. Poor food security is associated with malnutrition and Timor-Leste has some of the highest malnutrition rates in the world. Over 40 per cent of the population is believed to consume less than the recommended minimum of 2,100 calories daily, on average, and 47 per cent of children are purportedly chronically malnourished.

Watershed behaviour in Timor-Leste is also associated with disasters affecting lives and livelihoods. The combination of heavy monsoonal rains and steep topography makes Timor-Leste prone to floods, landslides and river shifts. Prevalent deforestation leading to erosion compounds the likelihood of landslides and builds up sediment in the rivers, exacerbating river shifting and flooding.

Poor road design and drainage also worsens flooding. Casualties are common in the rainy season and severe disruption to road networks cuts off community access to markets and contributes to food insecurity. Other risks in urban areas range from disease outbreaks and fires to chemical spills and the contamination of water supply caused for instance by sewage run-off.

## IOM Programmatic Responses

### *Strengthening the framework for disaster risk reduction within the national government and among local NGOs*

IOM got involved in Timor-Leste during the 1989/2001 crisis to help with the peace building process and provide humanitarian and long-term assistance to displaced persons in close cooperation with authorities. This put IOM in a privileged position to assess vulnerabilities and propose solutions.

Given Timor-Leste's limited capacity to effectively respond and prepare for the causes and consequences of natural disasters or other environment-related hazards, IOM has been implementing since May 2008 a project which takes a comprehensive approach to strengthening the ability of the government, district and local actors to better prevent, mitigate and manage disasters.

The project aimed to support the implementation of the National Disaster Risk Management Policy (NDRMP). The first component focused on enhancing capacity for disaster risk reduction (DRR) at the national level through institutional strengthening of the National Disaster Management Directorate (NDMD) and the Office of the Secretary of State (SoS) for Social Assistance and Natural Disasters (SAND). The first component has helped to improve functions in such areas as administration, finance, human resource development, management information systems and response capacity (in particular, warehouse management and distribution of emergency food stocks).

The second component facilitated the provision of support for DRR capacity development at the sub-national level through the provision of funding to a consortium of NGOs, a scheme known as the Community-Based Disaster Risk Management (CBDRM) Flexible Fund. The focus of this scheme has been to support the establishment of sub-national Disaster Management Committees (DMCs). These committees are responsible for developing and enhancing district-level capacity for mitigation, preparedness and response and recovery coordination.

### *A fruitful partnership...*

#### *...at the national level*

The partnership developed between IOM and relevant government agencies during implementation of the project has yielded some tangible and important results relating to both components. At the national level, there have been some key achievements including improvements to logistics management in emergencies and to the organizational development of the SoS SAND. Furthermore, a strategic IT plan for the Ministry of Social Solidarity (the ministry to which NDMD and SoS SAND belongs) has been developed and the Ministry of Social Solidarity has been provided support in its strategic planning efforts.

### *...at the district level*

At the sub-national level, projects funded by the DRR Flexible Fund have supported the activation of the disaster management committees in collaboration with local NGOs. With IOM's support, these committees have identified their roles and responsibilities and have developed a coordinated approach. IOM has assisted with district-level risk assessments, planning and the establishment of emergency response and recovery systems. Furthermore, IOM is facilitating participatory community disaster risk analysis and planning processes. As a follow-up to these plans, mitigation activities and their integration into government programmes have been organized.

## Lessons Learned and Sustainability

### *Encouraging sustainability through community and NGO engagement*

The use of NGOs to facilitate CBDRM in targeted communities as well as to develop the capacity of the local government Disaster Management Committees (DMCs) has promoted sustainability through community engagement, ownership and greater awareness of environmental concerns and risk reduction possibilities at the local level.

### *Having the right information*

The collection of good hazard data is especially important when there are scarce resources allocated to DRR. In the absence of hazard risk data across the country, it is often difficult to channel DRR-specific resources to areas of greatest need.

### *Challenges in getting DRR on the agenda and everyone on board*

The project has faced some challenges:

- First, further work is required to incorporate DRR into planning and organizational frameworks. For example, DRR priorities are not yet fully integrated into line-ministry budget and action plans. The National Disaster Risk Management Inter-Ministerial

Committee that would mandate and drive this process has yet to be fully activated.

- Second, in regard to organizational development, the project's impact was limited, probably because it targeted only selected ministries. This points to a need for a whole-of-ministry approach.

Nonetheless, significant progress has been made with regard to inter-sectoral coordination on food security. It would be highly beneficial if similar steps could be taken with regard to watershed management, a key analytical framework for DRR given that watershed behaviour is a major cause of disasters in Timor-Leste.

#### The Way Forward...

##### Disaster risk reduction in Timor-Leste Phase II: A continued effort

Given the success of Phase I of the *Disaster Risk Management in Timor-Leste* project, IOM is preparing for a Phase II. To guide the design of this phase, IOM has conducted a review of specific components of Phase I implementation. The objective of the review was to assess the effectiveness, relevance, achievements, and lessons learned and constraints of the CBDRM Flexible Fund mechanism as implemented in the first phase of the project.

Some of the issues to be addressed include ownership and sustainability, balancing geographic spread and depth, technical expertise, funding criteria and duration, integrated approaches, communication and policy coherence and coordination and information-sharing.

As with the first phase, Phase II *Disaster Risk Management in Timor-Leste*, focuses on institutional strengthening of national and district government bodies to enable them to develop systems that can prepare them to map, identify, and respond to nationwide and localized disasters. This project will once again make use of a CBDRM Flexible Fund-granting mechanism to enable the project to efficiently support sub-national disaster risk reduction. Activities will centre on identification, assessment, prevention, mitigation, response and recovery.

## List of Projects

### Disaster Risk Management in Timor-Leste

<b>Status</b>	Ongoing
<b>Project Period</b>	May 2008 to October 2009
<b>Beneficiaries</b>	Vulnerable populations; national and local government structures including NDMD; Ministry of Social Solidarity including SoS SAND; District Disaster Management Committees (DDMCs); international and national NGOs working in community-based disaster preparedness and mitigation.
<b>Budget</b>	USD 1,372,678
<b>Donor</b>	AusAID

### Disaster Risk Management in Timor-Leste (Phase II)

<b>Status</b>	Project Proposal
<b>Project Period</b>	November 2009 to November 2011 (2-year period)
<b>Expected Beneficiaries</b>	NDMD; Ministry of Social Solidarity including SoS SAND; DDMCs; international and national NGOs working in community-based disaster preparedness and mitigation
<b>Proposed Budget</b>	USD 1.8 million





# Subregions

Central Asia  
North Pacific

# CENTRAL ASIA

## (Turkmenistan and Kyrgyzstan)

### BASIC FACTS

#### *Turkmenistan*

**Total Area:** 488,100 sq km

**Population:** 4,833,000 (est.)

**Gross Domestic Product (GDP) per capita PPP:** USD 1,935

**Net Migration Rate:** N/A

**Annual Remittances:** N/A

#### *Kyrgyzstan*

**Total Area:** 199,900 sq km

**Population:** 5,204,000

**GDP per capita PPP:** USD 1,935

**Net Migration Rate:** -2.9 migrants/1,000 population

**Annual Remittances:** USD 322 million

Types of Events	Types of Movement	Types of Response
Earthquakes Landslides Avalanches Mudslides	Internal displacement	Disaster risk management Disaster risk reduction/Disaster preparedness Community-based disaster risk management

# Community-Based Disaster Risk Management: Making Communities Ready to Respond

<b>Status</b>	Completed <sup>1</sup>
<b>Period of Projects</b>	2005 to February 2009
<b>Beneficiaries and Outcomes</b>	71 emergency plans (21 for Turkmenistan, 50 for Kyrgyzstan); 11 training seminars (2 for Turkmenistan, 9 for Kyrgyzstan); and 45 informational campaigns in schools (15 for Turkmenistan, 39 for Kyrgyzstan)
<b>Combined Budgets</b>	USD 1.1 million
<b>Donors</b>	Disaster Preparedness European Commission Humanitarian Aid (DIPECHO) and the Swiss Cooperation Office in the Kyrgyz Republic

Informational campaign in vulnerable schools on disaster preparedness in Kyrgyzstan. © IOM



<sup>1</sup> See project details at the end of the section.

## Environmental Challenges and Other Intervening Factors

### *Multi-hazard Locations*

Natural disasters regularly occur in both countries. Earthquakes, mudslides and floods, landslides and avalanches are the most common and the most dangerous for the population. Poor communication, the remoteness of most territories and vulnerability to a large variety of dangerous natural phenomenon, combined with poverty, create a risky environment for normal human life and habitat.

Kyrgyzstan, situated in the heart of Central Asia, is home to the longest mountain range in the world, the Tian-Shan mountain system. South of the Republic, Kyrgyzstan stretches along the northern side of the of Pamiro-Alai mountain systems. Due to the effect of climate change, glaciers in the country are melting at an increasing pace, augmenting the risk of glacier lake outbursts while at the same time reducing the availability of fresh water.

Turkmenistan is located in the western part of Central Asia at the junction of the Kopetdag range and the vast Garagum. Extreme climatic conditions, land degradation, scarcity of fresh water and desertification levels pose further threats to the human security of populations throughout the country.

### *On shaky ground...*

The territory of Turkmenistan is one of the most active seismic regions in the Alpine-Himalayan belt of Eurasia, with 56 per cent of the total territory of Turkmenistan at risk. The most dangerous seismic zone includes such cities as Ashgabat, Balkanabat, Turkmenbashi, Khazar, and a number of areas in Balkan and Ahal *velayats* (regions), with a population of 1.5 million people.

In Kyrgyzstan, the earthquakes in December 2007, January 2008 and October 2008 caused big economic damage to Jalalabad and Osh provinces. About 12,000 houses and buildings had been damaged in three regions of Osh *oblast* (province).

### *...under mud and water*

Floods and mudslides are a real threat in Kyrgyzstan. According to official sources, in 2003, more than 300,000 people directly suffered from combined damages caused by landslides, floods and mudflows. As a result of these, 43 people died, 1,088 families were left homeless, and infrastructure was destroyed, with 1088 hectares of land flooded. Every year, at least 700 dwellings are damaged partially or completely.<sup>2</sup>

In Turkmenistan, at the foothills of the Kopetdag and Kugitang, there are approximately 180 current mudflow beds where mudflows can form. About twice a year, mudflows occur in Balkan velayat due to snow melting or heavy rains. In March 2002, dwellings were destroyed and 15 people died as a result of rains and mudflows. Between 1996 and 2006, 14 emergency situations were registered along the Amudarya River that flows along the low-lying part of eastern Turkmenistan, with floods and flooding of agricultural lands, dwellings, engineering nets and roads caused by snow melting in the mountains and heavy rains.

### IOM Programmatic Responses

Since 2000, IOM has been working in the area of assistance to vulnerable populations affected by natural disasters in Kyrgyzstan and Turkmenistan.

#### *Team work in times of emergency*

The project, *Social Partnership in Migration Management under Emergency Situations*, was started in 2000 and had two phases. The first phase was completed with the preparation of the Social Partnership Strategy, which was meant to be used as a guidance tool for policy makers for coordinated responses in times of emergency. The second phase included seminars with the participation of all society sectors (public administration, NGO, and population) and the establishment of voluntary rescue teams, which were trained by professional rescue instructors from the Ministry of Ecology and Emergency Situations.

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<sup>2</sup> This data does not include indirect damage caused by natural disasters.

### *Reacting to danger*

The pilot project of *Reintegration and Adaptation Assistance to Internally Displaced Persons (IDPs) Affected by Landslides*, launched in 2004, was in response to the landslide that occurred on 26 April 2004 in the village of Kainama, under the Budalyk local government in the Alai district of the Osh province in Kyrgyzstan. The landslides killed 34 people, including 16 children.

### *Raising community awareness*

As part of its disaster preparedness (DP) and capacity building programmes, IOM has been engaged in ongoing work with local communities in Kyrgyzstan and Turkmenistan to reduce vulnerability to natural disasters. The cooperative effort, which began in 2005, involved activities such as raising public awareness, particularly among the youth. To date, informational campaigns have been conducted in a number of schools, identified as being the most vulnerable to earthquakes.

## Lessons Learned and Sustainability

### *Local and long-term involvement: Ingredients for success*

The most important aspect of the programme is that the activities were concentrated at the local level, in close coordination with local authorities. Within the framework of the project, all interested participants – government representatives, civil society, international organizations, scientific institutions, as well as volunteers – were involved, as this is necessary to strengthen the culture of natural disaster prevention at all levels. Long-term involvement helps to ensure the sustainability of projects and allows for the adaptation of responses as circumstances are altered and new challenges arise.

### *Building capacity among decision-makers*

In order to ensure that response efforts are effective, coordinated and sustainable, IOM has focused on building capacity among local

authorities and NGOs. To this end, IOM has helped to develop emergency plans for communities, create a handbook for *aiyl okmotus* and *huakimliks* (Kyrgyz and Turkmen local administrations) on mitigation works and conduct a series of training programmes.

The training focused on DP in general, as well as special skills required for the adaptation, introduction and distribution of the emergency plan to different categories of the population. Particularly, the strengths and weaknesses of each village have been identified in terms of DP. During the training, the local authorities worked together to identify local vulnerabilities and needs and develop strategies.

Training centres in Osh and Bishkek in Kyrgyzstan have been renovated to provide a venue for such efforts. The centres have been designed to provide training in the area of natural disaster and emergency situation analysis and risk reduction. The training is for urban first responders, decision makers, policy analysts and urban planners, and aims to create a data warehouse for storing, retrieving and distributing physical, environmental, economic and social data related to emergency situations.

#### Environmental Degradation and Climate Change: Major Push Factors for Migration in Central Asia (Kazakhstan, Kyrgyzstan and Tajikistan)

IOM is partnering with the Organization for Security and Co-operation in Europe (OSCE) and United Nations University – Institute for Environment and Human Security (UNU-EHS) for this project,<sup>3</sup> which has been developed as a follow-up to the Environmental Change and Forced Migration Scenarios (EACH-FOR) research project that covered 23 country case studies in different regions of the world.<sup>4</sup>

In Central Asia, case studies were conducted for Kazakhstan, Kyrgyzstan and Tajikistan. These studies revealed that these countries have experienced both large-scale migration of populations and severe environmental changes and hazards of different kinds, both man-made and natural, in recent decades. Intensive mining, deforestation, droughts, and air and water pollution have been ongoing in this region. The case studies made some key policy recommendations for these three countries. These included the need for further quantitative information on the linkages between environment and migration; awareness-raising and educational activities targeting decision-makers as well as communities; and regional cooperation and sharing of experiences among countries.

<sup>3</sup> Under this project, IOM and UNU-EHS will be the main implementing partners to the OSCE.

<sup>4</sup> More information on the European Union-funded EACH-FOR project available at <http://www.each-for.eu>



Building on this initial partnership and on the findings of the EACH-FOR research, IOM, OSCE and UNU-EHS' project proposal aims at providing governmental institutions and civil society groups with early warning tools. It will build capacities to address the challenges associated with migration induced by environmental factors and exacerbated by climate change in these three countries of Central Asia. The project will also promote policy dialogue, raise public awareness, conduct educational activities and facilitate regional information exchange through existing networks in Central Asia, such as the Migrant Information Centres and the Aarhus Centres/Public Environmental Information Centres.<sup>5</sup>

## List of Projects

### Social Partnership in Migration Management under Emergency Situations

<b>Status</b>	Completed
<b>Project Period</b>	2000
<b>Number of Beneficiaries</b>	5,000 persons
<b>Budget</b>	USD 50,000
<b>Donor/s</b>	Capacity building in migration management programme (CBMMP)

### Reintegration and Adaptation Assistance to Internally Displaced Persons (IDPs)

<b>Status</b>	Completed
<b>Project Period</b>	2004
<b>Number of Beneficiaries</b>	5,000 persons
<b>Budget</b>	USD 100,000
<b>Donor/s</b>	CBMMP

### DIPECHO III Project: Preparing Assistance to the Vulnerable Population in the Areas of Kyrgyzstan Affected by Natural Disasters

<b>Status</b>	Completed
<b>Project Period</b>	2005 to 2006
<b>Number of Beneficiaries</b>	60,000 persons
<b>Budget</b>	USD 120,476
<b>Donor</b>	ECHO

### DIPECHO IV Project: Preparing Assistance to the Vulnerable Population in the Areas of Kyrgyzstan and Turkmenistan Affected by Natural Disasters

<b>Status</b>	Completed
<b>Project Period</b>	2007 to 2008
<b>Number of Beneficiaries</b>	100,000 persons
<b>Budget</b>	USD 436,442
<b>Donor</b>	ECHO

<sup>5</sup> More information on the Aarhus Centres available at <http://www.osce.org/eea/13471.html>

**DIPECHO V Project: Capacity Building of Local Authorities and Communities in the Areas of Kyrgyzstan and Turkmenistan Affected by Natural Disasters (AKTAN)**

<b>Status</b>	Ongoing
<b>Project Period</b>	August 2008 to October 2009
<b>Number of Beneficiaries</b>	50,000 persons
<b>Budget</b>	USD 466,562
<b>Donor</b>	ECHO

**Strengthening the Capacity of the Kyrgyz Republic Ministry of Emergency in Providing Training Services on Emergency Situations**

<b>Status</b>	Completed
<b>Project Period</b>	August 2008 to February 2009
<b>Number of Beneficiaries</b>	1000 persons
<b>Budget</b>	USD 95,238
<b>Donor</b>	Swiss Agency for Development and Cooperation (SDC)

# NORTH PACIFIC

## (Federated States of Micronesia and The Republic of the Marshall Islands)

### BASIC FACTS

#### *Federated States of Micronesia (FSM)*

**Total Area:** 702 sq km

**Population:** 107,434

**Gross Domestic Product (GDP) per capita PPP:** USD 2,200

**Net Migration Rate:** -21.03 migrants/1,000 population

**Annual Remittances:** N/A

#### *The Republic of the Marshall Islands (RMI)*

**Total Area:** 181 sq km

**Population:** 64,522

**GDP per capita PPP:** USD 2,500

**Net Migration Rate:** -5.41 migrants/1,000 population

**Annual Remittances:** N/A

Types of Events	Types of Movement	Types of Response
Tropical cyclones Floods and landslides Tsunamis Sea-level rise	Internal migration and potential internal displacement, including inter-archipelago movements Urbanization of main cities	Disaster risk management/ Disaster preparedness Disaster risk reduction (with potential for climate change adaptation)

# Vulnerable Pacific Islands: Investing in Disaster Preparedness

<b>Status</b>	Ongoing
<b>Project Period</b>	August 2008 to August 2013
<b>Beneficiaries</b>	Emergency response agencies in RMI and FSM, vulnerable populations in the region
<b>Combined Budgets</b>	Approximately USD 4 million
<b>Donor</b>	United States Agency for International Development (USAID) - Office of the United States Foreign Disaster Assistance (OFDA)



A Tropical Paradise or Disaster Waiting to Happen? Majuro Atoll, Republic of the Marshall Islands has an average elevation of less than 2 meters above sea level. © IOM 2009 (Photo: Ashley Carl)

## Environmental Challenges and Other Intervening Factors

The Federated States of Micronesia (FSM) and the Republic of the Marshall Islands (RMI) are two island-nations collectively made up of 1,800 islands spanning 2,000 miles across the north-western Pacific Ocean. They have a combined population of approximately 180,000.

### *Extreme vulnerabilities as Small Island Developing States*

The FSM and RMI belong to a political grouping of countries called the Small island developing States (SIDS), united as a result of shared vulnerabilities and need for coordination.<sup>6</sup> In accordance with a paper commissioned by the United Nations Framework Convention on Climate Change (UNFCCC), SIDS are “some of the most vulnerable countries in the world to climate change” due to their climate characteristics and socio-economic situations. Sea-level rise is a real threat, given the low elevation of most of the SIDS, including the FSM and RMI.

The warming of the ocean surface, which has already been detected around the small island states, is predicted to be accompanied by an increase in heavy rainfall and more intense and frequent storms and typhoons, exacerbated by the geographical location of the islands in the typhoon belt. Furthermore, coral reefs and mangroves will be threatened by rising sea temperatures and acidification, adversely affecting fisheries and degrading the natural protective barriers of the islands against extreme weather conditions. Agriculture will also suffer, as water resources and arable land become depleted. Only last year, these countries suffered significant water inundation as a result of a wave surge and drought remains an ongoing disaster risk.

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<sup>6</sup> SIDS are small islands and low-lying coastal countries that share similar sustainable development challenges, including small population, lack of resources, remoteness and susceptibility to natural disasters. In April 1994, the first Global Conference on Sustainable Development of SIDS was convened in Barbados. The conference adopted the Barbados Programme of Action (BPoA) that set forth specific actions and measures to be taken at the national, regional and international levels. The BPoA was followed in 2005 by the so-called Mauritius Strategy for 2005-2015 that not only recognizes climate change as a threat, but also refers to the need for adaptation and Disaster Risk Reduction in line with the Hyogo Framework for Action. More information available at <http://www.un.org/smallislands2005/>

Hazards common to the islands include typhoons, floods, landslides and tsunamis, often triggered by El Niño.<sup>7</sup>

Some nations in the South Pacific have already developed contingency plans for relocating populations from low-lying islands and atolls. The governments of RMI and FSM may need to consider similar contingency planning. In addition, ongoing coastal erosion coupled with lack of infrastructure, are driving some populations in the outer islands to migrate to the larger capital cities, placing additional burden on already overstretched public infrastructure.

Donor governments, particularly the United States, have provided assistance to these nations in implementing disaster risk reduction (DRR) measures, such as early warning systems, development of national action plans for disaster preparedness (DP) and climate change adaptation measures. However, a high level of unemployment, low level of education, unplanned urbanization and ongoing governance issues are leading to an increasingly vulnerable population.

## IOM Programmatic Responses

### *Planning for and mitigating disaster risk*

IOM has established a presence on the islands and is currently implementing a Disaster Mitigation, Relief and Reconstruction Programme with funding from USAID-OFDA. The project aims to provide humanitarian relief and assistance for reconstruction and recovery following an extreme event. Moreover, IOM will work with the governments and communities of these respective nations to increase emergency response capacity as a disaster mitigation measure.

Through the programme, IOM is maintaining a small full-time, project-specific presence in the region, in areas most affected by disasters. A support team has been established in Manila, Philippines, to provide

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<sup>7</sup> El Niño is the appearance every few years of unusually warm surface waters of the Pacific Ocean along the tropical western coast of South America. It is associated with floods, droughts and other weather disturbances causing global climatic anomalies in the equatorial Pacific, Asia, and North America.

maximum coverage for regional and extra-regional logistics and procurement activities. This team consists of logistical service support, as well as emergency medical services and medical evacuation personnel. Furthermore, IOM is helping to organize pre-positioning of basic emergency resources and coordination mechanisms.

## Lessons Learned and Sustainability

IOM has already started working closely with governments in streamlining disaster response activities. IOM is also engaging with local civil society actors and the private sector to ensure a comprehensive approach to disaster relief and reconstruction efforts. The objective will be to build the capacity of national and state governments, as well as civil society actors, vis-à-vis DP and response capacity. IOM will also be working with the National Red Cross Society in FSM, as well as regional disaster risk management (DRM)/DRR stakeholders, such as the Pacific Islands Applied Geoscience Commission (SOPAC)<sup>8</sup> and the United Nations.

Further information pertaining to this project will be available in the first half of 2010.

## Project

### Disaster Mitigation, Relief and Reconstruction Programme

<b>Status</b>	Ongoing
<b>Project Period</b>	August 2008 to August 2013
<b>Beneficiaries</b>	Emergency response agencies in RMI and FSM, the general population in these islands
<b>Combined Budgets</b>	Approximately USD 4 million
<b>Donor</b>	USAID-OFDA

<sup>8</sup> SOPAC is the Pacific Islands Applied Geoscience Commission. It is an inter-governmental, regional organization dedicated to providing services to promote sustainable development in the countries it serves. SOPAC's work is carried out through its Secretariat, based in Suva. The work programme is reviewed annually by the Governing Council assisted by: Secretariat representatives, a Technical Advisory Group (TAG), and a Science, Technology and Resources Network (STAR). More information available at [www.sopac.org](http://www.sopac.org). SOPAC should soon be incorporated into Secretariat of the Pacific Community (SPC), [www.spc.int](http://www.spc.int).





EUROPE

Azerbaijan  
Kosovo/UNSC 1244

# AZERBAIJAN

## BASIC FACTS

**Total Area:** 86,600 sq km

**Population:** 8,352,000

**Gross Domestic Product (GDP) per capita PPP:** USD 4,153

**Net Migration Rate:** -2.4 migrants/1,000 population

**Annual Remittances:** USD 693 million

Types of Events	Types of Movement	Types of Response
Water scarcity Drought	Migration, including Irregular migration	Reducing out-migration pressure Community stabilization and livelihood Migration and development Climate change adaptation



Child draws water from a kahriz. This traditional water system which takes underground water to the surface proves to be the most efficient way to provide sustainable drinking and irrigation water to isolated villages in Nakhchivan. © IOM2009 - MAZ0016 (Photo: Jean Philippe Chauzy)

# The Story of the Kharizes: How the Revival of the Ancient Water System Contributes to Sustainable Development and Reduces Migratory Pressure from Isolated Nakhchivan Region<sup>1</sup>

<b>Status</b>	Ongoing <sup>2</sup>
<b>Period of Projects</b>	from 1998 to April 2011
<b>Beneficiaries and Outcomes</b>	30,134 persons; 539 jobs created; 154 water systems built
<b>Combined Budgets</b>	Over USD 5 million
<b>Donors</b>	United Nations Development Programme (UNDP), Swiss Agency for Development and Cooperation (SDC), US Department of State/Bureau of Population, Refugees and Migration, Arab Gulf Programme for United Nations Organizations (AGFUND), Government of Canada, European Commission (EC)

## Environmental Challenges and Other Intervening Factors

Water is in short supply in Azerbaijan and much of the land accounts for one of the driest regions on earth. Notably, Azerbaijan has 8.3 times less water per capita than Georgia.

The Nakhchivan Autonomous Republic (NAR) has been isolated from mainland Azerbaijan for the past 20 years due to inter-state conflict with neighbouring Armenia in the aftermath of the collapse of the Soviet Union. The economy of the Republic, which has an estimated population of 360,000, suffers immensely from a lack of communication routes, energy, and economic development opportunities. This in turn, has resulted in the deterioration of infrastructure, loss of jobs and intense economic migration to Turkey, Russia and other countries.

In rural areas of NAR, the already inadequate hydrological situation has deteriorated due to mismanagement and poor maintenance

<sup>1</sup> See also Migration Magazine, Autumn 2009, IOM, available at [http://publications.iom.int/bookstore/free/migration\\_autumn\\_09.pdf](http://publications.iom.int/bookstore/free/migration_autumn_09.pdf)

<sup>2</sup> See project details at the end of the country section.

of the water systems as well as natural drought – a situation that is expected to worsen as a result of climate change. With approximately 63 per cent of the population in Nakhchivan engaged in agriculture, insufficient water resources have resulted in a severe decline in living standards. Therefore, enhanced access to water is paramount to long-term improvement of living conditions and economic development in poor rural areas.

Solutions exist and have existed for centuries. Developed in ancient Iran 3,000 years ago, the *kahriz* is a system that takes underground water to the surface through gravity flow. It provides a constant supply of water year-round and is based on a unique architectural structure. Kahrizes are environmentally friendly as they require no external energy for functioning. They are relatively inexpensive to maintain, resilient to fluctuations in the levels of precipitation, and has even proved durable and resistant against devastation from natural disasters.

In dry and semi-arid regions, kahrizes represent the optimum solution for water shortage. They have been a critical source of drinking and irrigation water for centuries. It is estimated that until the twentieth century, nearly 1,500 kahrizes existed across the country. However, following the introduction and widespread use of electric and fuel-pumped wells during Soviet times, kahrizes were neglected.

The adoption of newer technologies altered the historic reliance of villages on kahrizes. People preferred pumped wells to the publicly operated and collectively maintained kahriz systems. At first glance, these pumped wells seemed to offer advantages, such as allowing users to turn water taps on and off, while Kharizes are continuously providing running water. However, exponential growth in the number of artesian wells and over-pumping caused water tables to fall. Routine maintenance required to keep kahrizes flowing stopped and hundreds of kahrizes were abandoned. As a result, only a few of them remain in operation and their capacity is greatly reduced.<sup>3</sup>

<sup>3</sup> Today, out of 1,500 kahrizes in Azerbaijan, it is estimated that merely 800 are still functioning. Out of 408 reported kahrizes in NAR, about 30 per cent are still in flow but on the verge of drying up (with a water discharge of only 10-30% of pre-1960 flows). Of the 70 per cent of kahrizes that have dried up, most have ceased flowing since the introduction of pumped tube wells. (Source: External Review, based on field visits, discussions with stakeholders and data from the Kahriz Department of the Government of NAR.)

The economy of NAR is mainly based on output and manufacture of farm products (including fruit and light processing industry). With more water available for irrigation, the industry has an important potential for income-generation and economic development. The kahriz system is believed to be key to the life of many impoverished communities. As the current capacity of kahrizes is far below optimal, there is an urgent need to renovate these ancient waterways to address chronic water shortages and support the region's water-based socio-economic development.

## IOM Programmatic Responses

The lack of access to potable water, along with a number of other intervening factors has spurred economic migration from the rural regions of Nakhchivan. At the end of the 1990s, local communities requested IOM to intervene. The reintroduction of the kahriz system quickly appeared as the most efficient way to address the issue in a sustainable manner.

Building on the successful results achieved under its pilot project, IOM, with the financial support of different donor agencies, launched several projects. Ten years later, it resulted in handing over 77 renovated kahriz systems to the communities. These renovated systems supply sufficient water to irrigate over 1,500 hectares of land.

Over this period of time, the programme has gone through different phases, using previous experiences to achieve long-term sustainability and the empowerment of local communities and authorities. The main steps include:

- Successful renovation: this contributed to raising government officials' awareness of and interest in the advantages of kahrizes. In 2004, the NAR Government established a Kahriz Department within the Amelioration and Water Resources Agency.
- In 2006, IOM and the Kahriz Department established the Kahriz Resource Centre (KRC). Affiliated with the Kahriz Department, the KRC's role is to serve as a resource for the restoration of kahrizes and raise public awareness of kahriz systems.

- In 2007, building upon the positive results achieved under the previous phases of the kahriz projects, and taking into account recommendations from an impact assessment, an external review and stakeholder consultations, IOM started the implementation of a project promoting *Economic Development and Income Generation in Nakhchivan Rural Communities through Kahriz Rehabilitation*. The project's overall objective is to support employment and income generation in the rural areas of NAR, by enhancing communities' access to water through the rehabilitation of kahrizes and downstream water management, and by supporting livelihoods and business development services related to the rehabilitation and maintenance of kahrizes.

### *The multiplier effect*

The success story continues – the KRC enthusiastically steps forward with newly recruited employees. Two hundred *kankans* – the traditional name given to kahriz engineers – are now employed for the renovation of kahrizes and 31 kankans have received both theoretical and practical training, thanks to specifically developed and tested training material.

To illustrate the positive multiplier effect, there are now two concrete manufacturers that have started the production of concrete items for the renovation of kharizes, employing six workers. Further, in collaboration with the Nakhchivan State University, curricula for students of agriculture are being developed.

### Lessons Learned and Sustainability

#### *Investing in local technology to support adaptation to a changing climate*

Even in areas affected by severe weather conditions, solutions exist that can be efficient and sustainable at the same time, as the khariz system proved to be. In light of worsening conditions because of climate change, the khariz system also offers a viable way for populations to increase their resilience. It is therefore of utmost importance to

build upon local knowledge and practices, as it can in turn facilitate acceptance from the beneficiaries.

### *Ensuring ownership through an inclusive, transparent and demonstrative process*

Critical to the success and sustainability of the project is the participatory approach. Members of Water User Committees (WUCs) participated in control and monitoring of specific water projects implemented. Participants expressed their interest to undertake further infrastructure initiatives as they realized the benefits of being organized into associations and committees. Another important role of WUCs is to act as contact point and take over the operations and maintenance of the schemes once renovation/construction is completed, thus contributing to local ownership and long-term sustainability.

It has been very important for investments in water schemes to strengthen the institutional approach. It has enabled communities to develop their own self-governing institutions that generate funds through user fees, and to take leadership and ownership for sustenance. These should further evolve as specialized community institutions; even government agencies can become involved in water schemes.

Equal access for all stakeholders to project-related specific information has proven its added value. This framework ensures transparency, attracting open participation and willingness to bring financial and in-kind contributions.

### *In it for the long haul...*

Part of the success is due to IOM's long-term engagement since the project started as a localized pilot project a decade ago. The programme now spans the region and has reached critical mass where it can have an impact on local economic development, contributing to reduce migratory pressure.



## List of Projects

### Community Development and Micro Credit

<b>Status</b>	Completed
<b>Project Period</b>	1998 to November 2006
<b>Beneficiaries</b>	30,134 persons; 539 jobs created
<b>Budget</b>	USD 383,718
<b>Donor</b>	UNDP, AGFUND

### Technical Assistance and Capacity Building Preservation of Traditional Skills Excavation Training of Kahriz Irrigation Channels

<b>Status</b>	Completed
<b>Project period</b>	March 2001 to February 2002
<b>Budget</b>	EUR 32,000
<b>Donor</b>	EC

### Preservation of Traditional Excavation Techniques of Kahrizes

<b>Status</b>	Completed
<b>Project period</b>	October 2001 to February 2002
<b>Budget</b>	USD 10,184
<b>Donor</b>	Government of Canada

### Community Infrastructure Rehabilitation

<b>Status</b>	Completed
<b>Project Period</b>	July 2001 to October 2003
<b>Outcomes</b>	16 water systems
<b>Budget</b>	USD 150,319
<b>Donor</b>	SDC

## Community-Owned Sustainable Water Use and Agricultural Initiatives

<b>Status</b>	Completed
<b>Project Period</b>	January 2004 to October 2007
<b>Outcomes</b>	18 water systems
<b>Budget</b>	CHF 786,000
<b>Donor</b>	SDC

## Economic Development and Income Generation in Nakhchivan Rural Communities through Kahriz Rehabilitation

<b>Status</b>	Ongoing
<b>Project Period</b>	November 2007 to April 2011
<b>Outcomes</b>	100 water systems
<b>Budget</b>	CHF 3,300,000
<b>Donor</b>	SDC

## Sustainable Water Supply for Internally Displaced Persons (IDPs) in Azerbaijan

<b>Status</b>	Ongoing
<b>Project Period</b>	November 2008 to October 2009
<b>Outcomes</b>	10 water systems
<b>Budget</b>	USD 551,355
<b>Donor</b>	US Department of State/Bureau of Population, Refugees and Migration

# KOSOVO/UNSC 1244<sup>4</sup>

## BASIC FACTS

**Total Area:** 10,887 sq km

**Population:** 2,150,000 (2009 est.)

**Gross Domestic Product (GDP) per capita PPP:** USD 2,617 (2009 est.)

**Net Migration Rate:** N/A

**Annual Remittances:** N/A

Types of Events	Types of Movement	Types of Response
Post-conflict earthquakes and landslides Other potential natural and man-made hazards	Potential displacement	Disaster risk management Disaster preparedness Civil Protection capacity building Community stabilization



Search and Rescue exercise by a female member of the Kosovo Protection Corps, Kosovo/UNSC 1244. © IOM 2009

<sup>4</sup> Henceforth “UN Security Council Resolution 1244 – administrated Kosovo” will be referred to as Kosovo/UNSC 1244.

# Building Up Civil Protection as Part of Post-Conflict Institution Building and Security Sector Reform

<b>Status</b>	Ongoing <sup>5</sup>
<b>Period of Projects</b>	1999 to 2009
<b>Total Beneficiaries and Outcomes</b>	Over 3,500 Kosovo Protection Corps (KPC) members trained; over 6 million training man-hours; over 300 community infrastructure projects conducted by KPC-trained members and benefiting all regions and ethnic communities of Kosovo
<b>Combined Budget</b>	Over USD 32.3 million
<b>Donors</b>	Governments of European Union Member States, the United States and a contribution from the Kosovo Consolidated Budget via the UN Mission in Kosovo.

## Environmental Challenges and Other Intervening Factors

### *The end of conflict and the beginning of new challenges*

The United Nations Security Council Resolution 1244 (UNSC 1244), adopted on 10 June 1999, marked the end of a decade of conflict in the Balkans by putting the Kosovo Province under UN interim administration.

Following the cessation of conflict in June 1999, the population of Kosovo/UNSC 1244 was facing a dramatic period of change and challenges. Displaced families and participants in the armed conflict were returning to their former homes, and authorities and institutions were being rebuilt, sometimes from scratch. Furthermore, social support systems needed to be overhauled to cope with the massive effort required to prepare for the coming winter. The conflict left a huge part of the population in a state of vulnerability, independent of their ethnicity and increased vulnerability to environmental threats and natural and man-made hazards common to the areas such as earthquakes, floods, forest fires, and hazardous waste spills. In this fragile socio-economic environment, a comprehensive and coordinated strategy was required from IOM.

<sup>5</sup> See project details at the end of the country section.

UNSC 1244 also stipulated that “the Kosovo Liberation Army and other armed Kosovo Albanian groups end immediately all offensive actions and comply with the requirements for demilitarization.” On 14 July 1999, the United Nations Mission in Kosovo (UNMIK) and Kosovo Force (KFOR) established measures to accompany the reintegration of the demilitarized Kosovo Liberation Army (KLA) members.

## IOM Programmatic Responses

IOM was designated by UNMIK and KFOR to act as the focal point for the design and implementation of a demobilization and reintegration programme. Over the following two and a half years, 15,596 former combatants received one or more forms of reintegration assistance. **This assistance consisted of a number of options,<sup>6</sup> one of which was for former combatants to become members of the so-called Kosovo Protection Corps (KPC) that was to be established to undertake civil protection and emergency service duties.**

### *KPC Training Programme: A new beginning for many at the service of the community*

To develop the capacity of the KPC, IOM established the Kosovo Protection Corps Training (KPCT) Programme in February 2000. The overarching goal of this programme was to prepare the KPC to function effectively as a competent disaster relief and emergency service organization within Kosovo/UNSC 1244 and appropriately respond to natural and man-made disasters.

The KPCT Programme was divided into five phases concentrated on increasingly specialized civil protection instruction, provided through institutionalized individual training and collective training. A series of five collective training exercises was organized, in coordination with KFOR, to develop and then strengthen the KPC's ability to coordinate and deliver emergency services in response to a variety of different kinds of emergency efforts, from earthquakes and floods to fires and car accidents.

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<sup>6</sup> Services included referrals to training, education and/or employment opportunities, micro-grants for income-generating activities through the Reintegration Fund, referral to the newly formed Kosovo Police Service (KPS).

IOM's training objectives for the KPC were put to the test on a number of occasions, most memorably on 24 April 2002, when the Gjilan/Gnjilane municipality experienced an earthquake of a magnitude of 5.6 on the Richter scale. KFOR, municipal officials, and other relevant service organizations requested and later praised KPC's response and assistance. Their success, not only in providing disaster relief services, but also in coordinating with municipal authorities, demonstrated that KPC leaders and members had internalized the goals of the KPCT Programme and was becoming a competent civil protection organization.

For nearly five years, the KPCT Programme actively engaged its members in over 6 million training man-hours.

### *IOM Trust Fund Programme: Learning by doing*

In close coordination with UNMIK and KFOR, IOM established the Trust Fund Programme in September 2000. This project engages KPC members in civic and humanitarian work projects such as constructing water supply networks, repairing roads, reconstructing bridges, etc. The purpose was to assist in rebuilding the infrastructure and communities of Kosovo/UNSC 1244. Notable examples of the Trust Fund Programme's accomplishments include the construction of 12 new fire stations in various municipalities and a fire sub-station in Prishtinë/Priština.

A number of projects were specifically related to environmental hazards and concerns (see box for project example) and help to promote disaster risk reduction (DRR). Notably, it includes the creation of the first Alarm and Coordination Centre in Kosovo/UNSC 1244. In all of its projects, the Trust Fund Programme finances all of the necessary materials and supplies on-site expertise to provide on-the-job training to KPC members. All in all, over 300 projects have been successfully implemented through this initiative.

The Trust Fund Programme has proven to be a successful undertaking that exerted a positive impact on the various ethnic communities affected by its projects in different parts of Kosovo/UNSC 1244. In 2003, the core focus became providing assistance to the various ethnic

return sites and other initiatives targeting ethnic communities across the place. In cooperation with UNMIK, the KPC began taking a more prominent role in support of community building projects, encouraging greater acceptance for a multi-ethnic society. Therefore, in addition to the improvement of specific infrastructure, IOM and the KPC have contributed to the amelioration of human security and safety problems faced by residents. Regular monitoring visits by Trust Fund staff have ensured the efficient implementation of the specific projects.

**Community infrastructure projects to address environmental challenges**  
*Construction of an irrigation channel in Kashicë/Kašica*

The village of Kashicë/Kašica (with 220 inhabitants) required a new irrigation system. The previously existing channel was poorly constructed, which resulted in the erosion of land around the village during heavy rains or when snow would melt causing run-off in the spring. To address these recurrent problems, a 600-metre channel was constructed, which has halted the erosion problem, preventing soil loss and degradation. This represented a major development for the village's inhabitants who mainly rely on farming for their subsistence.



## Lessons Learned and Sustainability

### *Institutional building in the context of peacebuilding*

Post-conflict situations present huge challenges: while there are enormous needs in terms of assisting affected populations, there is at the same time a cruel lack of institutional capacities. In addition, stability often implies dealing with armed groups to reduce the levels of despondency and dissent within the segment of society that is most likely to pick up arms again. This project has proven that it is possible to build on the need for demilitarization to utilize and mobilize existing resources and reshape them to serve and protect the community, contributing to peacebuilding as much as to reconstruction and institutional building efforts.

Furthermore, since many of the projects targeted ethnically mixed communities and minority communities in identified return areas,

the KPC's participation in the Trust Fund projects enhance efforts to promote confidence and build tolerance within the majority community towards returning ethnic minority communities, thereby supporting the return and reintegration process. Whenever practical, IOM encourages the establishment of community working groups with representation from the relevant ethnic communities to identify and prioritize potential projects.

### *A coordinated effort*

The KPC developed and maintained close contact with other public service organizations such as the Kosovo Department of Emergency Management and the local fire, police, utility and forestry departments, as well as with key international humanitarian organizations. This increased the KPC's ability to coordinate its responses to emergencies with other service providers. Further, as KPC senior- and middle-level leadership became more proficient, KPC members and units progressed to collective training events and participated in training exercises, competitions and deployments in and outside of Kosovo/UNSC 1244. Thereby, the KPC further demonstrated its commitment to meeting public needs and working in collaboration with other organizations, adding greatly to the overall emergency response capacity.

### *Establishing guiding rules and principles*

The programme's strategy standardized the KPC's training and institutionalized it by grounding it in doctrinal manuals and regulations. By establishing a doctrinal base for training, the KPC became self-sufficient and sustainable in its capacity to train, organize, and accomplish its mandated missions.



## List of Projects

### Kosovo Protection Corps Training (KPCT)

<b>Status</b>	Completed
<b>Project Period</b>	1999 to 2006
<b>Beneficiaries</b>	Over 3,500 KPC members trained; over 6 million training man-hours
<b>Budget</b>	Over USD 27.3 million
<b>Donors</b>	Governments of the United States and the United Kingdom; various contributions (both financial and in-kind) from several EU Member States; and a contribution from the Kosovo Consolidated Budget via the UN Mission in Kosovo.

### IOM-KPC Trust Fund

<b>Status</b>	Ongoing
<b>Project Period</b>	2000 to 2009
<b>Beneficiaries</b>	Over 300 community stabilization projects
<b>Budget</b>	Over USD 5 million
<b>Donors</b>	Governments of the United Kingdom, the Netherlands and Denmark; other governments of EU Member States; and the United States.



MIDDLE EAST

Syria  
Yemen

# SYRIA

## BASIC FACTS

**Total Area:** 185,180 sq km

**Population:** 18,894,000

**Gross Domestic Product (GDP) per capita PPP:** USD 3,610

**Net Migration Rate:** -0.3 migrants/1,000 population

**Annual Remittances:** USD 855 million

Types of Events	Types of Movement	Types of Response
Drought Water shortage Food insecurity	Internal rural migration	Climate change adaptation Assisted voluntary return Durable solutions Livelihood and community stabilization



Devastating droughts have left vast areas of the once rich food basket of Syria with very scarce water resources. Due to this loss of livelihood, many have left the drought affected regions. © Phil Sanders/IRIN

# Drought-Induced Migration: Assisting with the Voluntary Return Home

Status	Project Proposal
Project Period	N/A
Expected Beneficiaries	35,200 to 40,000 environmental migrants (approximately 4,000 to 4,500 families)
Requested Budget	USD 4.8 million
Partners	UN Joint Appeal

## Environmental Challenges and Other Intervening Factors

### *Drought: A cause of loss and displacement*

Syria has been struggling with devastating droughts for the past three years in a row since 2006. The droughts have affected over 60 per cent of Syria's national territory,<sup>1</sup> leaving vast areas of this once-rich food basket with very scarce water resources for use in agriculture. The increased and intensified occurrence of droughts is potentially a result of climate change.

According to the Syrian Government and UN assessment missions that took place in the summer of 2009, the affected population is estimated at 1.3 million, of which 803,000 are severely affected. Of these, 80 per cent live on a diet of bread and sugared tea, which covers only 50 per cent of caloric and protein needs.

Due to the loss of livelihoods and in search of income to buy food, many have left the drought-affected areas. Last year's migration figures ranged from 40,000 to 60,000 families,<sup>2</sup> of which 36,000 families have reportedly migrated from the governorate of Hassakeh alone. **While in search of better living conditions, hardships still prevail for the migrants in their new communities.** There remains an acute shortage of water, as many wells and rivers have dried up. School drop-out

<sup>1</sup> *Joint UN Needs Assessment Mission – JNAM Syria*, 13 July 2009

<sup>2</sup> A family consists of approximately eight members.

rates are reportedly very high as migrant children are required to work to contribute to the family's income. Migrants are further at risk of malnutrition, disease and lack of sufficient access to health care. Particularly vulnerable groups include children, pregnant women and the elderly.

*Addressing immediate needs and increasing resilience to drought: A government and humanitarian aid agency collaborative effort*

The Government of Syria has already taken urgent measures to aid drought-affected areas and populations:

- It has provided food items to vulnerable families in the governorate of Hassakeh.
- A trust fund, partially financed by the state budget, has been established for use in cases of emergency linked to natural disasters.
- The repayment of debts from farmers has been postponed for up to ten years, and farmers who invest in rain-fed state lands in Hassakeh have been exempted from land fees for the 2008-2009 seasons.
- Furthermore, a fund of 2 million Syrian Pounds has been allocated to each affected village to be used for women empowerment activities.
- The government has also initiated a feasibility study sponsored by the Kuwait Fund for Arab Economic Development to install a pumping station on the River Tigris and draw water to the Khabour River. The project is meant to enable the irrigation of 180,000 hectares of farming land.<sup>3</sup>

<sup>3</sup> Outcomes of a meeting held on 4 June 2009 between the Syrian State Planning Commission and the Kuwait Fund for Arab Economic Development [http://www.planning.gov.sy/index.php?module=archives\\_pages&page=details&id=272](http://www.planning.gov.sy/index.php?module=archives_pages&page=details&id=272)

A Syria Drought Response Plan (SDRP)<sup>4</sup> was put together by the United Nations Country Team (UNCT) to aid and supplement the Syrian government's responses. The combination of actions is aimed at providing food and agriculture assistance, supplemented by water and health interventions, and measures to increase drought resilience. The projects included in the SDRP have been presented by IOM, along with UN agencies and the Red Crescent Society. This plan focuses on the needs of 38,000 of the most affected households (some 300,000 people). The targeted donation for the overall plan is USD 53 million, to which IOM appealed for USD 4.8 million.

## IOM Programmatic Responses

### *Going home: Assisting with the voluntary return of the most vulnerable drought-affected families*

IOM's strategy within the SDRP aims at providing assistance for the voluntary and sustainable return of some 4,400 families (approximately 35,000 persons) among the most vulnerable of the environmental migrants to their villages in North-eastern Syria. The aim is to bring these farmers back in preparation for agriculture production for the upcoming harvest season.

As part of its response, IOM is facilitating the creation of a Returns Task Force in coordination with the Government of Syria and relevant UN agencies. IOM is further helping to assess the families suitable for and in need of return. These families will be provided with emergency medical assistance as well as a reintegration grant. Transportation back to home communities is being provided by the Syrian government, which is working with IOM to ensure safe return.

This action is meant to supplement plans by the government and other humanitarian aid organizations for a long-term sustainable return of environmental migrants to their productive agricultural environment. At a later stage, a large-scale return is planned to correspond to the government's project of drawing water to the Khabour River and the Hassakeh region.

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<sup>4</sup> SDRP is available at <http://www.reliefweb.int/rw/rwb.nsf/db900SID/EDIS-7UTKG8?OpenDocument#>



## Considerations in Moving Forward

### *Getting the timing right while addressing short- and long-term concerns*

The large number of affected persons requires enhanced implementation capacity. However, given the available capacities, immediate collaborative action is required to remedy severe climate effects before they reach the tipping point and lead to a severe humanitarian crisis. In addition, sustainable return to drought-hit areas also relies on longer-term development planning to counter desertification. While there is a need for emergency assistance, response should be supported by recovery measures for sustainable livelihoods and improved drought resilience. The Joint Appeal illustrates this comprehensive and collaborative approach among different actors and in line with strategic planning and efforts from the national authorities to support vulnerable populations and environmental migrants.

### *Urgent funding needs*

Although the SDRP has been issued in August, and despite the fact that it is crucial for communities to be able to return in time to prepare for the next harvest, it is proving challenging to identify donors for preventive actions.

## Project Proposal

Assisted Voluntary Return to Drought-Affected Areas

Status	Project Proposal
Project Period	N/A
Expected Beneficiaries	35,200 to 40,000 environmental migrants (approximately 4,000 to 4,500 families)
Requested Budget	USD 4.8 million
Partners	UN Joint Appeal

# YEMEN

## BASIC FACTS

**Total Area:** 536,869 sq km

**Population:** 21,096,000

**Gross Domestic Product (GDP) per capita PPP:** USD 879

**Net Migration Rate:** -1.0 migrants/1,000 population

**Annual Remittances:** USD 1.3 billion

Types of Events	Types of Movement	Types of Response
Floods Political instability	Internal displacement	Disaster risk management / Emergency response Disaster risk reduction

## Integrating DRR in Emergency Assistance to Flood-Displaced Persons

<b>Status</b>	Completed
<b>Project Period</b>	November 2008 to February 2009
<b>Beneficiaries</b>	1,181 internally displaced families (16,892 persons, including 500 internally displaced children and 3,391 women)
<b>Budget</b>	USD 224,191
<b>Donor</b>	United Nations Central Emergency Response Fund (UN-CERF)

### Environmental Challenges and Other Intervening Factors

#### *Washed out*

After a tropical storm (Level 3) soaked Yemen with heavy rains on 24-25 October 2008, widespread flooding swept over the eastern

governorates of Hadramout and Al-Mahra, in the north-western regions of Yemen. The floods caused major damages, which moved the Government of Yemen to declare an emergency situation. Flash floods and surging waters killed at least 80 persons and displaced an additional 20,000 to 25,000 people.

Preliminary assessment by United Nations Country Teams (UNCTs) estimated that as many as 700,000 people had been displaced by the floods. Surging waters caused extensive devastation to livelihoods, including damage to local agriculture, fishing and honey production. There was further infrastructural loss to health, water and sanitation facilities; schools; roads; and the electricity network. At least 3,300 mud-brick houses were totally destroyed, while hundreds of others were rendered uninhabitable.

#### Conflict in Northern Yemen: An ongoing and escalating situation

In mid-August 2009, a sixth round of heavy fighting erupted in the north of Yemen between government forces and Huthi rebels. The conflict first broke out in 2004, and the previous round of fighting ended with a ceasefire in mid-July 2008.

Since 2004, hundreds of people have been killed and thousands displaced as a result of fighting between Shia rebels and government forces in the northern governorate of Sa'dah. The situation remains tense as sporadic clashes continue among the civilian population.

Access of the humanitarian community to populations in need has been seriously hampered. As of September, only intermittent access to the stranded population in Sa'dah town has been secured with the assistance of local populations, leaving many more without much-needed aid. In the meantime, new access routes are being explored with the assistance of the government.

## IOM Programmatic Responses

### *Shelter and non-food items: Meeting the basic needs of affected communities*

IOM's intervention was designed to support the national and international community's efforts to address the urgent humanitarian needs of populations affected by flooding and induced displacement in the governorate of Hadramout. Within the framework of this project, IOM has supported national and international aid agencies to ensure that key gaps in the provision of emergency and temporary shelter

are identified, and that resources are directed to internally displaced persons (IDPs) rendered most vulnerable by the disaster.

IOM's response has complemented ongoing provision of emergency and temporary shelter and shelter-related non-food items (NFIs) assistance and logistics support, where necessary (including the clean-up and rehabilitation of damaged houses and public buildings hosting IDPs). All work, including the procurement, transportation and distribution of construction material and construction tools was conducted in line with Sphere standards.<sup>5</sup> Furthermore, IOM has provided technical support to the government on shelter assistance and camp management, in coordination with United Nations High Commissioner for Refugees (UNHCR) and other relevant UN and non-UN agencies. The NFI pack designed by IOM was welcomed unanimously by the receiving communities and it was also verified that these items were not re-sold in local markets (bazaars).

#### *Helping to alleviate the pain*

Given the trauma that people had experienced and the daily hardships of displacement, IOM helped to facilitate the organization and activities of community support groups and provide psychosocial support in collective accommodation and settlements.

#### *Keeping the vulnerable, women among them, safe*

IOM further supported local NGOs in the organization and running of workshops for IDPs on emergency needs, with particular focus on women. Notably, there were no registered cases of sexual and gender-based violence (SGBV). This is arguably a result of the Yemeni culture, where women and men remain largely separated, as well as protection provided by families and measures implemented at the camp management level to promote security (see box below on solar cookers).

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<sup>5</sup> The Sphere Project was launched in 1997 by a group of humanitarian NGOs and the Red Cross and Red Crescent movement. The Sphere Humanitarian Charter and Minimum Standards in disaster response sets out to improve the quality of assistance provided to people affected by disasters, and to enhance the accountability of the humanitarian system in disaster response. Available at <http://www.sphereproject.org/>

### Harnessing the sun to reduce risk

Disaster risk reduction (DRR) is already being integrated in the emergency response phase with the introduction of solar cookers and training on how to use them. Not only does this new technology address the immediate livelihood needs of the beneficiary population, they are also ecologically friendly and help to promote security.

By not burning local fuel sources, the environmental footprint of displaced populations in their host communities is minimized. Furthermore, by replacing traditional carbon-producing energy sources, international efforts to reduce carbon dioxide emissions are further advanced.

Additionally and importantly, solar cookers eliminate the need for women to search for firewood, thereby reducing the risk of sex- and gender-based violence commonly associated with this activity.



## Lessons Learned and Sustainability

### *Assessing the need to ensure an appropriate response*

An initial comprehensive assessment of flood-affected areas and communities was conducted in early November 2008 to determine the gaps in the humanitarian assistance. Based on these findings and previous rapid assessment by UNCT, a shelter assistance package was

designed to better address the current needs of IDPs. As an example, squat latrines were included in the NFI kit to ensure wider coverage for affected populations to meet their immediate water and sanitation needs and reduce the spread of disease.

### *Gains made through a participatory approach*

The development of the application to the UN-CERF was participative and aimed to involve all the relevant sectors' needs as presented by the engaged Agencies. During the exchange of information, gaps in assistance were identified and the sector-leading agencies facilitated the fulfilment of pressing needs with the assistance of involved stakeholders. This joint effort in the development of the project proved to be a rewarding exercise once implementation commenced.

Partnerships were naturally developed among the sector lead agencies and active NGOs, enabling the exchange of positive experiences and expertise while building an extended working network, particularly with national NGOs. These local organizations proved to be committed and effective, and contributed to the successful implementation of UN-CERF project, i.e. local NGOs facilitating IDP access to shared housing solutions, the transport of children to school, organizing child drawing activities, and sharing information and experiences. There was community solidarity and an open attitude toward aid agencies.

### *Reaching beyond: Expanded aid delivery resulting from efficiency in resource management and delivery*

Local procurement proved to be effective and fast. Due to the reduction in worldwide oil prices and commodities, IOM managed to buy more cement than planned and thus increased the number of cement bags provided to affected communities and increased employment opportunities among IDPs.

Furthermore, the distribution plan was organized in a way that minimizes loading and downloading of cement and NFIs. Although it required a lot of coordination, it has proved efficient to reduce project operating costs while maximizing assistance given to the targeted

beneficiaries group. Because of this flexibility, IOM was able to increase the number of beneficiaries from what had been initially foreseen.

### *Moving towards disaster risk reduction*

Given the recurrent flooding in the north-western regions of Yemen, it is critical that, along with reactive measures to disaster, the humanitarian community works with the national government and local authorities and organizations to formulate a more proactive strategy in mitigating the risks of disaster.

#### UN-CERF: A key instrument for emergency response

The UN-CERF assistance was efficiently implemented through the following means:

- assessment and surveying IDPs with emphasis on vulnerable cases;
- training and coaching surveyors;
- creating and maintaining databases;
- direct assistance for procurement, transportation and distribution of NFIs and reconstruction materials;
- direct assistance in Cash-for-Work modality encouraging households to rebuild their houses;
- direct assistance for repairing schools and community buildings hosting IDPs;
- direct assistance for distribution of children's clothing;
- supporting local NGOs in the organization and running of workshops for IDPs on emergency needs, with particular focus on women roles;
- supporting civil society (university students, graduates and members of women societies) on surveying and counselling female IDPs in four districts.

### Project

#### Emergency Shelter Assistance and IDP Management in Hadhramout, Yemen

<b>Status</b>	Completed
<b>Project Period</b>	November 2008 to February 2009
<b>Number of Beneficiaries</b>	1,181 internally displaced families (including 16,892 people, 500 internally displaced children and 3,391 women)
<b>Budget</b>	USD 224,191
<b>Donor</b>	UN-CERF





ANNEX

COMPENDIUM OF IOM'S ACTIVITIES IN MIGRATION, CLIMATE CHANGE AND THE ENVIRONMENT			AFRICA												
			Sub-Regions												
Country and Regional Programmatic Profiles in Relation to the Types of Events, Movements and Responses			Angola	Egypt	Ethiopia	Kenya	Madagascar	Mauritius	Mozambique	Senegal	Sudan	Zimbabwe	Eastern Africa	Southern Africa	
			TYPES OF EVENTS	<b>Geophysical Hazards</b> (volcanoes, earth/seaquakes, etc)											
Climate related events and processes	<b>Sudden-onset climate disasters</b> (floods, heavy rains, mud/landslides, etc)	X			X		X	X	X			X		X	
	<b>Slow-onset climate disasters</b> (drought, coastal erosion)					X	X		X	X	X	X	X		
	<b>Climate processes</b> (sea-level rise, soil degradation, altered precipitation patterns, El Niño/La Niña, etc.)	X		X	X	X	X	X	X	X	X	X	X	X	
	<b>Resulting threats/risks</b> (food/water insecurity, diseases, etc)					X					X	X	X		
<b>Political factors</b> (instability, intercommunal tensions, conflict, etc)				X	X						X		X		
<b>Other contributing factors</b> (deforestation, unmanaged urbanization, etc)									X	X					
TYPES OF MOVEMENTS	Internal movements	<b>Migration</b>	including rural-urban and permanent / temporary migration		X				X		X				
		<b>Displacement</b>	<b>Internally displaced persons (IDPs)</b>		X		X	X		X		X	X		X
			Secondary displacement									X			
			Return									X			X
	Relocation		X									X		X	
	External movements	<b>Migration</b>	Regional / international migration		X				X		X				
			Cross-border (e.g. pastoralist communities, inter-archipelagos, etc)				X							X	
			Incidence on irregular migration								X				
<b>Displacement</b>										X					
TYPES OF RESPONSES	<b>Climate change adaptation</b>			X		X	X	X		X		X	X		
	including:	Research Migration and the Environment		X				X		X		X	X		
		Migration and Development (incl. Migration as adaptation strategy)		X				X		X					
		Advocacy / awareness raising / policy		X				X		X			X		
	<b>Disaster risk reduction</b>		X		X	X	X	X	X			X	X	X	
	including:	Disaster preparedness (CBDRM, etc)			X				X			X		X	
		Capacity building / technical support (civil protection, etc)			X										
		Conflict management				X							X		
	<b>Disaster risk management</b>		X		X				X			X		X	
	including:	Emergency response		X	X				X			X		X	
		IASC cluster response		X	X				X						
		Health / gender focus										X		X	
<b>Durable solutions</b>		X			X	X		X		X		X			
including:	Community stabilization / livelihoods programmes				X	X		X		X		X			
	Sustainable return				X					X					
	Planned / voluntary relocation						X								

AMERICAS					ASIA AND THE PACIFIC										EUROPE		MIDDLE EAST		
Bolivia	Haiti	Mexico	Peru	Trinidad and Tobago	Bangladesh	Cambodia	Indonesia		Myanmar	Nepal	Pakistan	Philippines	Timor-Leste	Sub-Regions		Azerbaijan	Kosovo/UNSC 1244	Syria	Yemen
							Aceh / Nias	Yogyakarta						Central Asia	North Pacific				
			X	X			X	X			X		X	X		X			
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X
X		X			X	X		X						X	X		X		
X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
						X		X		X					X		X		
	X										X		X			X		X	
X	X	X				X													
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
									X		X							X	
					X	X					X								
		X		X						X						X			
														X					
		X													X				
				X															
		X			X	X		X	X					X	X		X		
						X				X				X					
						X													
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
X	X		X	X		X	X	X	X	X	X	X	X	X		X			
X	X		X	X		X	X			X		X	X	X	X	X			
	X						X												
X	X	X		X	X		X	X	X	X	X	X	X	X		X		X	
X	X	X			X		X	X	X	X	X							X	
X	X				X				X	X	X							X	
X	X						X	X	X	X	X							X	
	X						X	X	X		X				X	X	X		
X	X						X	X	X	X	X						X		
X						X				X	X								









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