
Disaster risk reduction, climate change adaptation and environmental migration

A POLICY PERSPECTIVE



IOM International Organization for Migration



Flood victims wait to receive non-food items being distributed by IOM Ghana. Together with the National Disaster Management Organisation (NADMO) and local partners, IOM gave flood victims from the central region, greater Accra and the western region of Ghana relief kits containing laundry bowls, bathing pails, kitchen sets, soap, sanitary wear, mosquito nets, plastic plates and cups, and blankets, among others. © IOM 2010 - MGH0105

DISASTER RISK REDUCTION, CLIMATE CHANGE ADAPTATION AND ENVIRONMENTAL MIGRATION

The Intergovernmental Panel on Climate Change (IPCC) posited as early as 1990 that “the gravest effects of climate change may be those on human migration.”¹

This paper presents IOM’s efforts to support vulnerable and mobile communities affected by environmental hazards through disaster risk reduction (DRR) and climate change adaptation (CCA) activities conducive to sustainable development.

IOM’s programmes around the world have demonstrated the effectiveness of DRR and CCA for reducing risk exposure and vulnerability and for improved management of migration, particularly in times of crisis.² This paper advocates for further strengthening DRR and CCA mechanisms at the global, regional, national and local levels through an integrated and cross-

sectoral approach supported by appropriate and innovative financing systems.

Furthermore, it argues that migration and environmental migration³ in particular are cross-cutting issues that – in order to be effectively managed – need to be fully recognized and mainstreamed into sustainable development strategies at all levels and in DRR and CCA strategic frameworks, including the Hyogo Framework for Action and the United Nations Framework Convention on Climate Change (UNFCCC) process.

This policy paper has been developed to inform IOM's stakeholders – its membership in particular – and its partners on the Organization's approach to DRR and CCA in the context of its migration mandate. This paper falls under and complements the IOM Policy Brief on Migration, Climate Change and the Environment.⁴

DRR AND CCA: ADDRESSING ENVIRONMENTAL MIGRATION IN A CONTEXT OF HEIGHTENED VULNERABILITY

This section explores the linkages between these two essential pillars of IOM's strategic response to the challenges posed by increased human mobility in a context of heightened risk and vulnerability resulting from a changing climate and other structural factors such as poverty, demographic pressure, weakening ecosystems and unmanaged urbanization.

There has always been a fundamental interdependency between migration and the environment, but in today's world the reality of climate change adds new complexity to this nexus:⁵

- Natural hazards, including geological, hydrological and climatic events, when destroying lives, homes and livelihoods, can lead to sudden, large-scale movements of people to the nearest safe haven. In 2008 alone, over 46 million people were displaced by sudden-onset disasters, of which 20 million were climate-related disasters.⁶
- Environmentally induced displacement, although most visible because of media attention, accounts for only a small portion of environmental migration. IOM considers that most environmental migration is, and will increasingly be, taking place in the context of slow-onset processes.

- Migratory responses to environmental degradation, especially at early and intermediate stages, are often temporary in nature and serve as an adaptation strategy to environmental change. "Eating the dry season"⁷ by sending a family member to the nearest city is a widespread strategy to adapt to difficult environmental conditions. Some communities, such as pastoralist or nomadic communities in the Sahel, the Middle East or Mongolia, have turned this practice into a way of living.
- At advanced stages of environmental degradation, when livelihoods can no longer be sustained, communities often resort to permanent migration to less affected areas or to urban and semi-rural⁸ centres. In the worst cases, relocation of affected populations either internally or to a third country may be needed.
- If inadequately managed, environmental migration can negatively affect the stability of host environments and communities by increasing pressures on land and water resources (especially in rural areas) and/or on public services (health care, potable water, employment opportunities). Dhaka's slum population, estimated at 3.4 million, is receiving as many as 400,000 migrants a year, most of them poor people arriving from rural and coastal areas experiencing increasing environmental hardship.⁹
- Whether a survival or adaptation strategy, or, as is often the case, something in-between, migration is not an option open to everyone. As migration requires resources, the most vulnerable people are often not able to move. Within any given set of social and environmental circumstances, decisions to move or stay depend on incomes, social networks, local patterns of gender relations and the perceived alternatives to moving.

All in all, forecasts of the number of persons having to move due to climate change and environmental degradation by 2050 vary by a factor 40 (between 25 million and 1 billion) and largely depend on which of the climate scenarios will materialize. While the exact magnitude may be uncertain, the actual impact on people is not (IOM, 2009).¹⁰

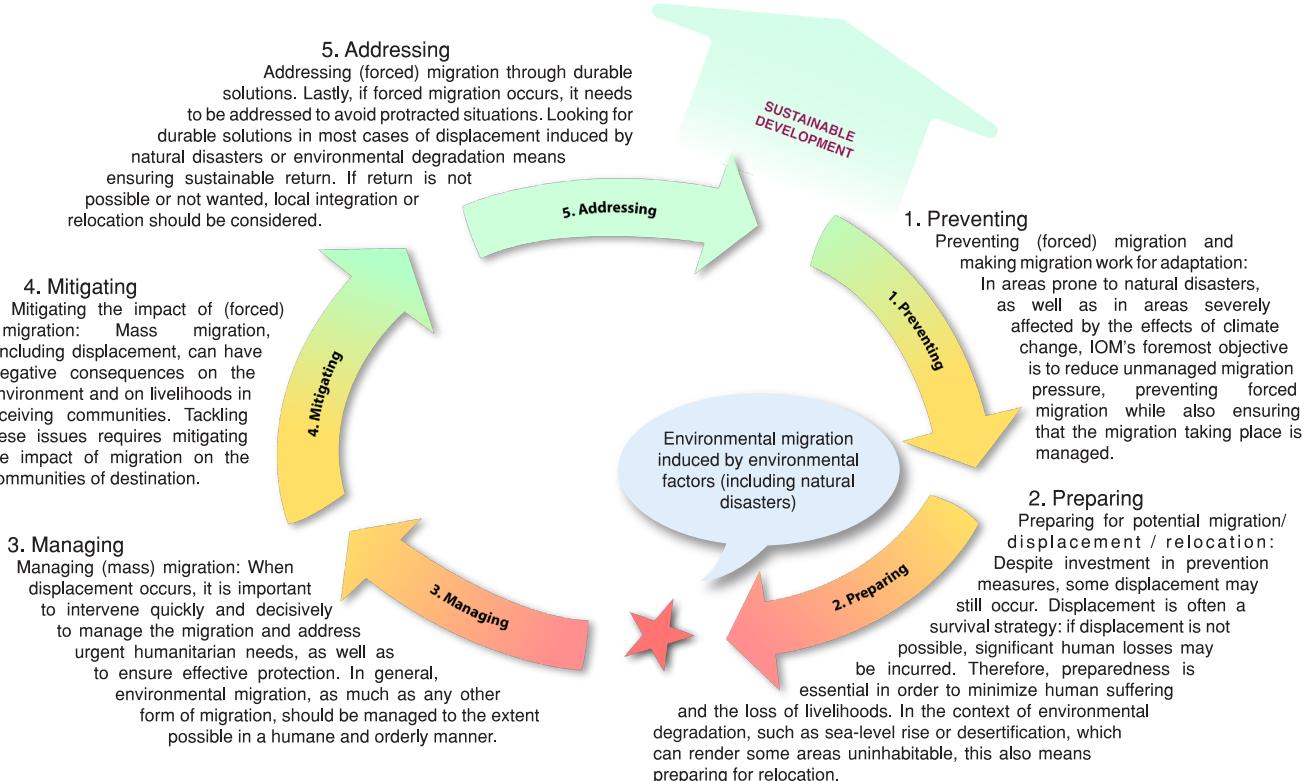
The application of multidimensional vulnerability assessments, including human security assessments, has shown that human vulnerability to environmental factors is compounded by a broad range of issues, including demographic pressure, poor urban governance, declining ecosystems, poverty, conflicts and vulnerable rural livelihoods.¹¹ In this context, climate change is best understood as exacerbating these underlying structural factors of vulnerability.

Through its impact on the environment, climate change is increasing the vulnerability of communities around the world, in particular in less developed countries, and leading to increased migratory flows; it is for this reason that IOM attaches high priority to addressing environmental migration. IOM seeks to better understand and anticipate these movements through a combination of extensive policy-oriented research (including on cross-cutting issues such as gender, health and security), multidimensional vulnerability assessments and focused programmatic activities.

In general terms, IOM's response aims to increase communities' resilience to underlying risk factors and expected changes in their natural environment. Its approach is community-oriented and focuses on empowering local actors (including the affected populations) as the primary responders, while supporting efforts to strengthen the interaction with responsibility holders (national and local authorities) and develop their capacities. It is based on the following three-pronged approach (see also Figure 1, which presents a more detailed version of the migration management cycle):

- minimize forced migration as much as possible;
- where forced migration does occur, ensure assistance and protection for the people affected, while looking at durable solutions;¹²
- facilitate the role of migration as an adaptation strategy to climate change.

Figure 1: Understanding the migration management cycle



Supporting States to protect and assist affected populations

States bear the primary responsibility to protect and assist victims of environmental disasters occurring within their territories.¹³ Each State also has the right – and the duty – to defend and protect its nationals abroad, and to allow other States to protect their nationals residing on its territory.

The responsibility of IOM and other international actors is to support States in undertaking this duty, including by strengthening the capacity of State authorities and institutions to respond. Mainly upon the States' request, substitution of the State's role can be considered in cases of imminent or ongoing humanitarian emergency, principally through the United Nations humanitarian coordinated response system, as in Pakistan after the devastating floods in August 2010 that affected more than 20 million people.

Through this wide range of activities, in the context of humanitarian assistance and development, IOM has gained significant experience in implementing DRR activities and is increasingly

engaged in the new area of CCA, making these tools two essential and complementary pillars of IOM's strategic migration management framework.

Striving for durable solutions to end displacement

Displaced persons have the same rights as other citizens within their own country, but, because of their displacement situation, they are often more vulnerable to human rights violations and in need of basic assistance, including shelter, food or access to water and health care. The 1998 Guiding Principles on Internal Displacement define the different protection and assistance needs in line with basic human rights principles.¹⁴

As outlined in Principle 28, internally displaced persons (IDPs) have the right to a durable solution, but often need assistance. A durable solution is reached when IDPs no longer have specific assistance and protection needs linked to their displacement. This can be achieved through:

- sustainable reintegration at the place of origin (or "return");
- sustainable local integration in areas where IDPs take refuge (local integration);
- sustainable integration in another part of the country (settlement elsewhere in the country).

The search for durable solutions for IDPs should be understood as a gradual and often long-term and complex process that addresses human rights and humanitarian, development, reconstruction and peace-building challenges, and therefore requires the coordinated and timely engagement of different actors.

The Framework on Durable Solutions, which was endorsed by the Inter-Agency Standing Committee Working Group in December 2009, addresses durable solutions following conflict and natural disasters.¹⁵ It describes the key human rights-based principles that should guide the search for durable solutions and establishes the criteria to determine to what extent a durable solution has been reached. The Framework also offers examples of indicators that, if properly adapted to the local context, can inform efforts to monitor progress towards durable solutions.



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

DISASTER RISK MANAGEMENT, DISASTER RISK REDUCTION AND CLIMATE CHANGE ADAPTATION

The next section introduces the concepts of DRM, DRR and CCA and looks at the commonalities and differences between these three areas of work. It then illustrates how IOM has integrated them into its programmatic framework.

To support global efforts to harmonize terminologies and ensure internal cohesion, IOM adopted the definitions of disaster risk management (DRM), disaster risk reduction

(DRR) and climate change adaptation (CCA) proposed by the United Nations International Strategy for Disaster Reduction (UNISDR).

Abridged definitions from UNISDR Terminology on Disaster Risk Reduction (2009)¹⁶

Disaster risk management characterizes activities that aim to avoid, lessen or transfer the adverse effect of hazards through prevention, mitigation and preparedness.

Disaster risk reduction includes all efforts that can contribute to reducing risk by analysing the causal factors of disasters, reducing exposure to hazards and lessening vulnerability of people and livelihoods.

Climate change adaptation encompasses activities that contribute to adjustment to actual or expected changes in the system induced by climate change.

It should be noted that in different parts of the world, DRM and DRR are used interchangeably. Although the two concepts are indeed very similar, they emerged from different contexts. While the former is mainly used by humanitarian actors, the latter stems from developmental considerations, as explained below. For the purpose of this paper, a distinction is made between the two concepts based on the level at which they address the root causes of disasters. However, it is important to underline that, from

a policy and operational viewpoint, it is essential for practitioners to be aware of the basic elements that constitute disaster risk and how to address them in the most efficient, cost-effective and sustainable manner.

Disaster risk management within IOM’s work

IOM’s involvement in coordinated humanitarian response stems from its Constitution and was

expanded upon in the Organization's 12-point Strategy¹⁷ adopted by the membership in 2007. DRM is at the core of humanitarian emergency response as it includes life-saving activities implemented in the course or in the immediate aftermath of a disaster. Timely and efficient assistance and protection depend on emergency preparedness, namely increasing the capacity of the humanitarian community to identify potential crises and be ready to deploy an effective response when a crisis unfolds.

Since the 1990s, IOM and other international organizations have increasingly been called upon by States to assist and protect displaced populations affected by natural disasters that overwhelmed national and local capacities. Hurricane Mitch, which hit Central America in

October 1998 and wreaked havoc in Honduras, led IOM to deploy one of its largest humanitarian emergency operations at the time in response to a natural disaster. Over time, there has been an evolution in the type of response, from ad hoc interventions to continuous and systematic response, especially in countries hit by recurring disasters (such as hurricanes and seasonal flooding in the Caribbean), but with limited resources to deal with them.

To effectively intervene in emergency and post-crisis situations, IOM has developed a comprehensive framework with the overall objective of ending displacement through the provision of durable solutions and the creation of an environment conducive to sustainable development. The framework can be seen



A temporary migrant worker in her bakery in Nariño, Colombia, a business she established thanks to the savings generated during her visit to Spain through IOM's Temporary and Circular Labour Migration Programme. © IOM 2007 - MCO0858

as a process encompassing different phases, often overlapping, starting with the emergency response to save lives and provide protection, and moving towards post-crisis phases, including recovery and reconstruction, and mitigation and preparedness.

Within this framework for intervention, IOM has developed its capacities in terms of DRM to provide assistance and protection to displaced populations. This has happened mostly within the Inter-Agency Standing Committee (IASC),¹⁸ where IOM has built its emergency policy framework and its operational procedures along the lines of other lead humanitarian actors from non-governmental organizations (NGOs), the United Nations and the International Red Cross and Red Crescent Movement communities.

Since the 2005 humanitarian reform, IOM's recognized long-standing experience with displaced populations and its leadership and commitment are shown in its role as Global Cluster Lead for Camp Coordination and Camp Management (CCCM) in natural disasters and its active engagement in the Logistics, Emergency Shelter, Protection, Health and Early Recovery Clusters. By allocating sectoral responsibility, the cluster system brings more predictability and efficiency to humanitarian emergency response. Most recently, IOM has taken a leading role in response to the two major natural disasters that occurred in 2010: the devastating earthquake in Haiti (CCCM Global Cluster Lead) and the floods in Pakistan that left more than 1.9 million households in need of shelter (Emergency Shelter Cluster Lead).

The CCCM Cluster is cross-sectoral as it aims to facilitate the coordination of services in response to the assistance and protection needs of IDPs in camp and camp-like situations. It contributes to the stabilization of these vulnerable populations in order to enable the prompt identification of durable solutions to end their displacement.

Disaster risk reduction within IOM's work

The 2009 Global Assessment Report on Disaster Risk Reduction established that by addressing the underlying drivers of disaster risk it is possible to reduce poverty and to adapt to climate change.

Owing to its cross-cutting mandate to help ensure the orderly and humane management of migration, IOM has been looking beyond the emergency phase to promote "durable solutions" in response to displacement induced by natural disasters. This includes facilitating sustainable return or, if the latter is not possible or not wanted, supporting the relocation or local integration of the affected displaced populations. In the past decade, IOM recognized the specificity of activities aimed at stabilizing communities after a crisis, as these types of activities not only help to alleviate the impact of hazards, but also to address some of the root causes of populations' exposure to risk, including systemic factors influencing vulnerability. Limited rural livelihoods, poor urban and local governance, ecosystem decline, gender inequality and limited access to education, credit and financial systems are among the major structural factors contributing to vulnerability.¹⁹

Through its presence on the ground in the immediate aftermath of an emergency – and often before the emergency occurs – and its initial engagement in the emergency phase, IOM finds itself in a position to implement DRR activities. This reflects the fact that the post-crisis phase represents the main window of opportunity to invest in risk reduction, as the communities and the authorities are in the right mindset for "building back better" and for investing in tools to reduce risks – ranging from early warning early action²⁰ to essential structural reforms (e.g. land tenure and property rights). Funding is also usually available in the immediate aftermath of a crisis rather than at any other moment; in fact, despite the proven cost-effectiveness of DRR activities, it is still difficult to mobilize dedicated financial resources.

IOM is strongly committed to the DRR agenda and to the implementation of activities contributing to reducing and preventing risks. The objective

pursued entails a longer-term vision that requires bridging and even integrating the humanitarian agenda with longstanding development plans. This is the objective spelled out in the 2005–2015 Hyogo Framework for Action²¹ and its preceding instruments. As stated in these documents, DRR stemmed from the need to integrate disaster risk

into sustainable development in order to better bridge humanitarian emergency response with development efforts. With the same purpose, IOM engages in the Early Recovery Cluster to support the transition from relief to recovery and reconstruction.

Disaster preparedness: DRM or DRR?

Activities generally referred to as disaster preparedness can help illustrate how to draw the line between DRM and DRR. Preparedness activities that aim to increase response capacity (organizational capacity) fall under DRM, whereas preparedness activities that contribute to risk reduction by addressing its root causes, namely the lack of capacity of the national and local stakeholders (capacity-building or capacity development of civil protection, for instance), fall under DRR.

Capacity development of national and local authorities requires a longer-term engagement on behalf of the international partners, which is often a challenge due to short-term humanitarian financing. Furthermore, capacity development plans need to be consistent with the broader development framework. While humanitarian agencies and NGOs can bring their expertise to DRM, development actors can play a crucial role in securing political support and donors' long-term engagement. This is a good illustration of the complementarities between the two communities of practice.

Assisting governments in building disaster preparedness capacity: the case of Timor-Leste

As a post-conflict country, Timor-Leste had a weakened institutional framework which lacked the capacity to address growing environmental threats. The last period of political and civil unrest was in 2006, which resulted in the destruction of homes and other property and the displacement of over 100,000 people.

IOM was working in Timor-Leste during the 1989–2001 crisis in close cooperation with the authorities to help with the peace-building process and provide humanitarian and long-term assistance and protection to displaced persons. This put IOM in a privileged position to assess vulnerabilities and propose solutions.

In view of Timor-Leste's limited capacity to effectively respond to and address the causes and consequences of natural disasters or other environment-related hazards, since May 2008 IOM has been implementing a DRR project that takes a comprehensive approach to strengthening the ability of the Government and district and local actors to better prevent, mitigate and manage disasters.²²

Participating in the UNISDR has enabled IOM to utilize and build on the resources of diverse stakeholders, national authorities, NGOs, international organizations and civil society organizations committed to building resilience. Resources include, *inter alia*, policy and

guidance notes, assessment tools and training material. It has also helped IOM to better align its contribution to fulfilling the five priorities contained in the Hyogo Framework for Action, which governments endorsed and committed themselves to implement.

The five priorities of the Hyogo Framework for Action 2005–2015

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

Reducing risk is not only about minimizing the damage caused by a disaster in terms of lives and livelihoods. The DRR agenda encourages every country to address the root causes of disasters in a broader sense within and through its strategy for development. It includes linking DRR with poverty reduction strategies and other longer-term development plans such as the United Nations Millennium Development Goals (MDGs) (see the section Linking DRM, DRR and CCA: A common goal).

The *State of World Population 2009* shows that “climate change is more than an issue of energy efficiency or industrial carbon emissions; it is also an issue of population dynamics, poverty and gender equity.”²³

In line with, *inter alia*, the IPCC findings, the Bali Road Map endorsed in December 2007 by the States Parties to the Convention recognized that addressing the impact of a changing climate on vulnerable populations is as important and necessary as curbing carbon dioxide emissions. The complementarities between the so-called “adaptation pillar” and “mitigation pillar” have become a fundamental tenet in the UNFCCC negotiation process which recognizes the need to focus efforts simultaneously on preventing – or at least reducing – global warming and adapting to its consequences.

Along the way, the environmental community was joined by the development and later by the humanitarian community in the shared belief that different communities of practice can make diverse but complementary contributions to achieving the goal of sustainable development. The humanitarian community is concerned by the increase in the number and frequency of extreme weather events and weather variability (e.g. unseasonal rains and droughts) and their impact on vulnerable communities, resulting in displacement, loss of lives and livelihoods, and growing needs in terms of humanitarian assistance and protection. These developments bring urgency to the need to strengthen linkages between humanitarian action and development

Climate change adaptation within IOM’s work

The concept of CCA emerged from the UNFCCC negotiation process. While originally the main objective of this process was to mitigate climate change impact on ecosystems by addressing carbon dioxide emissions (Kyoto Protocol), it has since evolved following new scientific evidence and increased public and political engagement.

programming, as well as between community-level responses and national-level strategies.

Since the inclusion of the “adaptation pillar” in the UNFCCC process, important groundwork has been covered to define and characterize this concept and to implement adaptation strategies and activities at the national or community level. One concrete illustration of this is the process taking place under the aegis of the UNFCCC to develop national adaptation programmes of action for least developed countries.²⁴ This inclusive and participatory consultation process helps identify priority areas and to respond to urgent and immediate needs for adapting to climate change. This type of strategic policy planning has the potential to be expanded to many other developing countries.

IOM supports these processes and is committed to bringing its expertise to integrating the human mobility dimension into CCA programmes.²⁵ Integrating population dynamics can help to better understand the impact of environmental factors on population movements and distribution. More detailed and gender-sensitive information on which areas and populations will be most affected is required to effectively address the impacts of climate change on human mobility.

What is adaptation?

Adaptation is broadly defined as a set of actions “to reduce the impacts of climate change that are happening now and increase resilience to future impacts”.²⁶ It encompasses a range of activities that have in common an explicit focus, entirely or partially, on the impacts of climate change. It includes numerous thematic areas such as:

- Natural resources management
- Agriculture/Food security
- Water resources
- Public health
- DRM
- Coastal zone development
- Community-based adaptation

IOM and its partners have contributed to the formulation of the adaptation framework in relation to human mobility and submitted a number of contributions to the UNFCCC negotiators.²⁷ In this respect, IOM argues that migration is not just a failure in terms of adaptation; it is also one of the possible adaptation strategies to climate and environmental change.

A number of IOM projects can serve as concrete illustrations of how migration can be used as an adaptation strategy for vulnerable populations and can contribute to sustainable development as it enables local populations to increase their resilience to environmental challenges and offers them an alternative to permanent migration, whether to urban slums or abroad.



The flooding in Pakistan has damaged or destroyed an estimated 288,000 homes and affected more than 13 million people. IOM is distributing all-weather tents and relief kits to flood victims but as the number of affected people rises, more assistance is urgently needed.

Migration as an adaptation strategy²⁸

Environmental migration is often portrayed as a failure to adapt to a changing environment and as a worst case scenario. However, while migration can be a manifestation of acute vulnerability, it can also represent a logical and legitimate livelihood diversification and adaptation strategy. Migration as an adaptation strategy has already been used for millennia and is likely to be of growing importance in the future.

Migration can help reduce risks to lives, livelihoods and ecosystems; it contributes to income diversification and enhances overall capacity of households and communities to cope with the adverse effects of environmental and climate change.

The Colombian Temporary and Circular Labour Migration Programme

This programme offers a livelihood alternative through temporary work abroad to families confronted with natural disasters.²⁹ 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 among the rural communities. For instance, in 2007, 162 women received training in leadership and local development to bolster their capacity as potential agents of development.

LINKING DRM, DRR AND CCA:A COMMON GOAL

In the context of heightened vulnerability to natural disasters and environmental degradation, sustainable development is a key objective that can be achieved through:

- responding to disasters (DRM);
- reducing risk and exposure to hazards (DRR);
- addressing the effects of a changing climate (CCA).

DRM, DRR and CCA are complementary tools and have a cumulative effect, reinforcing each other in building resilience and the capacity to cope with adverse and changing conditions. Consequently, IOM, like many other actors, has been consistently highlighting the need to develop comprehensive approaches across sectors. Beyond the so-called institutional divide between the humanitarian, development and environmental communities, IOM, looking at the cross-cutting issue of migration, believes that we share a common goal of promoting the resilience of communities and countries based on understanding the nature of risks and vulnerability and the need to adjust accordingly.

What is sustainable development?³⁰

The concept of sustainable development was first coined by the Brundtland Commission in 1987 and further supported by the Rio Summit in 1992 and the United Nations 2005 World Summit Outcome document. In its short and succinct definition, sustainable development is “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

Given that this definition leaves a number of questions unanswered, in particular on the measurement of sustainability and the interlinkages among the economic, social and environmental dimensions of sustainable development, it is still being refined. In the meantime, a range of tools and mechanisms to support policymakers in formulating and implementing sustainable development strategies have been established. These tools integrate, *inter alia*, sets of indicators to analyse the interdependency between economic development, social development and environmental protection.

Climate change – including through its impact on hydrometeorological events – can jeopardize development outcomes and presents a fundamental challenge to achieving sustainable development. Goal 7 (Target 1) of the MDGs is to integrate the principles of sustainable

development into development strategies. Consequently, DRM, DRR and CCA have an important role to play in contributing to the MDGs and to country-specific development strategies with an emphasis on sustainable development.

The Millennium Development Goals

Among the eight Goals, at least three have clear linkages with DRR and CCA and are relevant in the context of environmental migration:

- Goal 1: Eradicate extreme poverty and hunger
- Goal 3: Promote gender equality and empower women
- Goal 7: Ensure environmental sustainability
 - In particular Target 1: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources
 - As well as Targets 2, 3 and 4
- Goal 8: Develop a global partnership for development
 - In particular Target 1: Address the special needs of least developed countries, landlocked countries and small island developing States

In this context of increased human mobility, including as a result of environmental factors, it is essential to recognize and better understand the role migration plays in development. IOM is the leading organization in promoting linkages between migration and development at the policy, research and operational levels.³¹ IOM has been working on ensuring that migration is included in the development agenda, and

its efforts have demonstrated that orderly and managed population movements can result in a win-win solution for migrants and the countries of origin and destination.³² For instance, remittances and other forms of support from the diaspora can play an essential role in the recovery process by injecting much-needed cash into a devastated economy and reducing the dependence on humanitarian aid.³³

Complementarities and differences between DRM, DRR and CCA

In simple terms, while disaster risk reduction (DRR) goes beyond disaster risk management (DRM) in addressing the root causes of vulnerability, climate change adaptation (CCA) goes beyond DRR by looking at the dynamic elements brought about by a changing climate and their role in exacerbating the vulnerabilities of populations now and in the future.

While CCA offers a long-term perspective, DRR is broader in scope, as it looks not only at hydrometeorological hazards, but also at other natural hazards (including geophysical hazards, such as earthquakes or volcanic eruptions) and all other types of hazards (including man-made disasters, such as chemical, biological, radiological and nuclear incidents).

Operationally, there is significant overlap between DRR and CCA in terms of response to hydrometeorological hazards and water issues, where the activities, tools and objectives of both approaches are very similar. CCA is a rather new field of work compared with DRR, which is already well-established, in particular through the implementation of the Hyogo Framework for

Action, the UNISDR network and the DRR regional and national platforms. An important added value of CCA is that it brings a dynamic element into the otherwise static planning of DRR. For instance, models of expected sea-level rise in urban coastal areas can enable city planners to identify vulnerable areas and act accordingly in order to reduce emerging and future risks.

Owing to its linkages with humanitarian emergency response, DRR is often the first line of protection against weather-related disasters. At the same time, as it addresses climate variability, it is an essential part of adaptation. This is reflected in the current version of the UNFCCC negotiating text, which explicitly recognizes synergies between sustainable development, good governance, poverty reduction, gender equality and DRR in achieving the MDGs. Conversely, the Hyogo Framework for Action

recognizes the need to integrate “existing climate variability and future climate change into strategies for the reduction of disaster risk and adaptation to climate change.”³⁴

Consequently, there is plenty of room for cross-fertilization. This should be facilitated by the growing recognition among the different communities of the added value of DRM, DRR and CAA, in particular in a context of tight financial resources.³⁵ The DRR and humanitarian communities have agreed that, in order to be successful, activities should, to the extent possible, be climate-proof and, when possible and relevant, take into account the potential risks induced by a changing climate.³⁶ For instance, this involves avoiding activities that would increase vulnerability to the effects of climate change in the mid- and longer-term, for example to rebuild in areas exposed to expected sea-level rise.

MIGRATION MANAGEMENT FOR SUSTAINABLE DEVELOPMENT: BUILDING ON DRM, DRR AND CCA

To foster sustainable development while making migration a choice, IOM is engaged in building the resilience of vulnerable countries and communities to a changing climate, environmental hazards and structural factors.

IOM calls for further integrating migration-related programmes into comprehensive action for the benefit of vulnerable countries and communities affected by the impact of climate change, environmental degradation and other factors of vulnerability, such as poverty. As illustrated by Figure 2, an effective combination of development and humanitarian approaches is essential when addressing environmental migration as it includes a wide spectrum of movements from forced to voluntary and mass migration (following sudden-onset disasters) to temporary and circular movements (in the context of slow-onset processes).

Recommendations

In view of the above, the following initiatives are recommended:

- Raise policy and public awareness of the importance of DRR and CCA in addressing environmental migration and the need for increased consideration of the issue of human

mobility in DRR and CCA strategies conducive to sustainable development. Interaction can be facilitated at the national and regional levels through State-appointed focal points for the Hyogo Framework for Action and climate change.

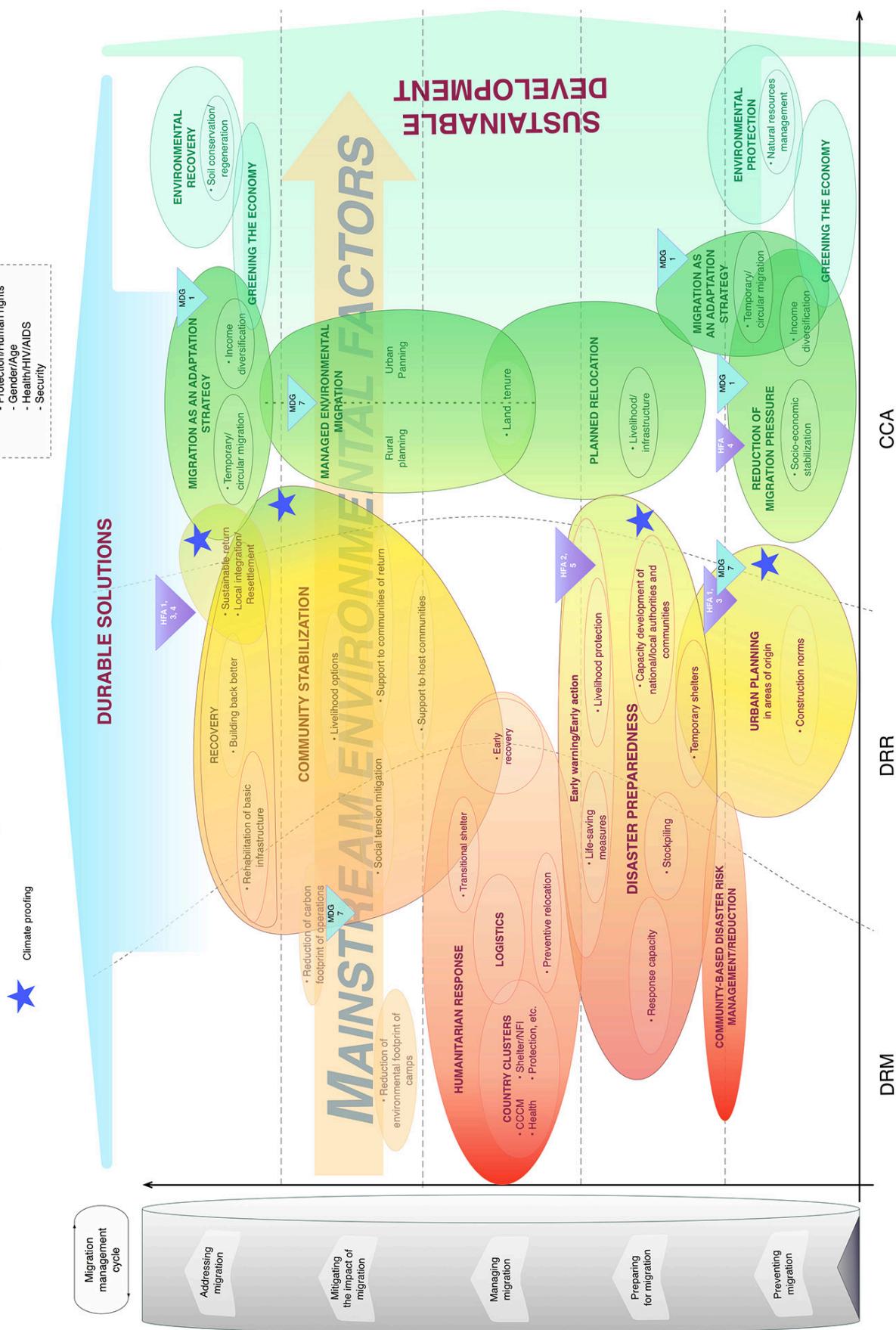
- Support further research into developing multi-hazard assessment tools mindful of the cross-cutting issues of mobility, gender equality, health and security. Issues of particular relevance that would require further investigation include, *inter alia*, land and property impact on durable solutions, the role of remittances in recovery or the impact of migration on urbanization.
- Develop policy coherence at the national and international levels by mainstreaming DRR and CCA into migration management policies and practice; this requires strengthening linkages with other relevant policy domains, such as development, environment and humanitarian portfolios.

- Minimize forced displacement by consistently investing resources in DRR and CCA to increase the resilience of affected communities while bolstering humanitarian action with adequate resources to meet the growing challenge of climate change, including measures to ensure adequate assistance and protection for people on the move as a result of environmental factors.
- Facilitate the role of migration as part of DRR and CCA, for instance, by developing temporary and circular labour migration schemes with environmentally vulnerable communities, where appropriate, particularly at less advanced stages of environmental degradation, and seeking to strengthen the developmental benefits of such migration for areas of origin.

One of the first planned transitional settlements, Santo 17, in the town of Croix-des-Bouquets, Haiti, was officially opened on 13 March. It occupies on 4.5 hectares and is expected to shelter 1,400 displaced individuals. Zones 1 and 2 of Santo 17 have 130 family tents provided by IOM. © IOM 2010 - MHT0493 (Photo: Mark Turner)



Figure 2: IOM's sectors of activities within the migration management cycle



ENDNOTES

1. *Climate Change: The IPCC 1990 and 1992 Assessments*, WMO/UNEP, 1992, p. 103, para. 5.0.10., available at: http://www.ipcc.ch/ipccreports/far/IPCC_1990_and_1992_Assessments/English/ipcc-90-92-assessments-full-report.pdf
2. For an overview of IOM's activities that address natural disasters and the consequences of climate change, see the *Compendium of IOM's Activities in Migration, Climate Change and the Environment*, IOM, Geneva, 2009. A clickable map is available at http://www.iom.int/Template/gmaps/migration_environmental/. The full report can be downloaded at: www.iom.int/jahia/webdav/shared/shared/mainsite/activities/env_degradation/compendium_climate_change.pdf
3. IOM defines "environmental migrants" as 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.
4. See IOM Policy Brief on Migration, Climate Change and the Environment, May 2009, available at: www.iom.int/jahia/webdav/shared/shared/mainsite/activities/env_degradation/iom_policybrief_may09_en.pdf
5. On the complex nexus linking migration, climate change and the environment, see *Migration, Environment and Climate Change: Assessing the Evidence*, IOM, 2009, available at: http://publications.iom.int/bookstore/index.php?main_page=product_info&products_id=539
6. Figures presented in the study *Monitoring disaster displacement in the context of climate change*, IDMC/OCHA, 2009, available at: [www.internal-displacement.org/8025708F004CFA06/\(httpPublications\)/451D224B41C04246C12576390031FF63?OpenDocument](http://www.internal-displacement.org/8025708F004CFA06/(httpPublications)/451D224B41C04246C12576390031FF63?OpenDocument)
7. "Eating the dry season" is an expression used in the Sahel to describe the temporary migration of young adults during dry periods from their rural communities to urban centres in search for work. See O. Brown (2007), *Eating the Dry Season – Labour mobility as a coping strategy for climate change*, IISD Commentary, Winnipeg, Canada, International Institute for Sustainable Development; and D. Rain (1999), *Eaters of the Dry Season: Circular Labor Migration in the West African Sahel*. Boulder, Westview Press.
8. The expression "semi-rural" is used to describe outlying areas adjacent to suburbs, which often combine both rural and urban characteristics.
9. World Bank, Dhaka: Improving Living Conditions for the Urban Poor. Bangladesh Development Series. Paper No. 17, World Bank, Dhaka, 2007.
10. See IOM Policy Brief on Migration, Climate Change and the Environment, May 2009, available at: www.iom.int/jahia/webdav/shared/shared/mainsite/activities/env_degradation/iom_policybrief_may09_en.pdf
11. For an in-depth analysis of the structural factors of risk, see UNISDR, *Risk and poverty in a changing climate: Invest today for a safer tomorrow*. 2009 Global Assessment Report on Disaster Risk Reduction, United Nations, Geneva, 2009, available at: www.preventionweb.net/english/hyogo/gar/report/index.php?id=1130&pid:34&pih:2
12. 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. 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. See the *Compendium of IOM's Activities in Migration, Climate Change and the Environment*, IOM, Geneva, 2009, p. 42.
13. See the 1991 United Nations General Assembly resolution 46/182 (A/RES/46/182), which states that "each State has the responsibility first and foremost to take care of the victims of natural disasters and other emergencies occurring on its territory".
14. The 1998 Guiding Principles on Internal Displacement are available at: www.idpguidingprinciples.org

15. The Framework on Durable Solutions is available at: www.brookings.edu/reports/2010/04_durable_solutions.aspx
16. UNISDR Terminology on Disaster Risk Reduction (2009) is available at <http://www.unisdr.org/eng/library/UNISDR-terminology-2009-eng.pdf>
17. As stated in strategic point 9 of IOM's 12-point Strategy, adopted by the membership in 2007, the Organization is committed "To participate in coordinated humanitarian responses [...] and to provide migration services [...] as relates to the needs of individuals, thereby contributing to their protection". See www.iom.int/jahia/webdav/site/myjahiasite/shared/shared/mainsite/published_docs/books/iomfolder_eng/iom_strategic_focus_en.pdf; and the IOM 1951 Constitution, available at: http://www.iom.int/jahia/webdav/site/myjahiasite/shared/shared/mainsite/about_iom/iom_constitution_eng_booklet.pdf
18. The IASC is the primary mechanism for inter-agency coordination of humanitarian assistance. It is a unique forum involving the key United Nations and non-United Nations humanitarian partners. See www.humanitarianinfo.org/iasc/pageloader.aspx
19. For a detailed analysis of the components of these systemic factors, see UNISDR, *Risk and poverty in a changing climate: Invest today for a safer tomorrow*, Global Assessment Report on Disaster Risk Reduction, United Nations, Geneva, 2009, chapter 4, available at: <http://www.preventionweb.net/english/hyogo/gar/report/index.php?id=1130>
20. According to the UNISDR Terminology on Disaster Risk Reduction (2009), early warning systems are: "The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss."
21. The Hyogo Framework for Action is the key instrument for implementing disaster risk reduction, adopted by the Member States of the United Nations. Its overarching goal is to build the resilience of nations and communities to disasters, by achieving a substantive reduction in disaster losses by 2015 – in lives, and in the social, economic and environmental assets of communities and countries. See www.unisdr.org/eng/hfa/hfa.htm
22. For further information, see the *Compendium of IOM's Activities in Migration, Climate Change and the Environment*, IOM, Geneva, 2009, p. 255–261.
23. The *State of World Population 2009: Facing a Changing World: Women, Population and Climate*, UNFPA, 2009, is available at: http://www.unfpa.org/swp/2009/en/pdf/EN_SOWP09.pdf
24. See http://unfccc.int/national_reports/napa/items/2719.php
25. IOM supported the Ministry of Environment and Forest of Bangladesh in preparing a policy dialogue on this issue to coincide with the one-year anniversary of the devastating cyclone Aila on 25 May 2010. See http://www.iom.org.bd/index.php?option=com_content&view=article&id=45
26. See UNFCCC definition at <http://unfccc.int/adaptation/items/4159.php>
27. IOM submissions to the UNFCCC are available at: <http://www.iom.int/jahia/Jahia/activities/by-theme/migration-climate-change-environmental-degradation/copenhagen-and-beyond/cache/offonce/>
28. For additional information, see www.iom.int/jahia/Jahia/complex-nexus#problem
29. For additional information, see <http://www.iom.int/jahia/Jahia/colombia>
30. For additional information on sustainable development see also the World Summit on Sustainable Development, Johannesburg, 2002, at <http://www.un.org/events/wssd/> and the OECD Report by the Commission on the Measurement of Economic Performance and Social Progress (J. Stiglitz, A. Sen and J.-P. Fitoussi), 2009, at http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf
31. For more information on IOM's work on migration and development, see www.iom.int/jahia/Jahia/activities/by-theme/migration-development/cache/offonce and the related links.
32. See the IOM Policy Brief on Migration and the Millennium Development Goals, September 2007, available at http://www.iom.int/jahia/webdav/shared/shared/mainsite/policy_and_research/policy_documents/policy_brief.pdf

33. IOM Guatemala, Survey on Remittances 2008 and Environment, Working Notebooks on Migration, No. 26, 2008.
34. See the Hyogo Framework for Action 2005–2015: Building the Resilience of Nations and Communities to Disasters (www.unisdr.org/eng/hfa/hfa.htm). In September 2009, the Hyogo Framework for Action mid-term review process started with broad consultations and thematic platform events. The final report is expected to be published early 2011.
35. The IASC Task Force on Climate Change, established in 2008, is an illustration of the beneficial synergies: facilitated by the International Federation of Red Cross and Red Crescent Societies, with the strong support of their Climate Centre, it included UNISDR as a permanent participant. IOM has been supporting the work of the Task Force, including by co-chairing the sub-group dealing specifically with migration, displacement and climate change. See “Submissions to the UNFCCC”, available at: <http://www.iom.int/jahia/Jahia/activities/by-theme/migration-climate-change-environmental-degradation/copenhagen-and-beyond/cache/offonce/>
36. See the result of the IASC regional and national consultations in 2009 on addressing the humanitarian challenges of climate change, available at: <http://www.humanitarianinfo.org/iasc/downloaddoc.aspx?docID=4862&type=any>



Produce in Chilomo, Mozambique. Income-generating activities can contribute to reduce the vulnerability of the most affected persons after a disaster. © IOM 2008

Some areas in Muntinlupa, the Philippines, especially those near Laguna Lake, remained flooded three weeks after the last major typhoon left the country. Several typhoons hit the Philippines in succession from September to October, causing great damage to lives and property.

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