

# Chapter 3

## *Progress in Reducing Disaster Risk*

- 3.1 HFA Priority 1:  
Ensure that disaster risk reduction is a national and a local priority  
with a strong institutional basis for implementation.....35
- 3.2 HFA Priority 2:  
Identify, assess and monitor disaster risks and enhance early warning .....49
- 3.3 HFA Priority 3:  
Use knowledge, innovation and education to build a culture of safety  
and resilience at all levels.....54
- 3.4 HFA Priority 4:  
Reduce the underlying risk factors.....57
- 3.5 HFA Priority 5:  
Strengthen disaster preparedness for effective response at all levels .....61

This Review identifies broad global trends in national action to reduce disaster risk, illustrated by examples from countries and regions that have prepared progress reports on achieving the strategic goals of the Hyogo Framework.

While the Hyogo Framework provides overall guidance on the possible range of measures that a country could implement to reduce disaster risk, the actual measures required will depend on the country's specific risk profile and socio-economic development scenarios. Ultimately, progress in implementing the Hyogo Framework in a country can only be measured with respect to its disaster risk. Without identifying and understanding the risk, any judgment on the relevance or effectiveness of disaster risk reduction would be premature. While current knowledge permits a broad characterization of global risk, disaster risk information in many regions and countries is still heterogeneous in quality and incomplete in coverage. General lack of gender-specific data and monitoring is apparent and has an impact on the analysis presented herein. It is also to be noted that where gender-disaggregated data does exist, there is very limited analysis on its application in disaster risk reduction planning and implementation.

Similarly, countries are implementing the Hyogo Framework from very different starting points. Some have been strengthening their capacities to reduce disaster risk for 30 years or more, others have only recently been motivated due to the political impetus provided by the 2005 Second World Conference on Disaster Reduction and the obligations under the Hyogo Framework. The different starting points are also reflected in the nature of progress reported: while many countries have no doubt adopted the language of 'mainstreaming risk reduction concerns into development policies and national frameworks', few national reports contain evidence to show that risk reduction approaches have been integrated into institutional practices at national and local levels.

Disaster risk reduction requires concerted action by a wide range of stakeholders including national and local authorities, civil society and non-governmental organizations (NGOs), scientific, technical and academic organisations and the private sector. Systematic progress reporting by the private sector, NGOs, regional and international organizations is not yet available, meaning that this Review fundamentally reflects state action and not that of other stakeholders.

The Review recognises that progress in disaster risk reduction hinges on the political commitment of Governments, and the constantly negotiated terms of cooperation for intergovernmental regional bodies with respect to addressing transboundary risks. While these dynamics are rarely captured in official reports, they do impact on whether and how risk reduction imperatives are sufficiently addressed across countries and regions. Such dynamics also influence political will to sustain interest in risk reduction nationally and regionally.

While noting these reporting limitations, the Review does provide an insight into the nature of Member States' commitments to the Hyogo Framework and their understanding and visualization of the challenges of disaster risk reduction. It therefore provides a useful starting point to inform the formulation of work plans and other activities by the ISDR System as a whole to support the implementation of the Hyogo Framework in areas which need system-wide attention.

A number of overall trends are visible in the country reports analysed:

- There is a clear and growing global momentum in favour of disaster risk reduction, due to a number of factors already mentioned in the introduction: the series of extraordinary disasters that affected millions in the two-year period between late 2003 and late 2005; the increasing political commitment manifest in the adoption of the Hyogo Framework at the Second World Conference on Disaster Reduction in January 2005; the growing evidence that climate change is radically altering patterns of disaster risk; and widespread recognition that risk-sensitive development planning can actively contribute to reducing disaster risk and addressing persistent poverty trends.
- Most countries are approaching the HFA through the development of specific national capacities for disaster risk reduction. A great deal of the progress reported refers to HFA Priority for Action 1 and deals with the development of legislation and institutional frameworks and plans. In contrast, the reporting seems to indicate that other possible vehicles for implementing the HFA such as working through the private sector or NGOs or using existing national mechanisms for planning and regulating development receive far less emphasis. It is possible that these are not yet viewed as main 'drivers' for achieving progress under the HFA.



- Progress being made by many countries in different areas of development, such as the achievement of greater social equality and gender equity or better quality buildings and urban development which may contribute to the reduction of disaster risk, are not emphasised in the reporting. In contrast, most of the reporting relates to improvements in areas such as disaster response, preparedness, early warning and education. This is perhaps an indication of where most countries locate responsibility and current activities for addressing disaster risk – often, in

response-centric institutions, with a focus on saving lives, without necessarily complementing this with protecting development. This trend will be discussed in more detail later in the chapter.

The sections below identify a number of global trends with respect to each of the five Hyogo Framework priorities for action. The sections also illustrate these trends from the regional and country reports made available.



### 3.1 HFA Priority 1:

**Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation**

#### Analysis of key trends

Country reporting under Hyogo Framework Priority 1 broadly indicates four key areas of focus in the past years:

- Legislative and institutional mechanisms for reducing disaster risks developed and strengthened at national and local levels;
- National action plans, policies and frameworks developed – often, with the objective of ensuring integration of risk reduction into national development priorities;
- Regional cooperation/frameworks developed and strengthened - to address transboundary risks; and
- Donor emphasis on mainstreaming risk reduction into institutional policies and aid disbursement heightened.

#### *Legislative and institutional mechanisms developed and strengthened at national and local levels*

Reports from across all regions show that the occurrence of large-scale catastrophes has generally acted as a strong catalyst for increased policy commitment and investment in disaster risk reduction at national level. Following a major disaster, most countries review their existing legislative and institutional mechanisms in order to identify gaps, and opportunities for improvement in disaster risk management and risk reduction practices.

The impact of the Armero volcanic eruption in Colombia in 1985 and the combined impact of the Latur earthquake (1993), the Orissa super cyclone (1999) and the Gujarat earthquake (2001) in India are examples of large-scale disaster impacts leading to a redesign of national legislative and institutional arrangements. In other cases, it may be a fundamental political change, such as the end of apartheid in South Africa, which provides the catalyst to address disaster risk.

More recently, following the 2003 earthquake in Bam, Iran began putting in place a comprehensive system of inter-ministerial working groups and task forces to address the multiple risks the Iranian population is exposed to. Algeria and Morocco in North Africa, which were affected by earthquakes and floods between 2002 and 2004, are currently making major efforts to improve their legislative and institutional systems and develop planning frameworks which integrate risk reduction concerns, as described in Box 1.

Following the 2004 Indian Ocean tsunami and the 2005 Kashmir earthquake, most Asian countries are also enhancing their legislative and institutional arrangements for disaster risk reduction. The case of Sri Lanka is particularly interesting because it illustrates how a major disaster can provide the impetus to approve and enforce legislation that had



#### **Box 1 Legislative arrangements for disaster risk reduction: Algeria**

Algeria has adopted a series of laws on disaster risk reduction. It has adopted Law 04-20 (25 December 2004) regarding the prevention and management of disaster risks as part of efforts toward sustainable development. The Law envisions the creation of a Commission on Disaster Risk Reduction within the Prime Minister's Office. The Commission would be charged with several advisory, evaluation and coordination tasks; it would also focus on efforts to reduce the impact of disaster risk reduction on the country's economy and the safety and security of its citizens. Law 04-05 (August 2004) improves on a previous legislative arrangement (Law 90-29 of 1990) that deals with urban planning and introduces stricter building codes and building permit requirements. Other legislative changes include one on insurance against disasters (August 2003) and another which deals specifically with earthquake preparedness and response.



already been prepared but was not enacted because it was not considered with urgency. Following the 2005 earthquake, Pakistan established a National Disaster Management Commission and National Disaster Management Authority which will act as the implementing, coordinating and monitoring body for disaster risk reduction, response and recovery at national, provincial and district levels.

While highlighting this trend, however, the motivating factors should not be generalized for all countries that experienced major disasters in the past. Evidence from other countries seems to indicate that the ability to build on disaster impacts as a catalyst for strengthening institutional capacities depends on minimum conditions of political and economic stability, governance and peace. It is unclear, for example, whether the impact of the 2003 volcanic disaster in Goma in the Democratic Republic of Congo led to significant upgrading of national institutional capacities to address disaster risk, although significant progress was made at the local level. In other countries, while progress may have been made in one period, capacities may actually decline in another as political interest moves to another area.

Similarly, experience across Asia, Africa and Latin America and the Caribbean shows that political commitment can be promoted by sustained engagement with national counterparts and effective advocacy measures – nationally and internationally – where real disaster impacts are in fact not the trigger. Nepal and Bhutan's disaster risk reduction policy formulations are key instances of such efforts at planning for 'prospective' or 'anticipatory' risk reduction.

Increased political commitment to risk reduction generated after the Second World Conference on Disaster Reduction of 2005, is a key instance of how awareness and political advocacy at the international level can generate consensus on national priorities for risk reduction across regions. But systematic documentation and analysis are still needed on exactly what political, social and economic conditions enable countries to take advantage of the momentum produced by a major disaster, or what motivates or impedes policy commitment from national Governments.

The institutional mechanisms set up in the previous decades mainly consisted of 'stand alone' disaster management offices or civil defence/protection

institutions, with a focus on emergency preparedness and response. In contrast, many countries have now moved from single-institution mechanisms to more complex, integrated legislative and institutional systems that coordinate actions by a range of sector departments and ministries at different territorial scales and that contemplate other dimensions of disaster risk reduction.

For instance, across eastern, western and southern Africa, many countries which developed disaster management legislations and institutions in the 1990s, have established national disaster management offices with a focus on emergency preparedness for response and civil protection. This applies to Ethiopia, Lesotho, Malawi and Nigeria which have all had legislation in place for a number of years. In contrast, other countries in Africa are currently moving to realign their legislation and institutions to adopt an integrated approach for reducing and managing disaster risk, which goes beyond traditional preparedness and response approaches. Mozambique, Kenya and Zambia are all in the process of reviewing and realigning their legislation, which in some countries such as the United Republic of Tanzania includes the incorporation of disaster risk concerns into national poverty reduction and development strategies and plans.

In Asia, Latin America and the Caribbean, there is also a tendency to move from single-institution civil defence/protection organizations towards more complex institutional systems that coordinate actions by a range of sector departments and ministries and at different territorial levels.

For example, Honduras has been working through 2006 on a new law for the establishment of a disaster risk reduction national system that harmonizes the sub-national and national levels, and designates specific responsibilities for prevention, mitigation, preparedness, response, early recovery and reconstruction to different entities. Ten CDERA (Caribbean Disaster Emergency Response Agency) participating states have enacted disaster legislation and four others prepared drafts. Mitigation policies and programmes have been adopted in Jamaica, Saint Lucia, Grenada, Belize and the British Virgin Islands. El Salvador has adopted a new Law for Civil Defence, Prevention and Disaster Mitigation and established a Civil Defence, Prevention and Disaster Mitigation Fund, in addition to a set of government monitoring indicators developed by the National Land Use

Survey. In Haiti, a draft decree for a new legal disaster risk reduction framework has been submitted to the parliament while Saint Lucia has updated its disaster management policy.

In Asia, most recent institutional and legislative developments have also adopted a systems approach and there are indications that legislative frameworks and institutional mechanisms may be starting to adopt a stronger focus on reducing risk and on linking disaster reduction to broader concerns in social, economic and territorial development.

While this serves as a useful indicator of possible changes in institutional trends and priorities for 'mainstreaming' disaster risk reduction concerns into development frameworks, it is important however to not overstate the trend. More detailed analysis of the reporting indicates that often the development of institutional systems for disaster risk reduction is still primarily focused on saving lives and reducing mortality risk. Developing new systems apparently involving development sectors often consists of the extension of a preparedness focus outwards from response organizations to a wider range of governmental actors. This may be due to the fact that the traditional institutional location of responsibilities for disaster risk reduction within Governments has not changed, since in most country reporting the coordination of systems still rests with the organization responsible for disaster response. The nature of progress being reported often reflects their organisational mandates, philosophy and perspectives.

There are some regional variations in this trend. In West and Central Africa, national legislations and institutions were weak or non-existent before the impulse provided by the development of an 'Africa Regional Strategy'. Many countries in these two sub-regions are now reporting the development of new institutions and legislation. These are mainly civil defence/protection offices with a focus on response and preparedness. Although a number of these organizations refer to prevention or risk management in their institutional profiles or nomenclatures, these terms are mainly used to refer to response preparedness rather than to a broader definition of disaster risk reduction. Likewise, in the Middle

East and North Africa, disaster risk reduction is a relatively new topic of concern and existing legislation and institutional arrangements are dominated by traditional civil defence/protection structures focusing primarily on response and preparedness.

In the Pacific, a number of countries are in the process of developing new institutional and legislative frameworks, notably in Vanuatu, Tonga and Samoa. Nonetheless, in the region as a whole, disaster risk management has been generally regarded as either an environmental or humanitarian issue and this is reflected in general lack of government policies, organizational structures and legislative frameworks to underpin disaster risk reduction in an integral, coordinated and programmatic manner.

A large number of countries report efforts to develop institutional structures and strategies at the local level, ranging from villages and communities to large local government areas. In general, these strategies seem to work well in countries with significant levels of decentralization of political authority and fiscal resources. Moreover due to the above challenges, it is interesting to note that there have been comparatively more countries reporting progress in disaster preparedness at the local level than achieving well-integrated institutional mechanisms at the local level. However, as some countries such as Lesotho report, these strategies may be difficult to sustain when the necessary conditions for supporting local engagement are not present.

Few countries reported on local-level disaster risk reduction activities that go beyond building capacities for early warning preparedness and response. One of the exceptions is Costa Rica where municipalities are actively engaged in the identification of disaster risk in the development of land-use plans and regulations. These were then subject to inspections to validate the risk information. Risk evaluations were also carried out of locations suffering recurrent disasters and where land-use plans had to be adjusted. However, there is clearly a substantial area of activity with local governments, NGOs and community organizations involved in a wide range of activities to mitigate hazard and reduce risk. It is quite likely that these activities have been under-reported in national reporting to date.



### *Addressing disaster risk reduction through national action plans, policies and frameworks*

Overall, country reports from across regions indicate the importance attached to preparing systematic national action plans, policies and frameworks for disaster risk reduction. Most substantial activity has been reported from Asia and Africa but nonetheless efforts have been consistently reported from across all regions.

The process of developing legislation on one hand, and policies and plans on the other, does not proceed in a linear fashion. Enacting a disaster management bill does not appear to have a particularly strong bearing on whether a country is able to implement a national policy on disaster risk management. In Africa, Ethiopia established a disaster management policy and plan before enacting its disaster management legislation. In contrast, Malawi enacted the legislation in 1991 but is still to fully develop a national plan. In other cases, enacting legislation can be quite effectively followed up by the preparation of a national framework of action – such as in Sri Lanka where a ‘road map’ for disaster risk management (see Box 2) was prepared shortly after a Disaster Management Act was passed in 2005.

From such instances, it can be derived that countries tend to put in place elements of the institutional framework selectively, depending upon the national politico-economic circumstances amongst other influencing factors. The Pacific’s example provides an interesting case (see Box 3) of how National Action Plans can propel selective changes in institutional structures and mechanisms for disaster risk management.

In the past couple of years, four southern African countries (Lesotho, Namibia, Swaziland and Zimbabwe) have also developed national action plans for capacity development in the five priority areas described by the Hyogo Framework, with a particular emphasis on strengthening institutional and legislative systems for disaster risk management.

As mentioned in the introduction to this chapter, most national plans and policies are principally focused on addressing mortality risk and relate to improvements in disaster response, preparedness, early warning and education. There is far less emphasis on reduction of underlying risk factors through measures implemented at the national and local level.



#### **Box 2 Road map for disaster risk management: towards a safer Sri Lanka**

Following the 2004 Indian Ocean tsunami disaster, Sri Lanka passed a new Disaster Management Act and established a National Council for Disaster Management as the leading body for disaster risk management in Sri Lanka with the Disaster Management Centre as the executing agency. The Council comprises cabinet ministers in charge of 20 subject areas.

Following the enactment of the Sri Lanka Disaster Management Act, it was decided to complement the ongoing policy efforts with strengthened national and local-level institutions, while also focusing on community-based disaster risk management (CBDRM). In acknowledging these needs, the Ministry concerned proposed to develop a “Road Map” towards building a “Safer Sri Lanka” in the next 10 years, identifying specific priority projects in coordination with multiple stakeholders through a holistic strategy. The Road Map is a 10-year plan comprising specific project proposals covering seven thematic areas consistent with ongoing and past efforts in the field of disaster risk management and development planning in Sri Lanka. The thematic areas are: policy; institutional mandates and institutional development; hazard, vulnerability and risk assessment; tsunami and multi-hazard early warning systems; preparedness and response plans; mitigation and integration of disaster risk reduction into development planning; community-based disaster risk management; and public awareness, education and training.

The Road Map was prepared with UNDP support, technical support from the Asian Disaster Preparedness Center (ADPC) and the World Meteorological Organization (WMO) through the National Meteorological Service. A total of 109 projects within the seven thematic areas were identified at a cost totalling approximately USD 609 million. Funding has already been allocated for some projects by the Treasury for the year 2007. Parts of some activities have been commenced or completed with funding from the Government, UNDP and donors.



**Box 3**  
**Pacific Islands: the**  
**Vanuatu Disaster Risk**  
**Management National**  
**Action Plan**

As part of governance programmes in the Pacific Region, an interesting example is the Vanuatu Disaster Risk Management National Action Plan. In the Vanuatu situation analysis for the development of National Action Plan, it is found that there is a need to develop appropriate institutional structures with relevant policies and legislation. It is possible that a new structure could either continue to be located with the police under the Ministry of Internal Affairs or be located under a different Ministry. The aim is to strengthen national policy, legislation, organizational and decision making arrangements for coordinated and effective disaster risk management. Main activities include: defining and adopting organizational, decision-making, monitoring, reporting and accountability arrangements for disaster risk management; reviewing the Disaster Management Act of 2000 to give effect to disaster risk management principles and strategies contained in this National Action Plan; and formulating and implementing national legislation and policies for rationalizing monitoring and reporting of all natural hazards (geo-hazards, hydrological and meteorological).

In Asia and Latin America and the Caribbean, there are indications that institutional frameworks and mechanisms may be starting to adopt a stronger focus on reducing risks and on linking disaster reduction to broader concerns in social, economic and environmental development. Integrating risk reduction considerations into national policy frameworks such as the Poverty Reduction Strategy in Bangladesh, and the United Nations Development Assistance Framework (UNDAF) in India, Bhutan and Nepal, are such key instances. The Governments of Nepal and Bhutan have also been recently engaged in the development of “National Integrated Frameworks for Disaster Risk Management” with which UN frameworks of action are well aligned. In Guatemala, disaster risk reduction has been incorporated into the national public pre-investment system. Indonesia, with its new legislative framework, has moved from a responsive approach to a more preventive one and is working to incorporate disaster risk reduction into government plans and legislation. Similarly, Pakistan, through its focus on institutional and legal arrangements for disaster risk reduction, has established provincial and regional disaster management commissions and authorities, as well as 50 district/municipal ones; it has also developed appropriate building codes for hazard-resilient construction, as well as land-use plans for cities and districts at risk. Iran’s case is an interesting example to consider when assessing how national platforms for disaster risk reduction can effectively operationalize institutional investments in reducing disaster risks (see Box 4).

However, as will be emphasised below it is often unclear from the reporting as to what extent the plans or strategies are actually implemented and enforced or whether resources have been allocated against them.

*Regional cooperation frameworks developed and strengthened*

In some regions, such as Central America and the Caribbean, regional mechanisms like the Coordination Centre for the Prevention of Natural Disasters in Central America (CEPRENAC) and the Caribbean Disaster Emergency Response Agency (CDERA) are well developed, with mature regional planning processes and strong linkages to national planning institutional frameworks (see Box 5 and 6).

The Andean region is making similar efforts through the Andean Committee for Disaster Prevention and Attention (CAPRADE) and regional projects such as PREDECAN (Project to Support Disaster Prevention in the Andean Community – funded by European Union and the Andean Community). For further details on the Andean Region Strategic Plan (see Box 7).

In many other regions, particularly outside of the intensive risk hotspots, there was little urgency prior to 2005 to include disaster risk reduction in governmental development agendas - with few large-scale disasters and little exposure to international humanitarian concerns. Due to the factors mentioned in the introduction to this chapter, this has now changed. In regions such as Central and West Africa and in parts of North Africa and the Middle East, as well as in some individual countries in Asia, Latin



#### **Box 4** **Institutional investment in disaster risk reduction: case of Iran**

The Islamic Republic of Iran has made a considerable investment in its institutions and its national platform for disaster risk reduction. An Executive Secretariat of the Hyogo Framework was set up under the overall supervision of the Interior Ministry's Natural Disaster Task Force. The work of the Secretariat includes:

1. Strengthening 23 Preparedness Working Groups. Iran has strengthened the activities and enhanced the role of Preparedness Working Groups established in 2003 within the framework of the National Relief and Rescue Comprehensive Plan approved by the cabinet, and based on Article 44 of the Third National Development Programme. Preparedness activities include data collection, research, planning, establishing management structure, training, and securing resources. The Preparedness Working Groups operate at three levels - local, provincial and national – with three categories of sub-groups on operations, prevention and training, which support the Preparedness Working Groups.
2. Creating a National Working Committee in 2005. Members of the Committee are: Ministry of Interior, Iranian Red Crescent, NGOs, Municipality of Tehran, President's Office, Social Committee of the Parliament, National Disaster Research Institute of Iran, National Iranian Broadcasting Organization, Disciplinary Forces, Ministry of Energy, Basij Organization, Housing Foundation, Meteorological Organization, International Institute of Earthquake Engineering and Seismology (IIEES), Tehran Disaster Mitigation and Management Organization, Environmental Organization, Ministry of Housing and some other organizations. The Committee has prepared a "National Policy on Natural Disaster Prevention and Risk Reduction".
3. Establishing a National Platform for Disaster Risk Reduction, consisting of more than 30 members including line ministries, academic and research institutions, implementing agencies and NGOs.
4. Creating a High Level Council on Disaster Management. The chair of the Council is the President of the Republic and the Council is responsible for risk reduction issues at the time of disaster response, recovery and reconstruction.
5. Establishing nine specialized working groups in 2005 within the Ministry of Interior and on different aspects of disaster risk reduction, including: earthquake and landslide; rangeland revival and coping with drought; flood prevention; reducing air pollution; storm and hurricane hazards; rescue and relief; loss compensation; and health care.
6. Preparation of a 10-year plan for implementing the Hyogo Framework.

America and the Caribbean, where there was previously little interest in disaster risk reduction prior to 2005, there is now a growing political commitment to addressing disaster risk through developing institutions, legislative frameworks, policies and strategies.

Disaster risk reduction has been gaining momentum in Africa at a significantly fast pace over the past few years. In 2004, the African Union (AU) and the New Partnership for Africa's Development (NEPAD) approved an Africa Regional Strategy for Disaster Risk Reduction<sup>58</sup>. While a number of regional economic commissions such as the Intergovernmental Authority on Development (IGAD) and Southern Africa Development Community (SADC) already had in place strategies and policies for disaster management, the Africa Regional Strategy has served as an impetus for others such as the Economic Community of West African States (ECOWAS) and Economic Community of Central Africa States (ECCAS) as well as their Member States to engage in disaster risk reduction. 2005 began with the establishment of an "Africa Advisory Group on Disaster Risk Reduction" and ended with the successful organization of the "First Africa Ministerial Conference on Disaster Risk Reduction" which adopted an "Africa Program of Action on Disaster Risk Reduction". In May 2006 in Brazzaville, the African Ministerial Conference on Environment (AMCEN) mainstreamed the Africa Regional Strategy into its next five-year

<sup>58</sup> With the support of the UN/ISDR secretariat and UNDP



### Box 5 Regional frameworks in Central America

Established in 1988, CEPREDENAC (<http://www.cepredenac.org>) is the specialized institution of the Central American Integration System for Natural Disaster Prevention, Mitigation and Response. The Governments of Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama are active members, while Belize and the Dominican Republic are in the process of becoming members. CEPREDENAC's intersectoral agenda is harmonized with other specialized regional entities in such areas as hydrological resources, agriculture, and nutrition and food security. A Regional Disaster Reduction Plan (PRRD) has been developed with the aim of contributing to disaster risk reduction as an integral part of the sustainability of Central American societies. The strategic objectives of the PRRD include: (1) promoting the incorporation of disaster risk reduction into legislation, policies, plans and investment projects for sustainable development in the region; (2) enhancing and developing greater resilience of the population to disaster risk; and (3) promoting the incorporation of disaster risk analysis into the design and implementation of prevention, mitigation, response, recovery and reconstruction measures in the countries of the region (PRRD 2006-2015).

One of the most challenging processes undertaken by CEPREDENAC in the last two years has been the review of the Regional Disaster Reduction Plan (PRRD) 2006-2015. The PRRD 2006-2015 is based on Presidential Mandates and the Hyogo Framework and proposed improvements to the Plan were the result of a wide participatory consultation process that took place in each country of the region through workshops and collective interviews. The whole process has revitalized the National Commissions of CEPREDENAC, allowing for the incorporation and ownership of more stakeholders in the multisectoral composition of the Commissions.

programme. At the sub-regional level, IGAD has developed a sub-regional strategy for disaster reduction. An Africa Regional Platform for Disaster Risk Reduction was also developed (further details in Box 8).

In south-eastern Europe, interest in addressing disaster risk reduction issues has grown since the adoption of the Hyogo Framework, evolving from a purely preparedness and response centred approach. A number of legislative initiatives on disaster risk reduction are being presently developed. In Bosnia and Herzegovina, for instance, a law on the protection and rescue of people and property in natural and other disasters is under development with a component related to disaster risk reduction.

The same is true for Arab League countries as well as individual countries in other regions, such as Bhutan in Asia. In other regions, where significant experience already existed at the national level, consensus for regional cooperation is increasing. In South Asia, the creation of the South Asian Association for Regional Cooperation (SAARC) Disaster Management Centre in 2006, builds on progress being made at the national level and will provide



### Box 6 The Caribbean Disaster Emergency Response Agency (CDERA)

The Caribbean Disaster Emergency Response Agency (CDERA) is the main specialized body for disaster risk management in the Caribbean, with 16 participating States and headquarters in Barbados. CDERA focuses on capacity building and policy formulation in disaster risk reduction. It is the broker of the Comprehensive Disaster Management Strategy and Results Framework adopted in 2001 by regional disaster management stakeholders, including civil society and the private sector. The Regional Strategy, aligned with the Hyogo Framework and emphasizing regional priorities, was adopted by the Caribbean Community in 2005 with a Programme of Work for 2005-2015.

The Regional Strategy was further enhanced in 2006 to make it more outcome focused. A monitoring and evaluation mechanism is also being developed as part of this programme-based approach to disaster risk reduction. The Regional Comprehensive Disaster Management Strategy is intended to emphasize disaster loss reduction through risk management, and to follow a more programme-based approach with an emphasis on results-based management.



additional support to partnerships and “solution exchanges” between ongoing national efforts.

While there is substantial progress being made in addressing disaster risk as transboundary concerns under regional frameworks of cooperation, it is worth noting that often real achievements on such a scale

are bound with constantly negotiated requirements of a region vis-à-vis national priorities. Defining the middle point between the national requirement for mitigating and reducing risk and the realistic scope of what regional cooperation frameworks can address due to various political, territorial and economic imperatives, often seems to be the challenge at hand.



### Box 7

#### The Andean Strategic Plan 2005-2010

The Andean Committee for Disaster Prevention and Relief (CAPRADE) is the specialized body for disaster reduction in the countries belonging to the Andean Cooperation (CAN) and was created in 2002. CAPRADE's objective is to contribute to the reduction of risk and impact of natural and man-made disasters in the Andean sub-region through: political coordination and lobbying; strategy and planning; the promotion of disaster prevention; mitigation, preparedness relief and reconstruction; and facilitating cooperation, mutual assistance and exchange of experience in the area. Bolivia, Colombia, Ecuador, Peru and Venezuela are active members of this sub-regional body. The Andean Strategy for Disaster Prevention and Relief, approved in June 2004 in Quito, is the main policy instrument for disaster reduction in the sub-region, and it has been the result of an intense work that gathered 280 entities and more than 450 national practitioners and experts in round tables and workshops, conducted in every member country. The Andean Development Community (CAF), UNDP and UN/ISDR secretariat have supported CAPRADE during this process. The Andean Strategy for Disaster Prevention and Relief has provided the context for the development of the Andean Strategic Plan 2005-2010. Among the key guidelines for this Plan is the promotion and strengthening of National Platforms / National Systems for Disaster Risk Reduction, highlighting the importance of the multisectoral and multistakeholder nature of these mechanisms. Another strategic action is the design and application of a new monitoring and evaluation system that will include the development of a structured group of indicators and protocols for data gathering and compilation.

For further information see: [http://www.caprade.org/plan\\_trab.htm](http://www.caprade.org/plan_trab.htm)

#### *Donor emphasis on mainstreaming risk reduction into institutional policies and aid disbursement heightened*

As mentioned earlier in this section, there has been some progress reported in mainstreaming disaster risk reduction considerations into national development policies and frameworks through Asia and the Pacific, Africa and Latin America and the Caribbean.

Some donor countries, particularly in Europe, have made substantial progress in developing dedicated disaster risk reduction policies in their external cooperation instruments for development and



### Box 8

#### Africa Regional Platform for Disaster Risk Reduction

The first “Africa Regional Platform for Disaster Risk Reduction Meeting” took place on 26 and 27 April 2007 in Nairobi, Kenya, followed by the first “West Africa Sub-Regional Platform Meeting” in Abidjan, Côte d'Ivoire, on 17 and 18 May 2007. These positive developments have been underpinned by growing cooperation between the UN/ISDR secretariat and the Commission of the African Union (AU) and Regional Economic Commissions, resulting in the UN/ISDR secretariat providing technical assistance staff to enhance the capacity of the AU to implement the Africa Regional Strategy. Establishing new national platforms and strengthening existing ones to enhance reporting on implementation of the Hyogo Framework will be the focus and priority for the coming years. Finally, awareness campaigns for school safety and disaster-safe hospitals will also get considerable focus in the implementation of the Hyogo Framework. These initiatives address the community level to help close some gaps in the implementation of all Hyogo Framework priorities for action at community level.

humanitarian assistance, with concomitant budgetary allocation.

In the United Kingdom of Great Britain and Northern Ireland, for example, various studies were commissioned by the Department for International Development (DFID), targeting the need for integrating disaster risk reduction strategies in European Union (EU) development policies. DFID also earmarked a part of its humanitarian aid budget for disaster reduction activities. The Swedish International Development Agency (SIDA) and Danish International Development Agency (DANIDA) are engaged in ongoing discussions on how to integrate disaster reduction into their aid programmes. During the German presidency of the European Union, the European Commission DG ECHO (Directorate-General for European Commission Humanitarian aid Office) and the German Federal Foreign Office led a discussion on the integration of disaster reduction into the humanitarian assistance provided by the European Commission and Member States. DG ECHO is fast approaching the threshold of 10 per cent of its humanitarian budget spending on disaster risk reduction, with other services (notably DG Development and DG RELEX – External Relations) exploring practical mechanisms for integrating disaster risk reduction. An inter-service coordinating group is developing what is intended to be a European consensus on disaster risk reduction. The Swiss Development Cooperation (SDC) is preparing a strategy for integrating disaster reduction into the country's development assistance. There are also attempts by some donors to work with the private sector in integrating disaster risk reduction as a partnership priority, with corporate social responsibility being increasingly important for the issue.

However, mainstreaming disaster risk reduction into donor institutional policies and development assistance also faces a number of challenges:

- i. 'Mainstreaming fatigue' – disaster risk reduction ends up being another cross-cutting issue to be integrated into donor policy, in addition to governance, conflict, gender, HIV/AIDS and the environment;
- ii. Lack of mechanisms for aid coordination and monitoring of progress among stakeholders. This has implications on institutional capacities

for monitoring what inputs mainstreaming disaster risk reduction activities require, and regularly assess progress made. Although lack of indicators and benchmarks for assessing progress of mainstreaming risk reduction into national priorities is an apparent gap, it has not been explicitly mentioned in the reports received.

- iii. Personnel and capacities: European countries also report a general lack of personnel and capacities for operationalizing mainstreaming disaster risk reduction in a meaningful manner. Often this means disaster risk reduction remains 'mainstreamed' at policy and strategy levels – i.e. in principle, but is not operationalized in practice, due to lack of awareness of the 'how and when' amongst existing personnel capacities.

The recent release of the ISDR/Tearfund report on "Institutional Donor Progress with Mainstreaming Disaster Risk Reduction" (2007) concluded that a more detailed self-assessment by donors on their progress with mainstreaming disaster risk reduction, is desirable. Such progress amongst donors will have obvious implications on setting benchmarks and defining more precise indicators to assess progress with mainstreaming disaster risk reduction across the policy–practice continuum.

### Analysis of key challenges and gaps

Overall, a key challenge highlighted in most reports is that while political momentum may exist to create new institutional systems and legislation for reducing risks, lack of dedicated resources from national budgets and of trained personnel to implement plans, may inhibit the operation of existing systems.

- i. Many countries, particularly in Africa, highlight lack of resources earmarked for disaster risk reduction as one of the key constraints on implementing the Hyogo Framework priority areas, in particular Priority 1. In Africa, there is little evidence of nationally based financial mechanisms to support disaster risk reduction or of budgetary allocations from governments, although Madagascar is an exception along with a few others. The Malagasy Government allocates an annual budget to the National Office for Risk and Disaster Management as the main disaster risk reduction activities' coordinating structure. This budget is dedicated to finance post-disaster



response and risk reduction activities. Further, after the adoption of a National Strategy for Disaster Risk Management, each ministry is required to allocate a certain amount of its annual budget for risk reduction and post-disaster response activity respectively.

In the Pacific region, such budgetary allocations are reported as being strikingly inadequate. A significant part of the disaster risk reduction progress described in the reporting is dependent on resources and assistance provided through international channels. In contrast, however, a number of developing countries, such as India and Iran in Asia, now allocate lines from national budgets to their disaster risk reduction efforts. In the Caribbean, Governments of the CDERA system have been increasing budgetary contributions for disaster management organizations and programmes. This has been especially evident after the eventful 2004. Many countries report the setting up of national emergency or relief funds. But as implied by their names, the function of most of these mechanisms is to fund relief and, to a lesser extent, rehabilitation and recovery activities following disasters. Asia, for example, mentions the use of “social safety net” funds for recovery purposes. It is not immediately clear from the national reporting how many countries under such conditions really provide resources for disaster risk reduction purposes.

- ii. Many countries have reported difficulties in operationalizing the legislative and institutional mechanisms for disaster risk management due to lack of buy-in on the part of line ministries and sectoral departments, into whose work disaster risk considerations are to be eventually ‘mainstreamed’. While many countries report the formulation of national policies and plans, these are not necessarily followed up, for instance by assigning specific responsibilities and resources, and by developing plans for implementation at the local level or in each sector. In part, this relates to lack of adequate financial and human resources for integrating disaster risk reduction concerns into competing national development priorities. However, it is also related to the way political power is centralized or not in each country. For example, a large number of countries have established policies to decentralize the implementation of disaster risk reduction interventions. However, the devolution

of responsibilities, authority and competencies, including resources, to lower administrative levels, is often limited, questioning the viability of the policy.

It is observable that in countries where the coordinating office for disaster risk reduction is overseen by the highest level of political power, there seems to be a better chance of influencing line ministries and ensuring coherence. Across regions, the lack of buy-in has a two way implication. One, this implies there is general lack of ‘evidence’ for national ministries dealing with other development priorities on how integrating risk reduction will impact development gains in real terms, over medium and long term periods. A second implication is of course on the lack of resources and trained personnel to carry out advocacy-related measures - for risk reduction to become a core development concern of all sectors.

- iii. The capacity to engage and sustain political support for disaster risk reduction over the medium to longer term is another challenge. Many countries have gone through time-consuming processes to create or update legislation, policies and plans, sometimes with active support and participation of highly positioned political figures. Implementing laws and plans is still an ongoing task in many countries, affected by decreasing political support and, in some cases, interrupted by conflict and political instability. Political commitment to disaster risk reduction in most countries seems to be cyclical, and driven by the occurrence of large-scale disasters that require a political response.
- iv. In spite of recent legislative and institutional reforms, there is little evidence of enforcement or accountability for risk reduction. In Africa, much of the disaster risk reduction legislation is still scattered across different laws in different sectors and often does not provide for clear responsibilities, entitlements, sanctions and remedies. In Cameroon, for example, over 13 statutes and decrees are in place with relevance to disaster risk reduction, without coherence between the governing areas of each. Where legislations have been in place for nearly a decade, there are no reports on whether these are fully enforceable measures. In countries where legislative mechanisms for disaster risk management have been recently addressed, it is perhaps too soon to

comment on the extent to which they are already being enforced. Also, there are no reports on whether enforcement of such legislations is built into institutional accountability for risk reduction.

- v. The engagement of civil society and private actors seems to be another gap in reporting. It is apparent that across many countries particularly in Asia, Pacific and Latin America and the Caribbean, partnerships with NGOs are key to delivering risk reduction outcomes, especially in the awareness, knowledge, advocacy and capacity spheres. However, there has been little mention of such partnerships at national or local level in the country reports. Bangladesh's report on "building public-private partnership approach" for implementing community risk projects and research initiatives on climate change is an exception to this gap in reporting. Interestingly, a regional review of progress in disaster risk reduction in Sub-Saharan Africa<sup>59</sup> reveals that most of the national disaster management programmes in Africa recognize the role of key non-state entities and communities in disaster management. In addition, the regional report from the Middle East and North Africa reports that international aid and humanitarian organizations, such as Oxfam, the International Federation of Red Cross and Red Crescent Societies (IFRC), Muslim Aid and Islamic Relief, play a part in immediate relief provision and are increasingly focusing on disaster risk reduction as a theme for their own activities. From the national and regional reports, there is no strong evidence that the private sector is involved in a definite way, other than developing specific business continuity plans.
- vi. Continued pre-eminence of emergency response institutions/actors across all regions: The basic approach to dealing with disaster risks remains response-centric even in countries which have adopted the language of disaster risk reduction in institutional and policy terms. A contributing factor could be that personnel staffing such national and local disaster risk management systems have previously served in emergency response situations, but are not necessarily aware of or sensitive to processes and mechanisms that might reduce risks.
- vii. Lack of commonly accepted and widely utilized tools for tracking progress in risk reduction: National-level institutions, especially those set up after major disasters, are under tremendous pressure to show quick results. This is commonly interpreted as being visibly efficient in the aftermath of disasters. Greater collaboration with planning agencies and well accepted indicators of success are necessary to gauge to what extent progress is really being made in reducing risks.

---

<sup>59</sup> For the list of all regional reports received refer to Annex 5



## 3.2 HFA Priority 2:

### Identify, assess and monitor disaster risks and enhance early warning

---

Under HFA Priority 2, country submissions centre around reporting results achieved with conducting risk assessments and developing early warning systems.

#### Risk identification and assessment

As mentioned in an earlier section of this report, risk identification at an appropriate scale provides key baseline information for the development of all disaster risk reduction measures, from response to development-led interventions to address future risks. Many countries are now making progress in this area. Sri Lanka has completed the development of a national disaster database, providing for the first time a comprehensive picture of disaster occurrence and loss – deriving from the DesInventar methodology. While Latin America pioneered this approach, other Asian countries, such as India, Thailand, Indonesia, Maldives and Iran, are now also involved in developing similar disaster databases that will provide a vision of risk in both intensive hotspots and over extensive areas at a high resolution. For a full picture of risk, gender and age-specific data would be needed.

The Sustainable Cities Programme in Peru, implemented in partnership with Peruvian universities, has assisted 121 cities (including three in neighbouring Ecuador) to develop hazard maps (in all 121 cities) and land-use and mitigation plans (67 cities). This is an excellent example of an effort to mainstream disaster risk concerns into city planning and development.

Colombia has also advanced in detailed studies of disaster risk in many of its principal cities, particularly Bogota and Manizales, and is working with the National Planning System to incorporate risk considerations into all municipal-level land-use plans from October 2007 onwards.

The Government of Tajikistan established an Information-Analytical Center at the Committee for Emergencies and Civil Defence to build up a national

network for ensuring reliable collection, analysis and storage of information on natural and technological disasters, to provide an opportunity for research in vulnerable areas, developing hazard, vulnerability and risk maps of dangerous processes, and forecasting the possibility of their origin and their consequences.

Other countries report efforts to develop hazard maps and atlases. In Asia, India was one of the first countries in the region to develop a vulnerability atlas<sup>60</sup> that has already been used to prioritize interventions, for example, in local-level disaster risk reduction. Pakistan also plans to produce a composite risk atlas. Both Pakistan and Sri Lanka report activities related to identifying and analyzing specific risks to hazards such as floods and landslides. Similarly, Morocco and Algeria have undertaken hazard mapping at the national level and are now focusing on specific risk reduction studies and plans in high-risk areas.

Bangladesh has reported the application of “participatory approaches for community vulnerability and risk assessments in disaster management” by developing a uniform methodology called “Community Risk Assessment” and “Risk Reduction Action Planning Procedure”. In sub-Saharan Africa, a number of countries have a long experience in developing vulnerability and capacity assessments to address food security concerns.

El Salvador has made progress in data compilation and analysis for the construction of a number of risk indexes using a methodology developed for the Inter-American Development Bank (IDB). In Africa, the United Republic of Tanzania and Sierra Leone report a comprehensive national risk assessment. In addition, Sierra Leone reports that the National Red Cross Society have also conducted a vulnerability and capacity assessment of the different regions in the country to complement the national hazard profiling. Other countries such as Ethiopia, Eritrea and Nigeria report partial assessments.

---

<sup>60</sup> For further information see: Vulnerability Atlas of India: State-Wise Hazard Maps and District-Wise Risk Tables, 2007, 2nd Edition. [www.bmtpc.org/disaster.htm](http://www.bmtpc.org/disaster.htm)

**Box 9****Achievements and status of the Indian Ocean Tsunami Warning System**

Considerable progress has been made by countries bordering the Indian Ocean to develop tsunami early warning systems for the region, linked to existing warning services and disaster management organizations. Activities have included the development or enhancement of detection networks and communications, definition of comprehensive national plans for each country participating in the process, and targeted training activities involving more than 150 national officials and researchers. Much needed public awareness and educational material have been generated and translated into the many different languages of the region. Today, the Indian Ocean Tsunami Warning System (IOTWS) includes seismological and oceanic observation networks, regional analysis and advisory centres, and national tsunami warning centres linked to national risk assessment and preparedness activities. Twenty-five nations (out of a possible 28) have established official Tsunami Warning Focal Points capable of receiving and disseminating tsunami advisories around the clock. Nevertheless, in a March 2006 survey, 20 of the 28 IOTWS participating countries lacked national plans for a tsunami early warning and response system. Eleven countries have since developed action plans to overcome this gap in developing national capacity. The Platform for the Promotion of Early Warning (PPEW) is coordinating the work of a consortium of seven UN/ISDR System partners which are assisting with advisory and implementation support at the national level. This provides an example of a concerted and integrated apparatus for supporting the implementation of the Hyogo Framework.

*Source: 2007 Report of Indian Ocean Consortium partners to the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS): <http://ioc3.unesco.org/icg/> and [http://www.unisdr.org/ppew/iewp/pdf/IEWP\(I\)-3.pdf](http://www.unisdr.org/ppew/iewp/pdf/IEWP(I)-3.pdf)*

**Early warning systems**

Many countries report good progress in developing early warning systems. National meteorological and hydrological services in 188 countries systematically monitor, and provide forecasts and warnings of potentially hazardous hydro-meteorological events such as heavy rains, drought, snow and hail storms, floods, avalanches, heat waves and cold waves, tornadoes, lightning, smoke haze, tropical cyclones, marine and aviation hazards and volcanic ash plumes.

Many national meteorological and hydrological services also monitor and advise on climate change and variability. In addition, some of the national services monitor and give warnings on geological and technological hazards, including earthquakes and tsunamis, volcanic eruptions, landslides, wildland fires, hazardous material spills and explosions, etc. Innovations in monitoring, such as through radars and satellites and in computer-based prediction, have steadily improved warning capabilities over recent decades. Exchange of data and warnings, international coordination and capacity building are coordinated by the World Meteorological Organization (WMO), building on strong regional cooperation. After the devastating cyclone in the Bay of Bengal in 1970, WMO created a Tropical Cyclone Programme not only to improve data sharing and forecasting of approaching storms but also to improve strategies to manage floods and to reduce risk in the region. Currently, six regions are covered by related committees, two of which are also supported by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). The UN/ISDR secretariat contributes to these initiatives by promoting interactions with disaster management sectors. A tsunami warning system has long existed in the Pacific Ocean, overseen by the United Nations Educational, Scientific and Cultural Organization (UNESCO) Intergovernmental Oceanographic Commission (IOC). The 2004 Indian Ocean tsunami triggered the establishment of similar systems in other oceans and seas, most notably the Indian Ocean, but also in northern Atlantic Ocean, the Caribbean Sea, the Mediterranean and Black Sea.

Bangladesh was a regional pioneer in developing an effective early warning system through its cyclone preparedness programme and has demonstrated in practice how this could help reduce loss of life significantly. In Central America, Guatemala has significant experience in the development of flood early warning systems in its river basins and has been able to achieve a measurable reduction in loss of life in those cases where the systems were operational when a disaster occurred. In the same region, Costa Rica and St. Lucia also report important progress in this area while the Cayman Islands are linking early warning to an estimation of storm surge impact modelling. In Africa, Kenya, for example, reports multisectoral drought contingency plans for 22 arid and semi-arid districts, which link early warning and timely response as well as the establishment of community-based drought early warning



systems in 28 arid and semi-arid districts, providing timely and credible early warning information for response. Further, WMO is working with GRIP (Global Risk Identification Programme) on major projects for standardizing flood and drought risk assessment methodologies and they are together initiating 10 national flood and drought risk assessment projects in 2007–2008.

The development of early warning systems received an enormous boost from the efforts following the 2004 tsunami to promote comprehensive early warning systems in Indian Ocean countries, focusing not only on future tsunamis but also on regularly occurring events such as cyclones and floods (See Box 9). For example, both Pakistan and Sri Lanka report activities related to improving their early warning capacities, the Disaster and Emergency Warning Network in Sri Lanka and the latter's National Plan on Strengthening National Capacities for Multi-Hazard Early Warning and Response System, both in an early phase of implementation. Other countries such as Mauritius and Thailand also report significant progress.

Under a CDERA-implemented Caribbean Disaster Management project funded by the Japan International Cooperation Agency (JICA), Barbados, Saint Vincent and the Grenadines, and Trinidad and Tobago developed integrated flood management programmes which involved bringing together the technical resources of the University of the West Indies, the Caribbean Institute of Meteorology and Hydrology and the knowledge of local communities. A key outcome of combining scientific and local knowledge is a low-cost community early flood warning device (See Box 10).

**Telephonic Community-based Flood Early Warning**  
In the Pacific, it is reported that engagement with communities at risk, private sector, women's groups and other stakeholders, in developing disaster risk reduction actions and projects is minimal. There is an absence of sufficient information systems available for each key hazard that could enable permanent monitoring and the issuing of early warnings to communities at risk. In many countries, the National Meteorological and/or Hydrological Service is only weakly integrated into the existing organizational framework for disaster risk management, which implies a poor articulation between hazard monitoring and warning, risk identification and analysis, and disaster preparedness and response.

Most importantly, risk-prone communities often lack capacities in disaster preparedness and response that can be utilised when a warning is issued. The Symposium on Multi-Hazard Early Warning Systems convened by WMO in May 2006 identified challenges along four components of

### **Box 10** **Early Warning System for the Caribbean**

The Caribbean Disaster Management (CADM) regional team that comprises academic staff from the University of the West Indies and the Caribbean Institute for Meteorology and Hydrology has designed and built a "Telephonic Community Flood Early Warning System".

The System is designed to mitigate the impact of flash floods in the Caribbean. The Caribbean is particularly vulnerable to flash floods, as a result of its topography and rugged terrain. Flash floods have had very serious impacts on the social and economic sectors and claimed lives in many part of the Caribbean. Recognizing this critical need, Governments of the Caribbean through a Caribbean Community (CARICOM)/Japan Technical Cooperation Agreement, established the CADM Project. The main focus of the Project was to build regional capacity for flood hazard mapping and developing community-based approaches to flood hazard mitigation.

The early warning system has been introduced to six Caribbean countries, including Barbados, St Vincent and the Grenadines, Trinidad and Tobago, Saint Lucia, Grenada and Dominica, as part of flood hazard mapping systems.

Thirty-six units of the System will be installed in the upper catchment of a watershed where they will be used to monitor rainfall regimes and instantaneously inform responsible agencies of the potential for flooding in lower catchments. The Telephonic Community Flood Early Warning System provides a simple yet cost-effective measure to assist disaster mitigation and response.

The Units are designed to alert a central monitoring station by placing calls from a dedicated landline telephone network, which will transmit tone sequences that indicate the level of rain water in the collecting container. Residents in flood-prone areas could be set at ease when the Units are installed, as they will now be able to receive early warnings about impending hazards and therefore improve their resilience and be able to evacuate in advance of impending flood waters.

For further information, contact CDERA at: <http://www.cdera.org/>

### Box 11 Multi-hazard Early Warning Systems with global coverage

In 2005, at the request of the United Nations Secretary-General, a global survey of early warning systems was undertaken and coordinated by PPEW (Platform for the Promotion of Early Warning) with a view to advancing the development of a multi-hazard early warning system for all natural hazards. The survey report concluded that while some warning systems were well advanced, there were numerous gaps and shortcomings, especially in developing countries and in terms of effectively reaching and serving the needs of those at risk. The report recommended the establishment of a globally comprehensive early warning system, rooted in existing early warning systems and capacities. It also recommended a set of specific actions toward building national people-centred early warning systems, filling in the main gaps in global early warning capacities, strengthening the scientific and data foundations for early warning, and developing the institutional foundations for a global early warning system. These ideas were developed further by the Third International Early Warning Conference held in Bonn from 27 to 29 March 2006, and the WMO Symposium on Multi-Hazard Early Warning Systems for Integrated Disaster Risk Management on 23 and 24 May 2006. The Advisory Group of the International Early Warning Programme (IEWP) noted that the multi-hazard early warning system required long-term sustained action by diverse players and a strong political commitment to engender public action and make early warning a core task of national policy and disaster risk reduction strategy.

Source: <http://www.unisdr.org/ppew/inforesources/ewc3/Global-Survey-of-Early-Warning-Systems.pdf>; [www.ewc3.org](http://www.ewc3.org); [http://www.wmo.int/pages/prog/dpm/latestNews.html#ews\\_symposium](http://www.wmo.int/pages/prog/dpm/latestNews.html#ews_symposium)

early warning systems. It clearly demonstrated the need for enhanced coordination among agencies involved in different aspects of disaster risk management - such as risk identification, hazard monitoring and warning dissemination, disaster preparedness and response. Better coordination and end-to-end planning among agencies involved in these different components is being addressed through the establishment of an Early Warning Systems Cluster as part of the ISDR System (See Box 11 and 12).

As many countries develop disaster databases, prepare hazards maps, undertake comprehensive risk assessments, and establish early warning systems, national reporting still does not reflect gender aspects. The fact that women's and men's, girls' and boys' daily routines and physiological and social conditions place them differently at risk, and engage them in different networks of communication, needs to be emphasised. No doubt, gender and age-disaggregated data are important to collect and analyze so that the needs of the most vulnerable can be addressed in an appropriate and effective manner.

### Analysis of key challenges and gaps

#### Risk Identification and Assessment

- i. Few countries report the completion of comprehensive risk assessments and even less report on the use of risk information in the development of disaster risk reduction policies, strategies and plans. For instance, in the Pacific, it is reported that decision making processes at national, sectoral, provincial and community levels do not reflect explicit considerations of disaster risk assessments. This information, even when it exists, is not always available to decision makers.
- ii. As in other areas, many African countries have identified risk assessment as a priority but are unable to move forward due to a lack of the necessary technical, financial and human resources. This challenge in implementing HFA Priority 2 seems to be similar to the one on lack of resources reported under HFA Priority 1.

#### Early Warning Systems

- i. Country reports provide evidence of the many obstacles that remain in achieving early warning as a priority area. In a number of countries, in Africa in particular, acquisition and maintenance of the necessary equipment for hazard monitoring and for communicating warnings remains a major barrier to implementation. In others, there is still a gap between the development of regional and national hazard warning capacities and the development of effective local capacities to receive and use early warning to save lives.



- ii. As demonstrated by the Pacific's example above, there is an overall poor articulation between hazard monitoring and warning, risk identification and analysis, and disaster preparedness and response. This remains a more institutional challenge – to be highlighted for action under integrating systems for disaster risk reduction, under HFA Priority 1.
- iii. In addition to country reports on the creation of early warning systems, it is important to note from past experiences that warnings which do not lead to appropriate action contribute little, and action in response to warnings is only partly dependent on technical alerts or technology. How families and communities perceive threats, understand warnings, and know what actions to take, constitute only a few of the factors that influence whether life-saving action is ultimately taken. Thus, local knowledge and traditional warning systems can play vital roles, underlining the importance of engaging the most vulnerable groups, including children. Taken together, the effectiveness of preparedness and early warning can be significantly improved through better understanding and integration of the social factors that influence decision making at all levels.

### **Box 12**

#### **The International Early Warning Programme (IEWP) and the Platform for the Promotion of Early Warning (PPEW)**

The PPEW was established with the support of the Government of Germany to promote the recommendations of the 2003 Second International Early Warning Conference (EWC II) and to facilitate the IEWP. PPEW became operational in early 2004 and takes strategic direction for its work from the IEWP Advisory Group. Considering the wide partnership of the IEWP network, PPEW plays a central role in coordinating the work of the IEWP as well as in maintaining the vitality of the network and in ensuring that partners are connected with each other and can contribute effectively to and benefit from the work of the IEWP. As a fundamental principle, the IEWP advocates that the key elements of “people-centred” early warning will be duly reflected in the international agenda and dialogue on early warning, including the IEWP strategic plan.

The EWC II in 2003 defined the IEWP's five areas of work. The outcome and the recommendations of the EWC II were endorsed by the UN General Assembly, and were brought to the 2005 Second World Conference on Disaster Reduction (WCDR II) to advance discussion on early warning. The IEWP's five strategic areas of work include: (1) better integration of early warning (and related disaster risk reduction and management) into development processes and public policies; (2) improved data availability for investigating, forecasting/predicting and managing risks on different time scales; (3) improved capacities and strengthened early warning systems, particularly in developing countries; (4) the development of people-centred warning systems; and (5) mechanisms for sustaining the early warning dialogue and supporting the development and implementation of a programme.

The role of the IEWP Advisory Group is to provide policy guidance to ensure that the IEWP's structure and programmes duly reflect the outcomes of the major global dialogues on early warning and the recommendations of the Global Survey of the Early Warning Systems<sup>61</sup>. The Advisory Group identifies priorities, expected outputs, gaps and opportunities for the IEWP, and advises on the operational matters of the IEWP, including planning and reporting of the programme and opportunities for mobilizing additional resources. The Advisory Group was formed as a result of an Early Warning Stakeholder Consultation Meeting at the Third International Early Warning Conference (EWC III) in March 2006, building on the preceding consultation mechanism of the UN Inter-Agency Task Force on Disaster Reduction (IATF/DR). The first meeting of the Advisory Group took place in March 2007.

For further information, see: <http://www.unisdr.org/ppew/iewp/media.html>

<sup>61</sup> Global Survey of Early Warning Systems - An assessment of capacities, gaps and opportunities towards building a comprehensive global early warning system for all natural hazards at: <http://www.unisdr.org/ppew/info-resources/ewc3/Global-Survey-of-Early-Warning-Systems.pdf>

### 3.3 HFA Priority 3:

Use knowledge, innovation and education to build a culture of safety and resilience at all levels

#### School curriculum and public awareness

An area in which considerable progress would appear to have been made is increasing public awareness, particularly by including disaster risk reduction in school curricula and in the production and dissemination of public information material. The UN Decade for Education and Sustainable Development 2005-2014, led by UNESCO, and continuing work by Governments and other actors toward the achievement of the MDGs, continue to provide the context for both disaster-proofing development, and ensuring that Education for All Children is carried out in safe schools<sup>62</sup>.

There is enough experience in the fields of knowledge and education to reiterate that central to stimulating action is the need to raise awareness, engender wide engagement in preparedness from all parts of society, and translate an assessment of local risks into protective measures. To achieve these goals, preparedness and risk reduction programmes require priority support through better advocacy, increased investments and strong national efforts to translate preparedness principles to practical action.

A large number of countries report very encouraging progress in developing school-based programmes in particular. In Panama, for example, the programme “Rain is the Source of Life” consists of the placement of 10 rain gauges in schools affected by floods. The activity aims to develop a more holistic understanding of the environment, and for young children to appreciate the interconnectedness between them and the natural world around. The British Virgin Islands Department of Disaster Management has worked with a local community college to offer an online Certificate in Disaster Management and a safer building course is now also part of the curriculum of this institution. Also, disaster Management is formally included in all school curricula in the British Virgin Islands. Workbooks on geological hazards and hurricanes were designed for and introduced into pre-primary schools. A disaster management workbook has already been developed for primary schools and texts are now being designed for secondary schools.

In 2005, Haiti launched an awareness campaign for the hurricane season, which includes the use of radio spots and posters; and the Cayman Islands organized its first Earthquake Awareness Day on the anniversary of the December 2004 earthquake. The British Virgin Islands Public Information and Education arm of the Department of Disaster Management prepares and disseminates handbooks, brochures, handouts, and broadcast their awareness raising measures via radio and television.

All countries in South Asia report efforts to introduce disaster risk reduction into school curriculum and to launch school education

<sup>62</sup> Information on the “Disaster Risk Reduction Begins at School” 2006-2007 World Disaster Reduction Campaign is available at the UN/ISDR website at: <http://www.unisdr.org/wdrc-2006-2007>



#### Box 13 Pakistan educational and curriculum change

Pakistan has developed a programme to integrate disaster risk reduction into educational curricula and support awareness-raising in educational institutions. The initiative has developed curricula on disaster risk management for schools, colleges and universities. The objectives are to raise the awareness of students and to promote overall preparedness in educational institutions through conducting drills and reducing structural vulnerability. In addition, orientation programmes will be run to raise awareness amongst educational authorities and teachers.

The National Disaster Management Authority has also engaged the Ministry of Education to include elements of disaster risk reduction in the education system, and has noted the need to mobilize all stakeholders, including the Government, communities and the private sector, to ensure that disaster risk reduction is fully integrated into educational curricula in Pakistan. Emphasis is also placed on the need to build seismically safe school buildings or retrofit them to withstand high-impact hazard events. Curriculum resources (audio and video) prepared by various countries have been incorporated in school curricula and a set of guidelines on disaster risk reduction in the educational system have been developed.



programmes at different levels. Nepal, for example, reports an earthquake safety programme for schools being implemented in 20 schools within Kathmandu Valley. In India, “Disaster Management” has been introduced as a compulsory theme in school curricula at national and state levels through the adoption of an educational text series entitled “Towards a Safer India”. In addition, training in developing school safety plans is a crucial disaster risk management component being adopted in schools across India (For details on the Pakistan initiative, see Box 13).

The Governments of all Central Asian countries are also paying more and more attention to the development and inclusion of disaster response programmes and courses in secondary school and university curricula. Similarly, a wide range of training initiatives have been reported. The youth NGO from Tajikistan “For the Earth” has achieved considerable progress in child education in disaster preparedness and mitigation through training of trainers for children, parents and school teachers, applying the peer-to-peer methodology, and publishing relevant child literature in local languages.

The content of such programmes may often mirror the overall focus on disaster preparedness and response that characterizes the national systems that promote them. It is not clear from the reporting to what extent public awareness and education programmes focus on the causal processes of disaster risk or how they influence disaster risk reduction planning and decision making. Nor is it clear to what extent knowledge and education building measures consider gender aspects which should be based on gender and age-disaggregated data. For details on how the Platform on Knowledge and Education seeks to address some of these challenges, see Box 14.

### Information management and portals

A significant number of countries are also developing information portals to ensure that information on all aspects of disaster reduction is widely available. For example, the Department of Disaster Management and Emergencies of the Turks and Caicos Islands is currently testing its website, which is intended to make information on disaster management accessible to all sectors throughout the islands and outside of the Turks and Caicos Islands.

<sup>63</sup> Let the Children Teach Us:  
<http://www.unisdr.org/let-our-children-teach-us>

### Box 14 Platform on Knowledge and Education

Knowledge, education and public awareness are three essential pillars of disaster risk reduction. Education provides the knowledge and fosters the attitudes and behaviours needed to combat natural hazards. Despite some encouraging progress, a gap still exists between the growing recognition of the importance of teaching on disaster risk reduction and actually doing it in a meaningful way. Challenges include the fact that educational programmes dedicated to risk reduction remain the exception rather than the norm in most countries. Most programmes remain ‘pilot’ projects conducted on a small scale; and institutionalization requires long-term commitment.

The ISDR Thematic Cluster/Platform on Knowledge and Education seeks to overcome some of these challenges through its system-wide involvement. The Platform includes representatives of Member States, civil society, international and non-governmental organizations, including: Bangladesh, Spain, France, UNESCO, United Nations Children’s Fund (UNICEF), WMO, Council of Europe, International Federation of Red Cross and Red Crescent Societies (IFRC), ADRC (Asian Disaster Reduction Center) and many others (for an exhaustive list, please see the website: [www.un.isdr.org](http://www.un.isdr.org)). An interim organizing committee of the Cluster/Platform has been established to coordinate the efforts of the Cluster/Platform. It is formed by UNESCO, Council of Europe, ActionAid, UNICEF, IFRC, ProVention Consortium and ADRC.

The Platform has engaged in the collection of educational tools in the field of disaster risk reduction from Member States. More than 50 countries from Africa, the Arab League, Asia and the Pacific, Europe and North America and Latin America and the Caribbean have contributed so far. Most material have been developed over the past five years, and there is evidence of growing commitment to forging the links between knowledge and action. The multilingual collection is a compilation of hard-copy documents and electronic resources (books, brochures, manuals, books for children, toys, games, toolkits, posters, DVDs, and CD-ROMs) and useful websites covering disaster risk reduction material for both formal and informal education. Physical libraries at UNESCO and UN/ISDR headquarters provide resource material for a substantial database prepared in conjunction with the Coalition for Global School Safety and Risk RED (Reduction Education for Disasters). An overview of existing tools and options was published in 2006 in the publication “Let the Children Teach Us”<sup>63</sup>.

In Latin America, the Regional Disaster Information Center (CRID)<sup>64</sup> developed a virtual library which provides free access to over 10,900 electronic documents, and ensures the compilation and dissemination of disaster-related information in Latin America and the Caribbean. Chile has developed a new cooperation framework between the Metropolitan University of Educational Sciences and the Disaster Management Office, to form a strategic alliance aiming at the development of a culture of prevention. A new collaborative effort between the UN/ISDR secretariat and the University for Peace, located in Costa Rica, includes the incorporation of a new course focused on disaster risk reduction into the University's ongoing Master's programmes in environment, peace and security. (For details on the Andean System of 'Information for Disaster Prevention and Relief' refer to Box 15).

A number of sub-regional initiatives on developing information management systems through community-based measures such as newsletters and updates, as well as online 'communities of practice' for disaster risk management exist across Asia and the Pacific, in particular. These networks and information portals have not been necessarily reported in national authority submissions, but represent important work organised by NGOs and UN agencies in developing information partnerships with civil society and local organizations involved in disaster risk reduction activities.

### Analysis of key challenges and gaps

- i. Not many national authorities reported on progress made with capturing and utilizing local knowledge under this section. It is evident that local knowledge often plays an important role in the management of natural hazards and for the conservation of environmental resources. There are some ongoing attempts to address the issue. UNEP launched a programme to capture 'indigenous knowledge' in Kenya, South Africa, Swaziland and the United Republic of Tanzania. A project was also initiated in partnership with the Russian Association of Indigenous People of the North in the Nenets Autonomous Okrug and Kamchatka regions of the Russian Federation to document indigenous warning signs of natural hazards and how to cope with and mitigate their impacts.
- ii. In the context of encouraging local discourse on 'knowing risk', it will perhaps be useful to explore how contextual awareness of the local environment needs to be encouraged through education and public awareness campaigns - instead of simply providing generic solutions through the mass generation and circulation of standardized curriculum or awareness material.
- iii. It is well recognized from previous programme experiences across Asia, and Latin America and the Caribbean in particular, that schools' structural safety is paramount to ensuring risk reduction and sustainable development gains. Very few countries reported activity on strengthening the structural safety of schools directly, although this point will be further discussed below, under HFA Priority 4.

### Box 15 The Andean System of Information for Disaster Prevention and Relief

In the framework of the Andean Strategy for Disaster Prevention and Relief - promoted and led by CAPRADE (Andean Committee for Disaster Prevention and Relief), activities related to the creation of an Andean System of Information for Disaster Prevention and Relief (SIAPAD) are in the process of being finalized. This initiative is supported by PREDECAN (Project to Support Disaster Prevention in the Andean Community).

SIAPAD is conceived of as a web portal specialized in relevant information on disaster risk management. The portal will help visualize information distributed and available in different institutions of the Andean countries and international organizations in an integrated manner.

SIAPAD seeks to: (1) offer a solution for the search and diffusion of information about subjects related to disaster risk management; (2) offer tools for general and specific visualization of geographic information related to disaster risk management; and (3) function as a navigation guide for web knowledge and information resources on disaster risk management.

For further information, see:  
<http://www.comunidadandina.org/predecan> or  
<http://www.siapad.net>

<sup>64</sup> CRID: Centro Regional de Información sobre Desastres (Regional Disaster Information Center): [http://www.crid.or.cr/crid/ing/index\\_ing.html](http://www.crid.or.cr/crid/ing/index_ing.html)



### 3.4 HFA Priority 4:

#### Reduce the underlying risk factors

---

##### Land-use planning and house building

Progress reported on reducing underlying risk factors is more limited, with a smaller number of countries across regions emphasizing results relevant to this priority area.

Amongst countries reporting on this area, a substantial number report actions to address existing risk through either physical mitigation measures, through retrofitting existing buildings and facilities or through strengthening building and planning regulations and codes. The Islamic Republic of Iran, for instance, reports efforts to reduce flood risk by retrofitting a large number of houses and to strengthen key buildings and facilities subject to earthquake risk.

Other countries, such as Algeria, are involved in efforts to improve their building codes and planning laws to reduce future risk. Jordan and Syria are also reviewing their arrangements to manage earthquake risk. Yet others, such as the United Republic of Tanzania and Nepal, report efforts to include disaster reduction concerns in national development and poverty reduction strategies. Pakistan reports progress in rebuilding housing with earthquake-resistant structures in the area affected by the 2005 earthquake and plans to retrofit risk-prone schools. Sri Lanka plans to develop new building guidelines, protect coastlines through natural vegetation barriers, reduce drought vulnerability through introducing rainwater harvesting, and reduce flood risk by de-silting watercourses in flood-prone regions.

The Cayman Islands is upgrading its building codes following Hurricanes Ivan and Jeanne in 2004, while both Colombia and El Salvador provide examples of applying land-use planning to disaster reduction. Jamaica is incorporating hazard information into the development approval process and the national and local levels. As a result of joint efforts of Tajikistan's academic circles, NGOs and the donor community, much progress has been achieved in the last few years in support of safer building strategies and the installation of state-of-the-art digital seismic stations, risk mapping and risk reduction techniques. To unite

efforts, an inventory of residential buildings and social facilities (schools and hospitals) was developed in Tajikistan to create earthquake scenarios and develop recommendations for the authorities of the capital city, Dushanbe, aimed at helping implement measures that will substantially reduce seismic risk. Similar activities have been conducted in Bishkek (Kyrgyzstan) and Tashkent (Uzbekistan) under the UN RADIUS Project<sup>65</sup>.

The Bahamas "Land Use Policy and Administration Project" signals an effort to address three aspects of land-use considered crucial to reducing underlying risks for the island nation, including: (1) efforts to modernize land administration, including initial steps to improve the legal framework for modernizing the real property rights registration system and securing land tenure; (2) preparing a geographical information system database for vulnerable islands; and (3) addressing national land issues and developing policy guidelines which consider legal, technical, institutional, economic, environmental and social aspects.

In contrast, land-use planning and regulation of building codes for both rural and urban areas is a challenge to enforce in most southern African and Asian countries.

However, many of the above-mentioned measures for addressing underlying risks are in the planning stage and it is too early to assess their impact on disaster risk levels. National reports carry little mention of efforts to retrofit risk-prone schools or hospitals (with exceptions in Latin America) nor lifeline infrastructure such as water and electricity networks. Evidence of the allocation of national budget lines to efforts of this kind is unavailable in the national reports. Only a few countries such as Maldives report the application of strategic national planning efforts to reduce disaster risks.

There is also little mention of successfully reducing risk through sustainable natural resource management and the incorporation of disaster risk reduction measures into environment planning and management.

<sup>65</sup> RADIUS: Risk Assessment Tools for Diagnosis of Urban Areas against Seismic Disasters. [www.geohaz.org/contents/projects/radius.html](http://www.geohaz.org/contents/projects/radius.html)

## Climate change and adaptation

Another apparent trend is that few countries report on efforts to directly address climate change impacts, through the development of National Adaptation Plans of Action (NAPAs) - in the case of less developed countries - or through other means. This does not imply that countries are not addressing adaptation concerns as part of their national development plans, but rather that these efforts are not being explicitly considered as part of their efforts to address disaster risk. In many countries, this reflects a separation between the institutional and legislative systems developed to address disaster risk and those developed to address climate change. In Africa, for example, where both climate-related hazard and vulnerability levels are likely to be drastically affected by global climate change, few countries report an intention to connect its strategies and policies on disaster risk reduction to those on adaptation to climate change. In Europe, in contrast, the issue of adaptation to climate change is starting to shape the disaster risk reduction agenda. The United Kingdom of Great Britain and Northern Ireland is quite progressive in terms of mainstreaming climate change in public policy and developing local action plans that link into the national strategy on climate change.

In a number of countries, for instance Switzerland, France, Germany and Scandinavian countries, national platforms for disaster reduction and Hyogo Framework focal points are actively involved in the development of national strategies to adapt to the negative effects of climate change. France, for example, now has an early warning system for heat waves in place.

The example of Maldives (see Box 16) is pertinent to how small island developing states could manage vulnerability through strategic planning for climate change adaptation.

## Risk insurance and private sector involvement

Overall, the involvement of other governmental sectors, financial institutions and the private sector in disaster risk reduction activities is reported only sporadically in national reporting. On the one hand, this may indicate that development actors are not yet factoring disaster risk into their plans and investment decisions. It is more likely, however, that there is a substantial amount of ongoing activity involving utility companies, environment and planning ministries, the insurance and banking sectors, the transportation sector, large corporations, the tourism industry and others that is simply not being captured in government reporting. If national institutional systems are principally oriented towards preparedness, then it is possible that other developmental interventions may be largely invisible to the organizations responsible for disaster risk reduction.

An interesting case of building public-private partnerships for reducing underlying risks was reported by Bangladesh. In the past two years, the Ministry of Food and Disaster Management in Bangladesh



### Box 16 Managing vulnerability through strategic planning: Maldives

It became painfully clear after the December 2004 tsunami how vulnerable the Maldives were, facing risks that include low elevation above sea level, perennial beach erosion, dispersion of population across small islands, remoteness and inaccessibility of islands, concentration of economic activities around tourism, and high dependence on imports. Climate change and associated risks add to the growing exposure of the Maldives. The impact of the tsunami on Maldives reinforced the urgency of enhancing mitigation and redevelopment activities, and the development of a programme called "Safe Islands Programme".

The Safe Islands Programme focuses on the development of the larger islands with better economic opportunities, and environmental resilience. It also includes providing remote island populations with incentives for voluntary migration to main 'hub' islands. In addition, to mitigate future risk from disasters, land-use plans have been developed, incorporating features of high resilience. The Programme activities include a wider environmental protection zone, elevated areas for vertical evacuation in case of floods, the establishment of alternative modes of communication and detailed disaster management plans. Currently five islands have been identified for the Programme and development plans are being prepared in consultation with local populations.



### **Box 17** **The World Bank's Catastrophe Insurance Pool**

Catastrophe insurance pools can help countries increase insurance penetration when the domestic insurance markets are under-developed. They allow the Governments to transfer some of its contingent liability on private assets to the private insurance market, since in the absence of such a market Governments have a legal or moral obligation to finance reconstruction/replacement of assets destroyed by a disaster.

The Turkish Catastrophe Insurance Pool (TCIP) is such an example, which insures registered housing against earthquake risk. The key objectives for the TCIP defined by the Government of Turkey were to:

- Ensure that all property tax paying domestic dwellings have earthquake insurance coverage;
- Reduce government fiscal exposure to recurrent earthquake;
- Transfer catastrophic risk to the international reinsurance market; and
- Encourage risk mitigation through the insurance mechanism.

The TCIP's earthquake insurance is legally compulsory for many urban Turkish homeowners, although the compulsion is not well enforced. Local insurers act as distributors of the TCIP (they do not currently retain any fraction of TCIP's earthquake risk), in exchange of a commission (15-20 per cent of written premium) and provide additional coverage in excess of that offered by the Pool. Since its inception in 2000, the TCIP's penetration ratio has averaged 17 per cent but is now in excess of 20 per cent, with some 2.5 million policies sold in 2006.

### **The World Bank's Livestock Insurance Indemnity Pool**

The Livelihood Insurance Indemnity Pool in Mongolia is another illustration where the World Bank helps the Government of Mongolia to protect herders against excessive livestock mortality caused by harsh winters, while limiting the Government's fiscal exposure to natural disasters. While catastrophe pools can be used to create proxy direct markets, increase domestic insurance penetration and ultimately transfer catastrophic risks from the Government and/or households to the private insurance industry, they can also help Governments manage the fiscal impact of natural disasters.

has given much emphasis on establishing a holistic partnership framework to integrate the programmes, policies and resources of the Government, NGOs and the private sector in one comprehensive risk reduction programme. This includes signing letters of agreements and memorandums of understanding with entities to implement small-scale risk reduction projects at community level.

In the World Bank's experience of working with Governments in the aftermath of disasters, as a consequence of the limited domestic insurance coverage for catastrophic risks provided by local markets and the lack of risk awareness or economic incentives to engage in ex-ante risk management, national authorities generally respond to disasters after the event, as opposed to preventing cumulative risks. In responding to the aftermath, Governments – especially in countries with low human development gains - rely on domestic budgets and on extensive financing from international donors.

The approach advocated by the World Bank and its partner institutions such as WMO and the World Food Programme (WFP), is to provide countries with strong economic incentives to engage in active risk management and thus over time achieve significant reduction in their growing vulnerabilities. On the whole, there are a number of un-reported key regional initiatives now under way to strengthen risk transfer as a risk reduction measure. The World Bank's Caribbean Catastrophe Risk Insurance Facility and catastrophe insurance pools in Turkey, Mongolia and the Caribbean Basin (see Box 17), and contingent credit facilities in Turkey, Mongolia and Colombia, or efforts to insure farmers against crop losses due to climate variability in Africa, are good examples of ongoing initiatives. There are also partner initiatives between WMO, WFP the World Bank and the private sector to facilitate the development of catastrophe insurance and weather risk management markets targeting the agriculture, energy and other sectors.

### **Analysis of key challenges and gaps**

- i. Experience has shown that improving building codes and planning laws may have little impact in countries where a large percentage of housing and urban development is in the informal sector. However, a small number of countries report efforts to train informal sector builders, for

example, in safe building techniques. Similarly, there is little or no evidence in the reporting from countries on the enforcement of building codes and regulations.

- ii. Also, past experience has shown that school safety is important to emphasize both as a sound preparedness measure against exposure to recurrent or pervasive hazards, and also as a risk reduction measure to ensure that all communities are resilient and self-sufficient to consider immediate recovery measures with secure lives, livestock and food supplies. Safe structures, especially in remote areas vulnerable to floods, cyclones, rising sea levels, and earthquakes, can provide a whole community and their livestock with multi-purpose shelter to mitigate risks associated with a range of frequency and severity of hazards.
- iii. There is still little reflection in the government reporting of efforts by the private sector and by international financial institutions to increase

access to risk transfer measures such as insurance, although some countries, such as the Cayman Islands, credit the effectiveness of risk transfer for their rapid recovery from a major hurricane disaster. One of the exceptions is Costa Rica, which reports that a study has been undertaken to insure public infrastructure and investment in close collaboration with the National Insurance Institute.

- iv. Few countries have reported on the implementation of psycho-social training programmes, especially in post-disaster recovery scenarios, which are important for all sections of an affected community, in particular children. This gap in addressing the issue via country reporting is perhaps due to the insufficient scale of such programmes and general lack of capacities to respond to the psycho-social needs of populations. The issue is discussed further elsewhere in this Review.



## 3.5 Hyogo Framework Priority 5:

### Strengthen disaster preparedness for effective response at all levels

#### Efforts at national and local levels

All disaster events reveal that even nations that have applied risk reduction measures for decades still face considerable residual risks that cannot be managed and that will still cause major disaster situations. Since such risks cannot be eliminated, there is a need to mitigate losses associated with them when they manifest as disasters. Preparedness can be defined in different ways: response preparedness usually refers to actions to prepare for and plan an effective emergency response; but in a broader sense, preparedness can refer to a wider range of actions that can help mitigate losses in disasters. For example, communities and businesses can formulate preparedness plans to identify and minimize potential losses associated with existing or likely future risks.

Most countries report progress in response preparedness, however a growing number are strengthening preparedness capacities in a broader sense, linked to education, risk identification, early warning and investments in mitigation.

It is important to note that all countries, across regions, reporting activities on the five HFA priority areas, have perhaps achieved the most 'success' under Priority 5 – for strengthening disaster preparedness. Evidence of this reported success can perhaps also be found in the fact that recent climatic disasters have in fact shown a spectacular reduction in mortality losses – in both developed and developing country contexts. This reduction can be attributed to the recent and ongoing preparedness activities adopted by national authorities and humanitarian organizations across the world.

Effective disaster preparedness has to take root at the local level. A number of countries, such as Cuba, Bangladesh and Vietnam, have already shown that when a comprehensive improvement of disaster preparedness at the local level is linked with national capacities to monitor and warn of impending hazard events, loss of life can be drastically reduced. In Cuba, in particular, loss of life in major hurricane events has been almost eliminated due to effective early warning and preparedness.



#### Box 18 Philippines: Multi-pronged approach to disaster risk reduction

In the Philippines, disaster risk reduction is being dealt with in a variety of complementary ways under the implementation of the National Disaster Coordinating Council's four-point Plan of Action for Disaster Preparedness. These include:

- Upgrading the forecasting capability of the Philippine Atmospheric, Geophysical and Astronomical Services Administration and the Philippine Institute of Volcanology and Seismology through improvement of equipment, staff development, establishing links with foreign forecasting institutions covering the Pacific Rim and South China Sea, and the installation of rainfall and water level gauges;
- Promoting an integrated and coherent strategic public information campaign on disaster preparedness through nationwide drills on synchronized Building Emergency Evacuation Plan and tsunami and earthquake warning, airing of "Safe Ka Ba" Disaster Management School on Air; and production and distribution of posters and flyers on natural hazards;
- Enhancing capabilities of Local Chief Executives and their respective Disaster Coordinating Councils in identified vulnerable areas through the conduct of disaster management-related training; and
- Strengthening mechanisms for Government and private sector partnership in relief and rehabilitation through the development of a Private Sector Disaster Management Network, developing ongoing arrangements with various entities on operational preparedness and capabilities including communications, technical skills and expertise, health, availability of heavy equipment for search and rescue operations, rehabilitation of internally displaced persons and communities, implementation of disease and trauma management, provision of houses to communities affected by typhoons, and harmonization of hazard mapping.

Philippines provides an interesting example for adopting a multi-pronged approach to disaster risk reduction. See Box 18 for details.

A significant number of countries across regions are now taking action to strengthen local capacities for disaster preparedness. Since 2001, India, has been implementing a local-level disaster preparedness programme which covers most hazard-prone districts of the country - with an impact on some 600 million people living in these districts. Many other countries report pilot projects in a number of local administrative areas. The Indian local level disaster preparedness programme demonstrates the potential for up-scaling local-level disaster risk reduction to the national scale and achieving self-reliant preparedness and response capabilities.

Central Asian states too have mechanisms and systems in place for disaster response, mitigation and rehabilitation to mobilize and coordinate the use of the central and local governments' resources. In Tajikistan, a Rapid Emergency Assessment and Coordination Team has been formed for coordination, interaction and cooperation among national authorities, UN agencies, donors, international and non-governmental humanitarian organizations.

In September 2004, the Australian Government announced the "Working Together to Manage Emergencies" initiative with the intention to build Australia's national preparedness for emergencies. The initiative works through establishing local grant schemes to assist local authorities to develop and implement emergency risk management initiatives, identify vulnerabilities with a view to enhancing protective measures for critical infrastructure, and provide emergency management and security awareness training for local government staff. Norway's municipal level disaster risk reduction efforts are worth highlighting (see Box 19).

Regional reports received for southern African countries reveal that detailed and well-integrated emergency response structures – mainly in the form of disaster management committees or units – have been established at national, provincial and district levels. Such committees coordinate and lead responses during emergencies. In some countries such as Namibia and Zimbabwe, flood contingency plans have been developed for flood-prone districts or regions.

### **Institutional efforts – UN and international agencies**

At the international level, the UN Office for the Coordination of Humanitarian Affairs (OCHA) has led a group of agencies and NGOs also engaged in the Inter-Agency Standing Committee (IASC) to develop indicators and common principles for preparedness. OCHA has, over the past few years, assisted countries with the UN Disaster Assessment and Coordination (UNDAC) system. At the request of Governments, it has sent UNDAC teams of multi-sectoral experts on disaster response preparedness missions to assist in evaluating national disaster response structures, capacities and plans, and suggest areas requiring development and improvement. Through the International Search and Rescue Advisory



### **Box 19 Norway: Municipal-level disaster risk reduction**

In Norway, it is the 431 municipalities that are the local foci for national disaster risk reduction efforts. The municipalities are responsible for the functioning of key public services and the coordination of these during emergencies (e.g. local infrastructure, health services, care for the elderly and other vulnerable populations, and information to the public). In accordance with the principles of responsibility and proximity, the main responsibility for preventive planning and disaster management within territorial borders lies with the municipalities. Risk and vulnerability analysis, physical planning, emergency plans and exercises are the cornerstones of disaster risk reduction at the local level. All municipalities are required to have an operational fire and rescue service. The municipalities are furthermore required by law to undertake civil emergency preparation within the health sector but, until now, no trans-sectoral judicial obligation regulating cross-sectoral preparedness and disaster risk reduction at the local level, is in place.

Within this context of local-level responsibility, civil society and NGOs are active partners in reducing disaster risks and in handling emergencies and disasters. This public-private partnership is fundamental for a well-functioning preparedness system and an effective disaster response.



Group (INSARAG) Secretariat, OCHA also conducts numerous activities to improve international urban search and rescue capacity and systems to respond to earthquakes.

The International Federation of Red Cross and Red Crescent Societies (IFRC) have also made considerable efforts to promote International Disaster Response Laws, Rules and Principles . The related programme seeks to reduce the vulnerability and suffering of people affected by non-armed conflicts by raising awareness and promoting the implementation and strengthening of the laws, rules and principles that ensure a timely, adequate and efficient international response to disasters, where international involvement is needed.

### **Analysis of key challenges and gaps**

- i. The challenge faced by existing contingency plans across various countries is that they do not include recovery and rehabilitation elements. In some cases, where such elements have been included in the plans, capacities to apply them in post-disaster recovery scenarios are not entirely adequate.
- ii. To strengthen disaster preparedness for effective response at all levels requires promoting the inclusion of women in disaster-related professions where they are still under-represented. Past experience across regions shows how active engagement with grassroots women's groups could help enhance resilience in families and communities.
- iii. A key challenge that emerges from an analysis of country reporting under this Hyogo Framework Priority, and despite the progress mentioned above, is mismatch between national-level efforts to strengthen (and build capacities for) institutional and legislative systems for preparedness, and similar efforts at the intermediate and local levels. There seems to be a significant advocacy and political lobbying role undertaken by institutions at the national and international levels, for adopting risk reduction as a priority at the national level. However, such efforts are often not adequately matched by awareness or capacities to translate commitments at the local and intermediate levels – where the real 'action' often has to be supported.