

**Disaster Risk Reduction Strategies and Risk Management Practices:
Critical Elements for Adaptation to Climate Change**

Submission to the UNFCCC Adhoc Working Group on Long Term Cooperative Action

by
**The Informal Taskforce on climate change of the Inter-Agency Standing Committee¹ and
The International Strategy for Disaster Reduction²**

11 November 2008

This paper has been prepared as a submission to the UNFCCC Parties on the risk-related matters identified in the Bali Action Plan (1/CP.13, paragraph 1. (c)). The paper provides further background in respect to the submission to the AWG-LCA on 29 September 2008 from the International Strategy for Disaster Reduction (ISDR) titled "Proposals for the AWG-LCA Chair's Assembly Document on Enhanced Action on Adaptation"³, and it includes specific information from the humanitarian perspective.

1. Introduction

Climate-related stresses and shocks already figure prominently in the lives of many of the world's people and particularly so in the lives of the poor. Events such as droughts, floods and storms are often terrible experiences for those affected: they cause great loss of life, destroy countless livelihoods and leave millions of people devastated.

In the coming decades, climate change is expected to exacerbate the risks of disasters⁴, not only from more frequent and intense hazard events but also through greater vulnerability to the existing hazards. More frequent and intense storms and floods and long-lasting droughts can erode existing community coping capacity to prepare, respond and rebuild after successive hazard events. The other adverse impacts of climate change, for example on public health, ecosystems, food security, migration and on the situation of specially vulnerable groups such as children, the elderly and women, will increase the vulnerability of communities to natural hazards of all types. Any increase in disasters, whether large or small, will threaten development gains and hinder the implementation of the Millennium Development Goals. Many of the countries that are already of humanitarian concern and which have populations that are highly vulnerable will face even greater risk owing to the impact of climate change.

During the past 20 years, the number of recorded disasters has doubled from approximately 200 to more than 400 per year. Disasters caused by floods are more frequent (from about 50 in 1985 to more than 200 in 2005) and damage larger areas than they did twenty years ago. Current trends indicate a future where extreme climate variability and its consequences are likely to become the norm. The humanitarian implications are significant, including more frequent and intense storms, coupled with rising sea levels increasing the risk of

¹ See Annex 2 for information on the IASC.

² See Annex 3 for information on the ISDR System.

³ See Annex 1 for the ISDR System's submission to the AWG-LCA.

⁴ Disasters may be defined as "a serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses or impacts and which exceed the ability of the affected community or society to cope using its own resources." Disasters arise from the combination of natural hazards, conditions of vulnerability, and insufficient capacity or measures to reduce or cope with the potential negative consequences.

flooding. Nearly 634 million people – one tenth of the global population – live in at-risk coastal areas a few meters above existing sea levels, three quarters of which are located in the Asian flood-prone river deltas or in low-lying small island states. Almost two-thirds of mega-cities with populations greater than 5 million fall, at least partly, in low-lying flood-prone areas. 21% of the urban populations of least developed nations live in such environments.⁵

Between 1991 and 2005, 3,470 million people were affected by disasters, 960,000 people died, and economic losses were US\$ 1,193 billion. Poor countries are disproportionately affected, owing to intrinsic vulnerabilities to hazards and comparatively low capacities for risk reduction measures. Small countries are also particularly vulnerable: Grenada's losses of 919 US\$ million as a result of Hurricane Ivan in 2004 were equal to 2.5 times its GDP.

Over the last two decades (1988-2007), 76% of all disaster events were hydrological, meteorological or climatological in nature; accounting for approximately 45% of the deaths and 80% of the economic losses caused by natural hazards. The likelihood of increased weather extremes in future therefore gives great concern that the number or scale of weather-related disasters will also increase.

This submission addresses the risk-related elements referred to in the Bali Action Plan, namely disaster reduction strategies and risk management including risk sharing and transfer mechanisms⁶. It adds further background in respect to the submission to Parties on 29 September 2008 from the ISDR titled "Proposals for the AWG-LCA Chair's Assembly Document on Enhanced Action on Adaptation" (attached as Annex 1) and the Munich Climate Insurance Initiative (MCII) submission to AWG-LCA⁷. Within the risk management section it provides a particular focus on humanitarian response to disasters, as this has received little attention in the climate change negotiations to date and is very relevant to climate-related risks. Given that climate change impacts will almost certainly lead to more disasters it is an area that requires further consideration.

The submission proposes that efforts to reduce vulnerability and build resilience to extreme events should be made a priority in the immediate and short term. This prioritization would help avoid humanitarian and economic losses in the short term, as well as secure development gains and provide a more sustainable basis for other adaptation action over the long term. It would capitalize on currently available knowledge and capacities, especially in the disaster risk reduction and risk management fields.

It is also proposed that actions to develop institutional enabling environments and regional supporting mechanisms for knowledge sharing, scaling up existing good practices, capacity building and technology support, should build on existing mechanisms, institutions, tools and capacities. In the areas of risk reduction, risk management and emergency preparedness and humanitarian assistance, there are well-established institutional mechanisms and frameworks, at national, regional and international levels, that encompass the relevant organizations and address relevant matters of policy, planning and field-based practice. Each will need strengthening as the impact of climate change increases.

⁵ From the Report of the Secretary-General to ECOSOC: Strengthening of the coordination of emergency humanitarian assistance of the United Nations, 2008.

⁶ The Bali Action Plan (1/CP.13) paragraph (1) (c) calls for (inter alia): (i) "...ways to enable climate-resilient development and reduce vulnerability of all Parties...", (ii) "Risk management and risk reduction strategies, including risk sharing and transfer mechanisms such as insurance"; (iii) "Disaster reduction strategies and means to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change.

⁷ http://www.climate-insurance.org/upload/pdf/MCII_submission_Poznan.pdf

2. Disaster Risk Reduction Strategies and Risk Management Practices: Means to Advance Adaptation to Climate Change

2.1 Climate-resilient development and the reduction of vulnerability

The Bali Action Plan in paragraph 1 (c) (i) calls for international cooperation to support the urgent implementation of adaptation actions, including through various ways to enable climate-resilient development and reduce vulnerability of all Parties. It specially notes the urgent and immediate needs of developing countries that are particularly vulnerable to the adverse effects of climate change.

Disaster risk reduction strategies and risk management are approaches that also seek to build resilience and reduce vulnerability, and therefore they offer capacities to support adaptation, in respect to coping with extreme events such as drought, floods and storms as well as addressing longer term issues such as ecosystem degradation that increase vulnerability to these events.

Underlining this, the internationally agreed agenda for reducing disaster risks and disaster losses, the Hyogo Framework for Action 2005-2015⁸ is subtitled “Building the Resilience of Nations and Communities to Disasters” and considers *inter alia* the integration of risk considerations into sustainable development and the development of institutions, mechanisms and capacities at all levels to systematically build resilience to hazards. The implementation of the Hyogo Framework therefore provides a powerful tool to support adaptation, through building resilience and reducing vulnerability to climate-related hazards. It will also directly strengthen the catalytic role of the UNFCCC as envisioned in the Bali Action Plan (see paragraph 1 (c) (v).) As expressed by the United Nations Secretary-General, however, “While some progress has been made, the magnitude of resources available for disaster risk reduction falls well short of that required to ensure that the resilience of nations and communities is built.”⁹

2.2 Disaster Risk Reduction Strategies

Disaster risk and the adverse impacts of natural hazards can be reduced by monitoring, systematically analysing and managing the causes of disasters, including by avoiding hazards, reducing social and economic vulnerability, and improving preparedness for response to adverse hazard events¹⁰.

The two main elements that give rise to risk are the *hazards* – the potential damaging events or phenomenon – and the *vulnerability* of populations to these hazards. Natural hazards by themselves do not cause disasters; it is the combination of an exposed, vulnerable and ill-prepared population or community with a hazard event that results in a disaster. Human activity, such as land use changes, environmental exploitation and unplanned settlement, often exacerbates the level of disaster risk.

Based on these concepts, the Hyogo Framework¹¹ sets out strategies for reducing disaster risks through the five priorities for action:

⁸ Agreed at the World Conference on Disaster Reduction in January 2005, in Kobe, Japan, by 168 Governments and endorsed by the United Nations General Assembly, the Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters, provides the foundation for the global implementation of disaster risk reduction. See: <http://www.unisdr.org/eng/hfa/hfa.htm>.

⁹ 2008 Report of the Secretary-General to the UN General Assembly, “Implementation of the International Strategy for Disaster Reduction”, A/63/351.

¹⁰ Derived from the revised ISDR System definition of “Disaster risk reduction”, 2008.

¹¹ The Hyogo Framework specifically identifies the need to “promote the integration of risk reduction associated with existing climate variability and future climate change into strategies for the reduction of disaster risk and adaptation to climate change...”

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

These priorities are also relevant to the Bali Action Plan, which calls for disaster risk reduction to advance adaptation. Of these priority areas, three immediate and cost-effective areas where action can be taken to advance adaptation to climate change through disaster risk reduction are:

Risk assessments. These involve the collection and summary of national risk information, including socio-economic data on existing vulnerability and capacity. They should cover the entire territory and all populations, and should be routinely updated to assess emerging risks including those related to climate change. The information is most often represented in risk maps. It should be made widely available to all relevant users, in order to support policymaking, raise community awareness, and enable populations to reduce their own risks.

Early warning systems. Effective early warning systems involve four elements: risk knowledge, monitoring and warning service, dissemination and communication, and response capability. Early warning systems are highly effective in saving lives and livelihoods. Although all four elements of the system need to be strengthened in many countries, it is the communication of warnings and people's readiness to act that usually fails in disasters¹².

Sector-specific risk reduction plans. To be effective, national plans and strategies to reduce disaster risk need to be integrated in the plans and programmes of every sector and area of development. Land-use planning, the locating of critical infrastructure, the management of natural resources, the protection of key assets¹³ —all should ensure that risk is identified and reduced at all stages from planning through to implementation.

The strengthening and scaling-up of these and other disaster risk reduction strategies to advance adaptation are recommended in the submission to the AWG-LCA from ISDR and attached as Annex 1. The ISDR System is a system of partnerships that supports nations and communities to implement the Hyogo Framework for Action through widened participation of Governments and organizations in the ISDR; raising the profile of disaster reduction in the priorities and programmes of organizations; and building a stronger, more systematic and coherent international effort to support national disaster reduction efforts¹⁴

2.3 Risk Management

Risk management is the term used for the systematic approach and practice of managing uncertainty and potential losses, involving risk assessment and analysis and the development of strategies and specific actions to control and reduce risks and losses. Risk arising from climatic hazards can be addressed by preventative measures, such as avoiding settlement in floodplains and building strong buildings; monitoring, early warning and response measures to manage extreme events; and risk transfer, including insurance, to cope with unavoidable impacts.

¹² See "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". United Nations, 2006.

¹³ For example, see Protecting New Health Facilities from Disasters: Guidelines for the Promotion of Disaster Mitigation, Washington D.C., PAHO/WHO 2003.

¹⁴ Please see Annex 3 on the ISDR System.

a. Risk Management in Sectors

Weather and climate-sensitive sectors such as water supply, agriculture, food security, energy, transportation, coastal zone management, environmental management and public health already have considerable experience and mature methodologies to deal with the effects of weather and climatic variations, including extreme events and conditions such as seasonal rainfall deficiencies and heatwaves. The disaster management field has similar highly relevant experience and methodologies.

Information on these experiences and methodologies, and on existing capacities to implement them, including information developed under the UNFCCC Nairobi Work Programme, need to be progressively developed, reviewed, screened for adaptation purposes, collated and communicated as guidance for Parties. This requires systematic sector-based work in countries and at international levels.

Climate-related issues typically span disciplines, sectors and administrative regions and therefore cannot be dealt with within single sectors or organizations. Special efforts are needed to bridge the gaps between sectoral organizations, in order to share relevant information concerning risks and their management as well as achieve efficiencies and synergies.

This should include the systematic consideration of risk and risk reduction strategies in national integrated strategies and plans, such as national development plans, food security and related human security strategies, environmental management strategies, integrated water resource management plans, and integrated coastal zone management plans.

b. Humanitarian Assistance as an Element of Risk Management

Reducing disaster risk, and improving other elements of risk management, will not fully eliminate the need for humanitarian response to extreme events, particularly in more vulnerable communities. Strengthening local resilience and capacity to prepare and respond to hazard events is essential. However, when local coping capacity is exceeded, it will need to be supported by national humanitarian assistance, such as the provision of medical aid, water shelter and other forms of technical and logistical support.

Most countries have national mechanisms for coordinating and delivering humanitarian assistance in time of need and these mechanisms will need to be strengthened, particularly in the more vulnerable countries. However, many countries will also need to call on international assistance. By doing so national response capabilities can benefit from technical and coordination support, emergency relief supplies, including food stocks and agriculture inputs, tents and medical support services, and associated logistics capacities. Ideally, relief supplies are quickly followed by protection and support for livelihoods such as repair of critical infrastructure, inputs for agricultural production, control of crop pest and animal diseases, and assessment of environmental damage or hazards.

The United Nations General Assembly has consistently supported humanitarian actors to strengthen international cooperation and coordination in the field of disasters. Member States and international humanitarian organizations have significantly strengthened preparedness, response and early recovery systems and coordination structures over the last decade. This has included improved arrangements for effective civil-military coordination, logistical support, emergency shipping, information technology expertise and mechanisms, and management of emergency relief stocks.

At the international policy level, the Inter-Agency Standing Committee (IASC) is the main coordination mechanism that brings together international actors on humanitarian issues including the United Nations system, the International Red Cross and Red Crescent Movement, the International Organization for Migration and key international non-governmental organizations active in humanitarian assistance (see Annex 2). At the national level, pre-agreed mechanisms for supporting government-led coordinated

responses to disasters exist in many areas. The United Nations supports national efforts, for both preparedness and response, through its Humanitarian Coordinators and Resident Coordinators. The existing funding mechanisms for humanitarian assistance, which rely entirely upon donor voluntary contributions, include in particular the Central Emergency Response Fund (CERF), the Consolidated Appeals Process (CAP) and individual agency appeal mechanisms.

In 2007, CERF managed donations of over \$ 350 million USD for humanitarian responses to natural disasters and conflicts. During the same time period, the consolidated appeals process (CAP) requested over \$ 5.1 billion USD, of which \$ 3.7 billion was received. Humanitarian needs are not being met by current funding support: on average between 60-76% of the CAP funding requirements have been funded over the past 5 years.

Overall, demands for humanitarian funding for natural disasters have consistently increased. At the time of writing, recorded contributions for natural disaster responses in 2008 total over USD 961 million, up from USD 808 million in 2007, and USD 257 million in 2006. The total number of flash appeals has also increased considerably in recent years. In terms of humanitarian response, floods and storms now make up the bulk of sudden onset international disaster responses. Of the 27 humanitarian Flash Appeals that have been issued since January 2006, 19 have been in response to floods and cyclones.

Climate-related stresses and disasters are also likely to add to the scope, scale and complexity of human mobility. When coupled with effects on natural resources availability and allocations, the risk of conflict is also likely to increase, particularly in already fragile settings. In this context, the risk of discrimination and violation of economic, social and cultural rights would require special attention, and the current international protection system would need to be revisited to address the challenges of different types of forced migration arising from changing climate conditions.

Adapting to climate change for humanitarian actors will require *inter alia* more effective vulnerability analysis and mapping and early warning systems, contingency planning, and other preparedness measures. It will also require reinforcement of coordination and partnerships between Governments and international systems. Innovations will be needed to secure the additional resources required and to transparently account for these extra resources. The existing funding mechanisms for humanitarian assistance have the institutional knowledge and experience to support this aspect of adaptation.

Overall, the available evidence points to the need for proactive strengthening of capacities to cope with climate-related extreme events. Specifically, this submission proposes that future climate change negotiations should take account of, and manage, the humanitarian consequences of climate change, and protect human security, through the systematic reduction of disaster risks, including emergency preparedness and reinforcement of response and recovery mechanisms at local, national, regional and global levels.

c. Risk Sharing and Transfer Mechanisms

Because disaster risks cannot be totally reduced, the remaining economic risks need to be shared, spread or financed so that individual people, companies, communities and countries are not forced into poverty or bankruptcy if a catastrophic event occurs. Mechanisms for sharing or transferring risk are an important component of comprehensive risk management. At the national level, this can be achieved through the establishment of reserve funds, contingent credit arrangements, or purchase of offshore insurance or catastrophe bonds. These usually require supporting arrangements at international level through the private sector or multilateral banks.

At the village level, social and family capital can share burdens to some extent, though not if all those involved are simultaneously affected, as is often the case in large-scale floods and droughts. Commercial insurance and reinsurance is common for physical damage and business interruption, and in some cases for

crops. However, in low-income countries, only around 4 per cent of weather-related losses are currently covered by insurance. To overcome this apparent market failure, Governments can stimulate better information provision, strengthen the legal basis for insurance effectiveness, and consider mandatory participation in order to build economies of scale and to reduce transaction costs.

Insurance¹⁵ can also be used to systematically promote the reduction of disaster risks. For example, national policies can stipulate that any reconstruction of infrastructure, schools and housing should be undertaken in less exposed locations and be built to climate-resilient design standards. Low-cost adaptation techniques can be made a condition of insurance policies; and lower premiums can be charged for such climate-resilient buildings, infrastructure and crops.

Catastrophe pools can be used to protect government fiscal budgets by increasing post-disaster liquidity, or access to funds, to allow them to initiate and support relief and recovery activities. In some cases, they have also been used to protect the assets of middle-class homeowners. Catastrophe pools provide a mechanism for catalyzing the provision of insurance in markets where there have been impediments to private insurers offering disaster coverage.

Where insurance is unaffordable or unavailable to the poor, other mechanisms for financing risk reduction can be effective. These include microfinance, social funds and micro-insurance.¹⁶ Microfinance has proved an effective means for strengthening access to credit, savings, and other financial services in poor and vulnerable communities. It can increase financial resilience by providing access to credit and other financial services to enable investment in higher yield livelihood strategies, diversify livelihood strategies, and enable investment in risk reduction measures to limit exposure of livelihoods to disaster shocks. Social funds are community grant programs that provide block grants for projects to build up community assets such as community facilities, infrastructure or improved services. Such facilities and services can contribute to community risk reduction and strengthen access to credit for households and small businesses, which can help spur economic development and strengthen buffers against disaster shocks. Micro-insurance can promote increased levels of resilience by increasing access to finances after shocks thus strengthening coping capability and reducing the likelihood of disastrous impacts. Micro-insurance can also provide greater discretion to households and small businesses in pursuing coping and recovery strategies, and in some instances it can also serve as an incentive for disaster risk reduction.

3. Concluding Points

The submission made on 29 September 2008 by the ISDR titled “Proposals for the AWG-LCA Chair’s Assembly Document on Enhanced Action on Adaptation” (see Annex 1) provides a set of principles and actions that derive from the considerations described in the sections above, drawing on the experience in reducing and managing risk of the major organizations that are members of the IASC and the ISDR. In particular, the following concluding recommendations are reiterated.

1. **Recognise the necessity and relevance of disaster risk reduction strategies and risk management mechanisms** as a first line of defence against the impacts of climate change. Such strategies and mechanisms are particularly relevant in the immediate term, while capacity to address longer term adaptation strategies and programmes is being developed.
2. **Build upon existing strategies and mechanisms for disaster risk reduction and risk management.** Ensure that UNFCCC institutional enabling environments and regional supporting mechanisms for

¹⁵ See footnote 6.

¹⁶ Based on “Practice Review on Innovations in Finance for Disaster Risk Management” prepared by ProVention Consortium for the ISDR System Global Assessment Report 2009.

knowledge sharing, capacity building and technology support, build on existing mechanisms, tools and capacities for disaster risk reduction.

3. **Take account of, and manage, the humanitarian consequences of climate change, and protect human security, through the systematic reduction of disaster risks.** This must include not only prioritising social and economic development, but also strengthening emergency preparedness, response and recovery mechanisms at all levels.
4. **Ensure that substantial and additional human and financial resources are available for disaster risk reduction and risk management.** Ensure that the criteria for funding are fully consistent with the principles of the Hyogo Framework.

The IASC and ISDR System wish to make available their capacities and expertise to assist Parties in their implementation of adaptation strategies and plans. IASC members have extensive experience and skills in the management of humanitarian crisis and extreme events. ISDR System partners have extensive experience and skills in promoting and supporting disaster risk reduction and risk management. In both cases, these are resources that can be drawn upon in the design of global mechanisms for climate change adaptation. The member organisations of the IASC and of the ISDR System stand ready to support the UNFCCC negotiation process in each of these areas as may be necessary.

Annex 1:

Proposals for the AWG-LCA Chair's Assembly Document on Enhanced Action on Adaptation

Submission by
the International Strategy for Disaster Reduction (ISDR) System
29 September 2008

Background

This paper provides a set of suggested concrete actions in response to the Bali Action Plan's¹⁷ call for enhanced action on adaptation through consideration of **disaster risk reduction strategies, risk management and risk transfer mechanisms**. It has been developed in consultation with a number of UN and international organizations concerned with disaster risk reduction and humanitarian response. Risk-related strategies and mechanisms comprise an important component of the broader spectrum of actions required to adapt to climate change. Enhancing the implementation of these strategies will advance adaptation by substantially reducing vulnerabilities and future losses—in human lives and in the social, economic and environmental assets of communities—associated with increases in the frequency and intensity of meteorological, hydrological and climate-related hazards. This applies not only to rapid-onset events like storms and flash floods, but also to longer term changes and stresses such as heat waves, drought, food insecurity, coastal inundation, and health impacts.

This paper proposes that efforts to reduce vulnerability and build resilience to extreme events should be prioritized in the short term. Actions should build on and scale up existing widely available good practices. This prioritization will help avoid humanitarian and economic losses in the short term, as well as secure development gains and provide a more secure basis for other adaptation action over the long term.

The *Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters* provides the international foundation for reducing disaster risks, as agreed by Governments at the World Conference on Disaster Reduction in January 2005. Based on a review of successes and failures in reducing disaster risks worldwide, the Hyogo Framework sets out five priorities for action¹⁸. This paper proposes that Parties draw upon the Hyogo Framework in the design and implementation of adaptation actions.

Specific Proposals to Advance Adaptation

The following proposals follow the “possible areas of focus” identified by the AWGLCA Chair¹⁹ in the design of a framework to support, facilitate and implement adaptation.

They are based on decades of experience in reducing, managing and transferring disaster risk at all levels – from international through to community levels.

1. National Planning for Adaptation

The following actions will strengthen national plans for adaptation:

- **Implement or strengthen legislation** to reduce risks from natural hazards so that it addresses climate change impacts, identifies lines of responsibility and engagement at all levels, mandates inter-sectoral cooperation, ensures linkages into development planning and makes provisions for budgets at all levels of government.
- **Ensure wide engagement of stakeholders and decentralized planning** in national, provincial, city and local government, and with the private sector and civil society; promote community participation in disaster risk reduction; and recognise the differing vulnerabilities and capacities of men, women, children and people with disabilities.

¹⁷ FCCC/CP/2007/6/Add.1 Decision 1/CP.13, sub-paragraphs 1 (c) (ii) and (iii).

¹⁸ See the paragraph at the end of this annex

¹⁹ FCCC/AWGLCA/2008.11 page 7.

- **Conduct assessments of changing hazards, vulnerabilities, risks and capacities** to provide national and community baselines and priorities for intervention. These should be updated regularly.
- **Strengthen early warning systems**, by improving capacities for detecting and forecasting current and future hazards and associated vulnerabilities and risks, ensuring that warnings reach all populations, and enabling people's preparedness to respond to emergencies.
- **Implement disaster-reducing activities as part of sector-specific adaptation plans**, with allocated budgets, that particularly address:
 - o Protection of critical infrastructure, including schools, hospitals and other health facilities.
 - o Strengthening of land-use zoning, infrastructure development planning and building codes, including revisions to address the changing frequency and severity of extreme events.
 - o Consideration of risk and risk reduction strategies in national integrated plans for food security, environmental management, water resource management, coastal zone management and human security.
- **Update emergency preparedness programmes and contingency plans** for effective response to disasters, supported by legislation, institutions, resources and coordination mechanisms.

The preparation and implementation of national adaptation plans should include:

- Strong inter-ministerial and multi-stakeholder platforms or committees addressing disaster risk reduction that comprise all relevant sectors, such as planning and finance, education, health, agriculture, food security, environment, emergency response, and that include private sector, scientific and other civil society representation. Such committees or platforms should:
 - o Incorporate long-term climate change risk planning and support related climate change platforms.
 - o Respond to ministerial-level mandates and direction and engage the planning and finance ministries.
 - o Identify incentives to guide and influence decisions of the private sector and local development actors.
 - o Recognize communities' priorities and capacities.

2. Enhancing Knowledge Sharing

Knowledge of risk related areas of adaptation can be enhanced by the following actions:

- **Strengthen existing regional centres and mechanisms** that address disaster risk reduction and risk management for sectors such as water, agriculture, health, and humanitarian response.
 - o Link regional sectoral centres concerned with adaptation into a global adaptation network to share sectoral experience for adaptation within and across regions.
 - o Engage existing experienced centres and organizations as front line actors and institutional partners in adaptation planning and implementation.
 - o Prioritize the sharing of information and tools required to enable the prompt development of national and regional risk and capacity baselines, especially in high-risk areas.
 - o Support the replication of successful initiatives in community-based disaster risk reduction and community-based adaptation to strengthen people's livelihoods resilience.
- **Strengthen technical institution capacities** at international, regional and national levels, to facilitate the development of standard methodologies and tools founded on best science and to provide climate information and climate projections for adaptation and disaster risk reduction strategies and measures.

3. Streamlining and Scaling Up Financial and Technological Support

Improved financial and technological support for adaptation requires *inter alia* the clear identification of adaptation needs and outcomes, and the strengthening of existing capacities and mechanisms. This approach recognizes the close linkages between development, adaptation and risk reduction, countries' concerns about the complexity of accessing multiple sources of funding, and the need to draw on the best available knowledge and technology.

- **Strengthen existing funding mechanisms for risk reduction** such as the UN Trust Fund for Disaster Reduction and the Global Facility for Disaster Reduction and Recovery to support risk-related adaptation requirements.
- **Incorporate consideration of changes in risks in emergency-related funding mechanisms** such as the Central Emergency Response Fund, the Consolidated Appeals Process and the Emergency Flash Appeal mechanism, and allocate sufficient additional funds to cover climate change related disaster preparedness and response needs.
- **Use the Hyogo Framework’s priorities for action** where possible to structure risk-related funding priorities and criteria for allocations.
- **Develop risk financing instruments** at all levels to reduce financial impacts and shocks and to promote risk-reducing action, through microfinance and microinsurance, insurance markets²⁰, social funds and catastrophe pools.
- **Implement national systems for tracking investment and for tracking outcomes** in respect to risk reduction and adaptation.
- **Formalize collaboration with local governments and community organizations** with experience in risk reduction, to ensure that new adaptation funding mechanisms respond to local concerns and build on existing capacities.
- Implement adaptation action as far as possible within the framework of **national development planning processes** and supporting mechanisms such as the UNDAF and PRSP processes, in order to maximize their coherence and effectiveness.
- **Tailor existing risk reduction technologies for adaptation purposes** and widely disseminate these technologies.
- **Prioritize disaster risk reduction methodologies and tools** for scaling-up purposes, in particular for risk assessment and monitoring, early warning systems, flood management systems, drought monitoring and management, emergency management, and hazard resilient construction.

4. Institutional Frameworks for Adaptation

To create enabling environments at all levels and to stimulate adaptation action by all stakeholders, it is proposed that:

- Adaptation efforts should take advantage of the **multi-stakeholder ISDR system**, including its monitoring processes for risk and risk reduction, national-level platforms and networks, regional risk reduction strategies and platforms, and the Global Platform for Disaster Risk Reduction.
- Adaptation efforts in respect to humanitarian preparedness and response should take advantage of the **multi-partner Inter-Agency Standing Committee (IASC) system**, and its policy development and operational coordination capacities.
- The **efforts by the UN System to coordinate its action** to support Parties in respect to climate change and specifically provide support for adaptation practices should be continued.

Concluding Recommendations:

1. Ensure that UNFCCC institutional enabling environments and regional supporting mechanisms for knowledge sharing, capacity building and technology support, build on existing mechanisms, tools and capacities for disaster risk reduction.
2. Take account of, and manage, the humanitarian consequences of climate change and protect human security, through the systematic reduction of disaster risks, including emergency preparedness and reinforcement of response and recovery mechanisms.

²⁰ Please see paper submitted to UNFCCC by the Munich Climate Insurance Initiative on insurance instruments.

3. Acknowledge that social and economic development is essential for reducing the increasing risks related to climate change and hence is a foundation for successful adaptation.

4. Substantially scale up contributions for disaster risk reduction action as an essential component of adaptation. Ensure that the criteria for funding are fully consistent with the principles of the Hyogo Framework.

This paper was prepared by the UNISDR secretariat in discussion with a number of partners of the ISDR system and the Inter-Agency Standing Committee. Inputs were provided by FAO, IFRC, OCHA, ProVention Consortium, UNDP, UNEP, UNICEF, UNU, WHO, WMO, World Bank.

The Hyogo Framework for Action

The Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters was adopted at the World Conference on Disaster Reduction, held in Kobe, Hyogo, Japan, 18-22 January 2005. It provides a strategic and comprehensive global approach to reducing vulnerabilities to natural hazards, and represents a significant reorientation of attention toward the root causes of disaster risks, as an essential part of sustainable development, rather than on disaster response alone. It stresses the need for greater political commitment and public awareness, and defines an expected outcome, three strategic goals and five priority areas of action.

The Framework's implementation is identified as primarily the responsibility of States, but with the active participation of others such as local authorities, nongovernmental organizations, the scientific community and the private sector. Regional and international communities, including the international financial institutions, the UN system and the International Strategy for Disaster Reduction (ISDR), are called on to provide an enabling environment and to support capacity development. The **ISDR system** undertakes international efforts to reduce disaster risk and includes Governments, intergovernmental and non-governmental organizations, international financial institutions, scientific and technical bodies, as well as civil society.

The Hyogo Framework calls for the following priority actions:

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

Planning, budgeting and implementing risk reduction policies to avoid settlement in hazardous areas and to ensure that hospitals and schools are hazard resistant, for example.

2. Identify, assess and monitor disaster risks and enhance early warning

Knowing the risks and taking action involves identifying, assessing and monitoring disaster risk and enhancing early warning.

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

Raising awareness and educating all, through school curricula and sectoral training for instance, to reduce vulnerability.

4. Reduce the underlying risk factors

Reducing communities' vulnerability and risk in sectors through land-use zoning and building codes, by protecting ecosystems and natural defences, and developing insurance and microfinance initiatives.

5. Strengthen disaster preparedness for effective response at all levels

Being prepared and ready to act including by developing and testing contingency plans, establishing emergency funds and coordination systems.

Annex 2: The Inter-Agency Standing Committee

The Inter-Agency Standing Committee (IASC) is a unique inter-agency forum for coordination, policy development and decision-making involving the key UN and non-UN humanitarian partners. The IASC was established in June 1992 in response to United Nations General Assembly Resolution 46/182 on the strengthening of humanitarian assistance. General Assembly Resolution 48/57 affirmed its role as the primary mechanism for inter-agency coordination of humanitarian assistance.

» Primary Objectives

- To develop and agree on system-wide humanitarian policies
- To allocate responsibilities among agencies in humanitarian programmes
- To develop and agree on a common ethical framework for all humanitarian activities
- To advocate for common humanitarian principles to parties outside the IASC
- To identify areas where gaps in mandates or lack of operational capacity exist
- To resolve disputes or disagreement about and between humanitarian agencies on system-wide humanitarian issues.

» Membership

According to General Assembly Resolution 46/182, the IASC should be composed of "all operational organizations and with a standing invitation to the International Committee of the Red Cross, the International Federation of Red Cross and Red Crescent Societies, and the International Organization for Migration. Relevant non-governmental organizations can be invited to participate on an ad hoc basis." In practice, no distinction is made between "Members" and "Standing Invitees" and the number of participating agencies has expanded since inception of the IASC in 1992.

Members of the IASC include:

Food and Agriculture Organisation (FAO), UN Office for Coordination of Humanitarian Affairs (OCHA), UN Development Programme (UNDP); UN Population Fund (UNFPA); UN Human Settlements Programme (UNHABITAT); UN High Commissioner for Refugees (UNHCR); UN Children's Fund (UNICEF); World Food Programme (WFP); World Health Organization (WHO)

Standing Invitees of the IASC include:

International Committee of the Red Cross (ICRC); International Council of Voluntary Agencies (ICVA); International Federation of Red Cross and Red Crescent Societies (IFRC); American Council for Voluntary International Action (InterAction); International Organization for Migration (IOM); Office of the High Commissioner for Human Rights (OHCHR); Office of the Special Representative of the Secretary General on the Human Rights of Internally Displaced Persons (RSG on Human Rights of IDPs); Steering Committee for Humanitarian Response (SCHR); World Bank (World Bank)

Annex 3: The International Strategy for Disaster Reduction System

The International Strategy for Disaster Reduction (ISDR) is a system of partnerships. These partnerships are composed of a broad range of actors, all of which have essential roles to play in supporting nations and communities to reduce disaster risk. Partners include Governments, inter-governmental and non-governmental organizations, international financial institutions, scientific and technical bodies and specialized networks as well as civil society and the private sector. The Global Platform for Disaster Risk Reduction is the main forum for continued and concerted emphasis on disaster reduction, providing strategic guidance and coherence for implementing the Hyogo Framework, and for sharing experiences and expertise among all its stakeholders.

A secretariat – the UNISDR secretariat – supports and assists the ISDR System in implementing the Hyogo Framework for Action.

Purpose of the ISDR system

The overall objective of the International Strategy for Disaster Reduction (ISDR) system is to generate and support a global disaster risk reduction movement to reduce risk to disasters and to build "a culture of prevention" in society as part of sustainable development. In pursuit of this objective, the ISDR system supports nations and communities to implement the Hyogo Framework for Action through widened participation of Governments and organizations in the ISDR; raising the profile of disaster reduction in the priorities and programmes of organizations; and building a stronger, more systematic and coherent international effort to support national disaster reduction efforts.

ISDR System Partners

Governments

Primary responsibility for implementing disaster risk reduction policies rests with States. Therefore, the ISDR system recognizes the leadership of Governments at all levels for disaster risk reduction at national and local levels, including coordination, advocacy and implementation of the Hyogo Framework for Action within their national context and governed by their own existing structures.

Regional Intergovernmental Organizations

ACP-EU Natural Disaster Facility (NDF), African Union (AU), Andean Community General Secretariat (CAN), Association of Caribbean States (ACS), Association of South East Asian Nations (ASEAN), Caribbean Disaster Emergency Response Agency (CDERA), Centro de Coordinación para la Prevención de los Desastres Naturales en América Central (CEPRENAC), Comité Andino para la Prevención y Atención de Desastres (CAPRADE), Council of Europe (COE), Economic Community of West African States (ECOWAS), Emergencies and Elimination of Consequences of Natural Disasters (EMERCOM), European Commission (EC), IGAD Climate Prediction and Application Centre (ICPAC), International Centre for Integrated Mountain Development (ICIMOD), New Partnership for Africa's Development (NEPAD), Organization of American States (OAS), SOPAC - Pacific Islands Applied Geoscience Commission (SOPAC), South Asian Association for Regional Cooperation (SAARC), Southern African Development Community (SADC).

United Nations System

Capacity for Disaster Reduction Initiative (CADRI), Economic Commission for Africa (ECA), Economic Commission for Latin America and the Caribbean (ECLAC), Food and Agricultural Organisation (FAO), Global Fire Monitoring Centre (GFMC), Inter-Agency Standing Committee (IASC), Intergovernmental Oceanographic Commission (IOC), International Labour Organization (ILO), International Recovery Platform (IRP), International Telecommunication Union (ITU), Pan American Health Organization (PAHO), United Nations Centre for Regional Development (UNCRD), United Nations Children's Fund (UNICEF),

United Nations Convention to Combat Desertification (UNCCD), United Nations Department of Economic and Social Affairs (ECOSOC), United Nations Development Group (UNDG), United Nations Development Programme (UNDP), United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), United Nations Economic Commission For Europe (UNECE), United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Environment Programme (UNEP), United Nations Framework Convention on Climate Change (UNFCCC), United Nations High Commissioner for Refugees (UNHCR), United Nations Human Settlements Programme (UN-HABITAT), United Nations Institute for Training and Research (UNITAR), United Nations International Strategy for Disaster Reduction Secretariat (UNISDR), United Nations Office for Project Services (UNOPS), United Nations Office for the Coordination of Humanitarian Affairs (OCHA), United Nations Office for the High Commissioner for Human Rights (UN/OHCHR), United Nations Population Fund (UNFPA), United Nations System Influenza Coordination (UNSIC), United Nations University (UNU), United Nations Volunteers (UNV), University for Peace (UPEACE), World Food Programme (WFP), World Health Organization (WHO), World Meteorological Organization (WMO).

International Financial Institutions

African Development Bank (AfDB), Asian Development Bank (ADB), Inter-American Development Bank (IDB), International Finance Corporation (IFC) and the World Bank (WB).

Other International Organizations

Asociación Iberoamericana de Organismos Gubernamentales de Defensa y Protección Civil, Citynet (CITYNET), Commonwealth Secretariat (COMSEC), Group on Earth Observations (GEO)

International Civil Defense Organization (ICDO), International Committee of the Red Cross (ICRC), International Federation of Red Cross and Red Crescent Societies (IFRC), International Organization For Migration (IOM), International Organization for Standardization (ISO), Local Governments for Sustainability (ICLEI), Organisation for Economic Co-operation and Development (OECD), and United Cities and Local Governments (UCLG).

Non-Governmental Actors

ActionAid International (ActionAid), Actions by Churches Together International (ACT), Aga Khan Development Network (AKDN), All India Disaster Mitigation Institute (AIDMI), Asian Disaster Preparedness Center (ADPC), Asian Disaster Reduction and Response Network (ADRRN), Asian Disaster Reduction Centre (ADRC), Bangladesh Disaster Preparedness Center (BDPC), British Overseas NGOs for Development (BOND), Care International (CARE), Catholic Relief Services (CRS), Center for Disaster Preparedness (CDP), Centre for Research on the Epidemiology of Disasters (CRED), Christian Aid, Concern Worldwide (Concern), Consortium of Universities for Research in Earthquake Engineering (CUREE), Council on Social Work Education (CSWE), Development Workshop France (DWF), Disaster Management Institute of Southern Africa (DMISA), Duryog Nivaran, Earthquake and Megacities Initiative (EMI), EU-CORD (EU-CORD), Grassroots Organizations Operating Together in Sisterhood (GROOTS), Huairou Commission, Institute for Social and Environmental Transition (ISET), Institute of Development Studies (IDS), InterAction, International Association of Earthquake Engineering (IAEE), International Centre for Water Hazard and Risk Management (ICHARM), International Consortium of Landslides (ICL), International Council for Science (ICSU), International Council of Voluntary Agencies (ICVA), International Development Research Center (IDRC), International Institute for Applied Systems Analysis (IIASA), International Institute for Environment and Development (IIED), International Institute for Sustainable Development (IISD), International Institute of Rural Reconstruction (IIRR), International Medical Corps (IMC), International Rainwater Harvesting Alliance (IRHA), International Research Centre on 'El Niño' (CIIFEN), International Save the Children Alliance, Intervida World Alliance (INWA), Media21 Global Journalism Network (Media21), MercyCorps, National Society for Earthquake Technology (NSET), NGO Committee on Mental Health, Oxfam International, Pacific Disaster Center (PDC), Plan International, Practical Action, ProAct Network (ProAct), ProVention Consortium, Radical Interpretations of

Disasters and Radical Solutions (RADIX), Risk RED (Risk RED), Royal Institution of Chartered Surveyors (RICS), University Network for Disaster Risk Reduction in Africa (UNEDRA), Voluntary Organisations in Cooperation in Emergencies (VOICE), World Conservation Union (IUCN), World Economic Forum (WEF), World Institute for Disaster Risk Management (DRM), World Society for the Protection of Animals (WSPA), World Vision International, World Wide Fund For Nature (WWF).