

World Conference on Disaster Reduction  
18-22 January 2005, Kobe, Hyogo, Japan

国連防災世界会議

2005年1月18日～22日



United Nations  
国際連合



## World Conference on Disaster Reduction

18-22 January 2005, Kobe, Hyogo, Japan

As the United Nations Emergency Relief Coordinator, I dedicate much of my time addressing issues of humanitarian assistance, traveling to complex emergencies, witnessing scenes of conflict and war. Every day, I confront the tragic consequences of human violence and lack of tolerance. And yet, natural and related hazards affect as many or more people as conflicts do. However, the consequences of nature's violence can often be averted: first, because we understand these hazards, and second, because there are ways to prepare communities and individuals to deal with them.

The media play an important role, not only by reporting on disasters as they unfold, but also by explaining why they happen and how they can often be mitigated or prevented. By relaying messages about risk reduction and resilience building, the written press, radio and television play a vital role in public awareness. Your presence in Kobe is indispensable in conveying to the world the significance of the debates in the World Conference on Disaster Reduction.

It is my hope that the consultations and negotiations we are undertaking during these five days in Kobe will help all participants reaffirm that -- with today's knowledge, with political will, with common sense -- a good part of the tragic consequences caused by natural hazards and poor risk management can be averted. I should like to thank you in advance for helping us in that noble endeavour.

*Jan Egeland*  
*Under-Secretary General for Humanitarian Affairs*  
*United Nations*

Welcome to the World Conference on Disaster Reduction in Kobe, Hyogo. When the United Nations General Assembly decided to convene this conference in Kobe, accepting the invitation of the government of Japan, it was with several objectives in mind, including identifying good practice in disaster reduction, defining challenges and opportunities and examining emerging issues, and developing a new plan of action for disaster risk reduction for 2005-2015.

During these five days at the Portopia Hotel and at the Kobe International Conference Centre and Exhibition Hall, the international community will have a real opportunity to sensitise all layers of authority and all avenues of development planning, to move determinedly to build around the world a new culture of resilience, as promoted by the International Strategy on Disaster Reduction (ISDR). Much of the existing knowledge, expertise and competence to tackle complex issues of risk management will be present in the conference halls in Kobe, and we trust that you will take advantage of this unique forum. This kit has been prepared to help you in addressing the many issues that will be debated at the WCDR.

The conference secretariat will spare no effort to make this a valuable event. We are at your disposal for any assistance you may require and hope that your stay at the Portopia will be both fruitful and enjoyable.

*Salvano Briceno*  
*Director, ISDR secretariat*

*John Horekens*  
*WCDR Coordinator*

welcome



## An overview

### **Why a World Conference on Disaster reduction?**

In February 2004, the UN General Assembly adopted resolution 58/214, in which it decided to convene a second World Conference on Disaster Reduction.

The first World Conference on Disaster Reduction took place in Yokohama in May 1994 and set a plan of action called the Yokohama strategy. This strategy set a number of concrete guidelines for action on prevention, preparedness and mitigation of disaster risk for the past ten years.

The international community felt it important to take stock of progress made since the Yokohama Conference to define a new plan of action for the years 2005 to 2015, to facilitate the implementation of the Millennium Development Goals.

The Government of Japan offered to host the Conference, as it would coincide with the commemoration of the 10th anniversary of the Great Hanshin-Awaji earthquake that occurred on 17 January 1995, killing more than 6,400 people and injuring more than 40,000.

### **When and where will the World Conference be held?**

The World Conference on Disaster Reduction will be held on 18-22 January 2005, in Kobe, Hyogo, Japan in the Portopia hotel and the adjoining International Conference Center, Kobe and the Kobe International Exhibition Halls in Kobe, Hyogo prefecture.

### **Who is responsible for organizing the World Conference?**

The United Nations General Assembly requested the Secretariat of the International Strategy on Disaster Reduction to serve as the Secretariat of the Conference. A special unit for WCDR has been established to coordinate the preparations of the World Conference. A bureau consisting of representatives of five Member States and the host country has been fully functional and has been leading substantive discussions to prepare the Conference.

The Preparatory Committee held a first session in Geneva in May 2004 that addressed mostly procedural issues and a second session in October 2004 to discuss substantive issues on the format of the Conference, the thematic sessions and the outcome documents of the World Conference.

### **Who will be participating at the World Conference in Kobe?**

Government representatives at senior level will lead delegations from UN Member States. The United Nations will be represented at most senior level with a number of Heads of agencies and programmes. Between 2,000 to 3,000 participants are expected.

### **What is the format of the World Conference?**

The format of the World Conference on Disaster Reduction foresees three main segments: intergovernmental, thematic and public. The first will be the forum for delegations to comment on disaster risk reduction in their countries or areas of competence and for Member States to agree on

outcome documents. The second segment will be the place for delegations to review experiences and discuss best practice in a variety of areas linked to risk reduction. The third will offer an opportunity to interact with the public in such areas, through workshops, exhibitions, demonstrations, posters.

### **What is the Yokohama Strategy?**

The Yokohama Strategy and Plan of Action for a Safer World (Yokohama Strategy) ([http://www.unisdr.org/eng/about\\_isdr/bd-yokohama-strat-eng.htm](http://www.unisdr.org/eng/about_isdr/bd-yokohama-strat-eng.htm)) takes its name from the first World Conference on Disaster Reduction, which took place in May 1994 in Yokohama (Japan). The Yokohama Strategy is a document that set a plan of action for the period 1994-2004, providing guiding principles for disaster prevention, preparedness and mitigation.

### **What are the objectives of the World Conference?**

The Conference objectives are:

- To conclude and report on the review of the Yokohama Strategy and its plan of action, with a view to update the guiding framework on disaster reduction for the twenty-first century;
- To identify specific activities aimed at ensuring the implementation of relevant provisions of the Johannesburg Plan of Implementation of the World Summit on Sustainable Development on vulnerability, risk assessment and disaster management;
- To share practices and lessons learned to further disaster reduction within the context of attaining sustainable development, and to identify gaps and challenges;
- To increase awareness of the importance of disaster reduction policies, thereby facilitating and promoting the implementation of those policies.
- To increase the reliability and availability of appropriate disaster related information to the public and disaster management agencies in all regions, as set out in relevant provisions of the Johannesburg Plan of Implementation.

### **What are the main outcomes of the Conference?**

- Clear directions and priorities for action at international, regional, national and local levels to ensure implementation of the International Strategy for Disaster Reduction and to support the achievement of the objectives of the Johannesburg Plan of Implementation and the Millennium Development Goals.
- Adoption of a set of goals and policy measures for guiding and stimulating the implementation of disaster risk reduction both on what to achieve and "how to do" risk reduction.
- Increased awareness, recognition and political endorsement for implementing disaster risk reduction and mobilizing local, national and international resources.
- Launching of specific initiatives and partnership to support the implementation of the International Strategy for Disaster Reduction.

### **What documents will be issued at the end of the Conference?**

Three main documents will be issued at the end of the World Conference:

- A review of the Yokohama Strategy and Plan of Implementation
- A programme of action for 2005-2015
- A final declaration.



## Key Statistics

### Disaster Figures since 1994

The last ten years have witnessed an increased number of natural and technological disasters that have left **478,100 people killed**, more than **2.5 billion people affected** and about **US\$ 690 billion** in estimated economic losses. While average annual death figures have dropped by one third, the registered number of **people affected** has **increased by 60%**, when comparing the figures for the past two decades.

The distribution of the damage for this period shows that the most vulnerable people are still those living in **developing countries**. Impact also varies enormously according to the level of income of the countries. Over **95% of the people killed** lived in **middle** and **low-income**<sup>1</sup> countries.

The differential impact is also huge when looking at the level of **human development**<sup>2</sup> achieved by countries. The average number of **affected people** in low human development countries (LHD) is **3.5 times higher** than those ranked in the “high human development” league (HHD). The average annual number of people killed per million inhabitants in LDH countries is **2.3 times higher** than the respective figures for HHD.

When looking at world regions in absolute figures, **Asia** continues to be the most affected continent, representing more than **half of the casualties** and over **90% of the affected people**. The worst single year for Asia in terms of casualties was 1999, with 40,930 people killed. **Africa** suffered the highest number of casualties during 2002, with 14,759 victims. The deadliest year for the **Americas** was 1999 with 34,000 casualties.

**Africa, Asia** and the **Americas** together account for almost **70% of the total casualties** associated with natural and technological disasters during the period 1994-2003. When taking into account population size, Africa is the most vulnerable continent, followed by Oceania and the Americas.

Disasters triggered by **hydro-meteorological hazards** amounted for 97% of the total people affected and 60 % of the total economic damages attributed to all natural and technological disasters. Disasters of **geological origin** represented a quarter of the total casualties associated with natural disasters. Over **80% of the biological disasters** (mainly associated with epidemics) were concentrated in **Africa**. **Droughts** and **famine** accounted for 75% of people affected in LHD countries.

**Floods and earthquakes** were the deadliest natural hazards during the decade, accounting for almost 50% of the total casualties. The most costly disaster in this period was the earthquake that hit Kobe/Hyogo in 1995; with economic losses of over US\$ 95 billion. The single most costly disaster of the last ten years was inflicted by the **heat wave** and associated **forest fires** that hit **Europe** in 2003, with an estimated damage of US\$ 13 billion and more than 32,000 deaths.

Source : EM-DAT, CRED, University of Louvain, Belgium - [www.cred.be](http://www.cred.be)

<sup>1</sup> World Bank classification based on gross national income (GNI) per capita.

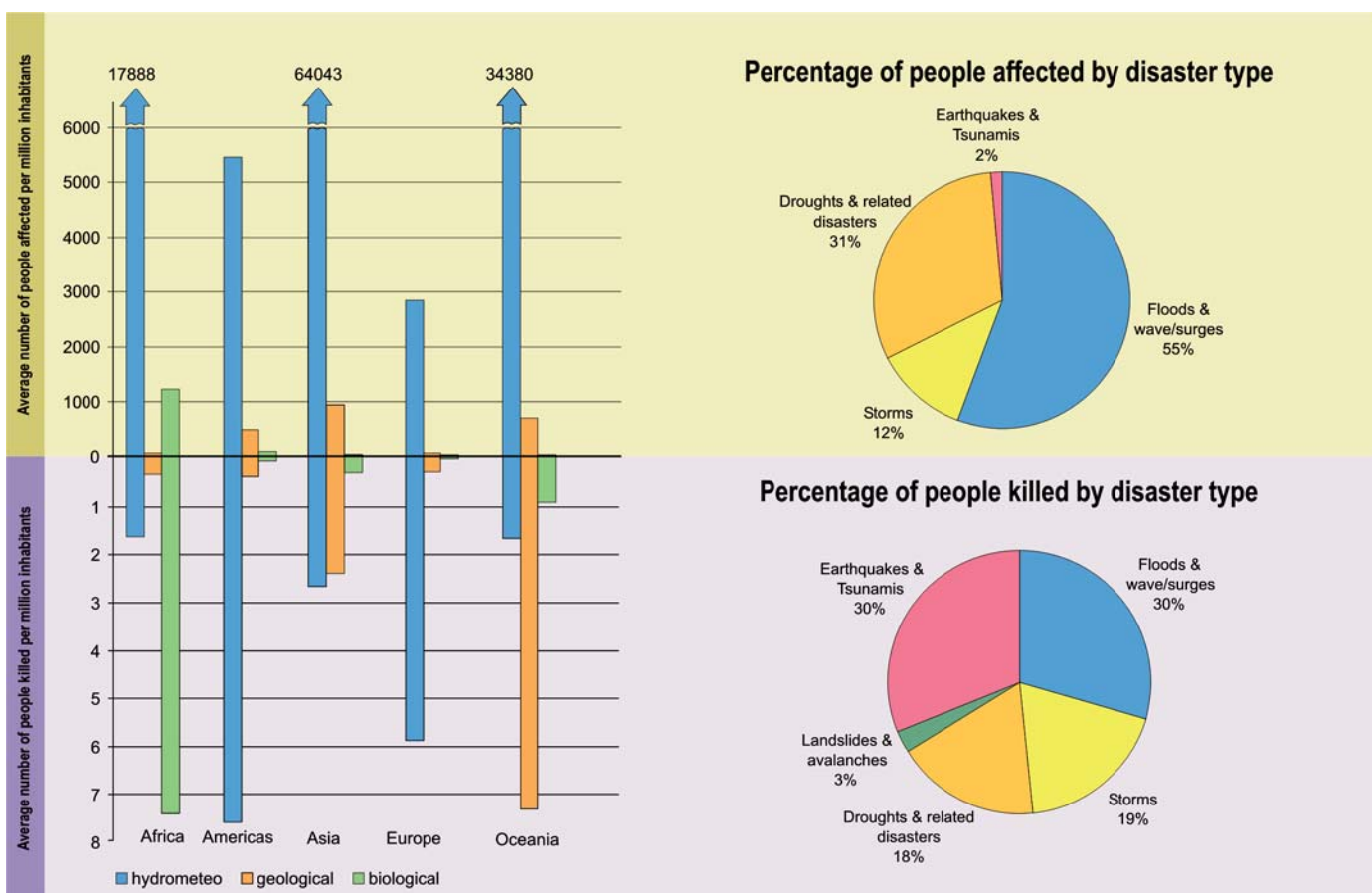
<sup>2</sup> Human development aggregates are based on UNDP's Human Development Index (HDI)

## People affected by natural disasters (Period 1994-2003)

Type of Disaster	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total
Drought	16,946,500	26,791,404	3,260,000	7,330,100	19,882,535	30,502,145	176,477,015	86,757,493	339,901,401	70,274,114	778,122,707
Earthquake	790,785	1,640,722	5,501,102	1,227,462	2,139,320	6,881,400	2,408,826	8,796,841	611,608	3,955,700	33,953,766
Epidemic	6,564,353	445,078	643,994	334,311	879,459	476,548	1,030,908	200,976	969,159	125,956	11,670,742
Extreme Temperature	1,108,184	535,278	200	614,580	36,386	725,246	27,686	213,161	103,986	1,839,908	5,204,615
Famine	3,900,000	4,308,000	3,575,590	1,686,000	5,612,950	9,144,594	1,000,000	1,000,000	3,983,000		34,210,134
Flood	127,687,833	198,116,395	178,451,143	44,956,366	290,072,569	149,969,693	62,505,835	34,494,674	277,408,430	166,827,751	1,530,490,689
Insect Infestation		200									200
Slides	298,406	1,122,349	8,936	33,951	209,131	15,291	208,176	67,351	271,454	458,629	2,693,674
Volcano	235,750	25,876	6,572	7,200	7,808	34,055	118,996	78,346	278,050	25,000	817,653
Wave / Surge			24	29,000		1,300	17,260		1,720		49,304
Wild Fires	3,067,413	11,839	5,811	53,159	166,904	18,830	39,035	5,739	26,124	8,833	3,403,687
Wind Storm	38,311,466	13,771,290	28,144,129	13,594,067	26,784,268	23,889,154	15,459,454	30,645,189	110,694,349	10,781,408	312,074,774
<b>Total Affected</b>	<b>198,910,690</b>	<b>246,768,431</b>	<b>219,597,501</b>	<b>69,866,196</b>	<b>345,791,330</b>	<b>221,658,256</b>	<b>259,293,191</b>	<b>162,259,770</b>	<b>734,249,281</b>	<b>254,297,299</b>	<b>2,712,691,945</b>
<b>Total casualties</b>	<b>14,098</b>	<b>54,583</b>	<b>55,226</b>	<b>55,330</b>	<b>90,116</b>	<b>101,671</b>	<b>44,320</b>	<b>63,885</b>	<b>51,177</b>	<b>78,442</b>	<b>609,638</b>
<b>Number of disasters</b>	<b>225</b>	<b>263</b>	<b>228</b>	<b>274</b>	<b>329</b>	<b>385</b>	<b>546</b>	<b>459</b>	<b>508</b>	<b>380</b>	<b>3,597</b>

Source: EM-DAT: The OFDA/CRED International Disaster Database, <http://www.em-dat.net/>  
Université Catholique de Louvain - Brussels - Belgium

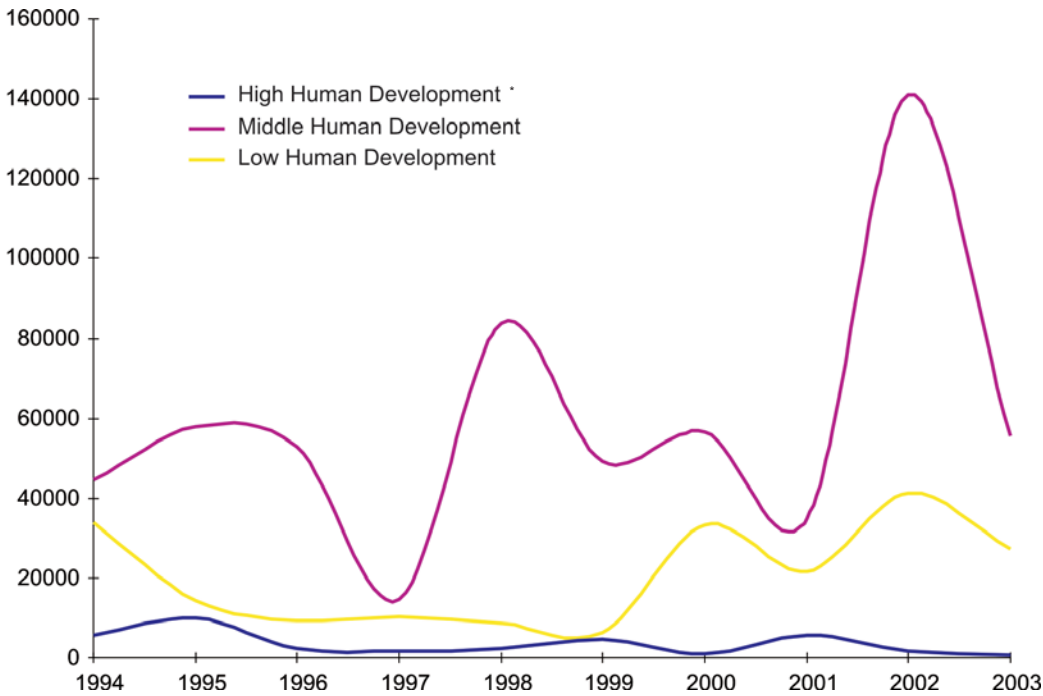
## People killed and affected by type of disaster (Period 1994-2003)



Source: EM-DAT: The OFDA/CRED International Disaster Database, <http://www.em-dat.net/>  
Université Catholique de Louvain - Brussels - Belgium

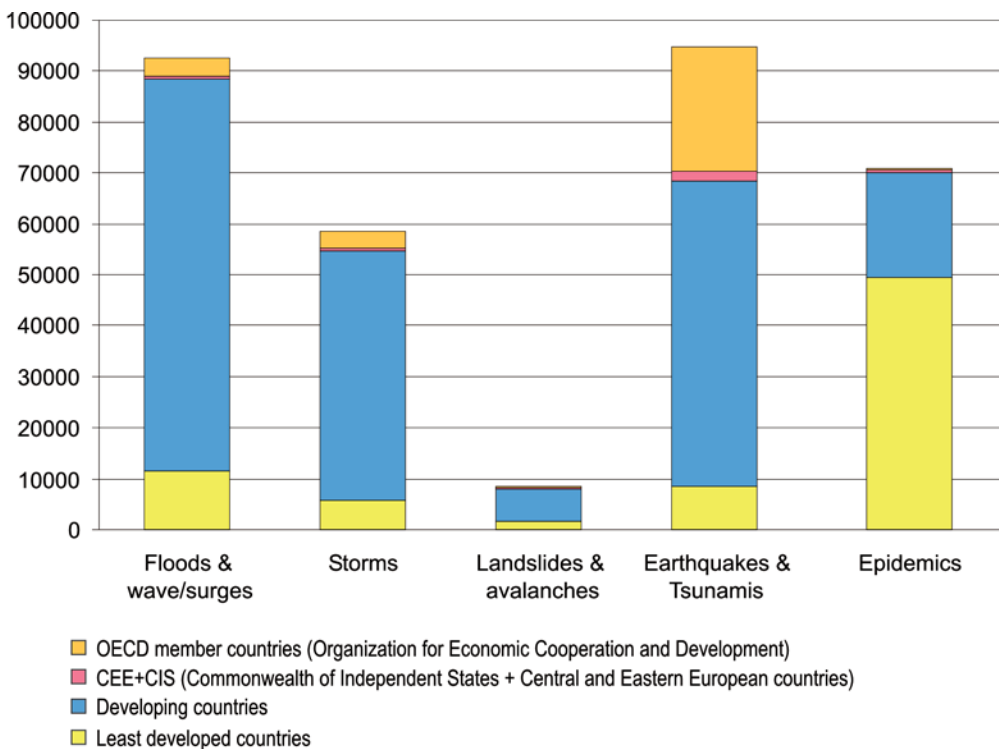


### People affected by natural and technological disasters (Period 1994-2003)



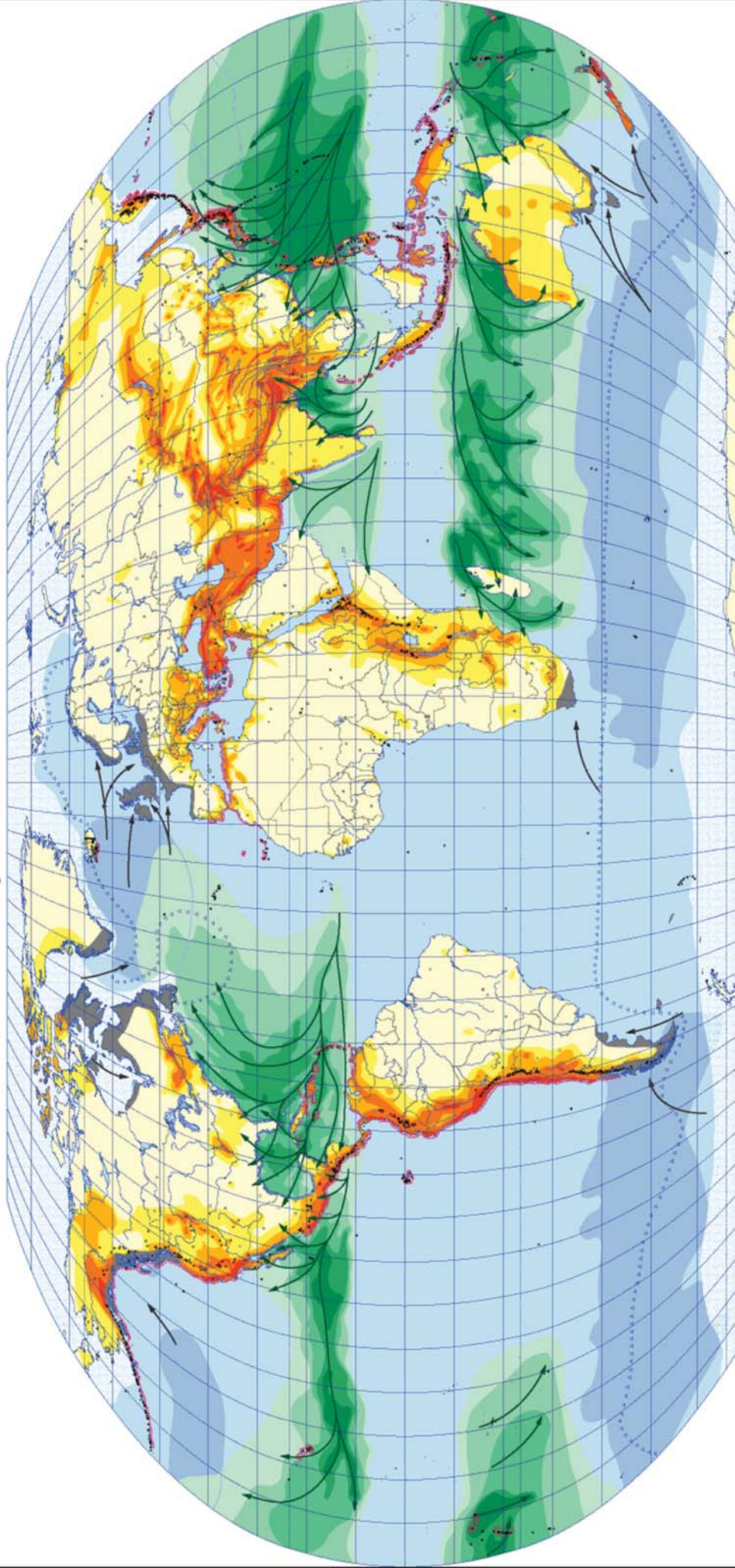
\* Country aggregation by level of human development (based on UNDP's Human Development Index, HDI).  
Source: EM-DAT: The OFDA/CRED International Disaster Database, <http://www.em-dat.net/>  
Université Catholique de Louvain - Brussels - Belgium

### People affected by natural and technological disasters (Period 1994-2003)



Note: Countries in major world aggregates following country classifications in UNDP's Human Development Report 2003 (this analysis does not include droughts and heat waves)

# World Map of Natural Hazards



**Earthquakes**

- Zone 0: MM V and below
- Zone 1: MM VI
- Zone 2: MM VII
- Zone 3: MM VIII
- Zone 4: MM IX and above

Probable maximum intensity (MM: modified Mercalli scale) with an exceedance probability of 10% in 50 years (equivalent to "return period" of 475 years) for medium subsoil conditions

Large city with "Mexico City effect"

**Volcanoes**

- Last eruption before 1800 AD
- Last eruption after 1800 AD
- Particularly hazardous volcanoes

**Tsunamis and Storm Surges**

- Tsunami hazard (seismic sea-wave)
- Storm surge hazard
- Tsunami and storm surge hazard

**Tropical Storms and Cyclones**

- Zone 1: SS 1 (118–153 km/h)
- Zone 2: SS 2 (154–177 km/h)
- Zone 3: SS 3 (178–209 km/h)
- Zone 4: SS 4 (210–249 km/h)
- Zone 5: SS 5 (>= 250 km/h)

Probable maximum intensity (SS: Saffir-Simpson hurricane scale) with an exceedance probability of 10% in 10 years (equivalent to a "return period" of 100 years)

Principal tracks of tropical storms

**Other Natural Hazards**

- Limit of iceberg drift
- Pack ice (winter maximum)
- High seas with wave heights > 5 metres, exceedance probability 10% per year ("10-year wave")

**Extratropical Storms/Winter Storms**

- High extratropical storm hazard, mainly in winter
- Principal tracks of extratropical storms

**Political Borders/Inland Waters**

- State border
- State border, controversial (political borders not binding)
- River
- Lake
- Previous extent of lake

**Cities**

- > 1 million inhabitants
- 100,000 to 1 million inhabitants
- < 100,000 inhabitants
- Capital city
- Munich Re office





## Poverty, Sustainable Development and Disaster Reduction

Prepared by UNDP

[www.undp.org/bcpr/disred/index.htm](http://www.undp.org/bcpr/disred/index.htm)

### What is the problem?

Progress in poverty reduction has experienced stark differences among and within regions over the last decade. Overall, South Asia remains one of the world's poorest regions with the largest number of poor people, despite advances in the 1990s. Also Africa faces enormous poverty with widespread stagnation across most countries and an increasing number of people suffering in the 1990s. Poverty has even tripled in the Europe/CIS region combined with dramatic reductions of life expectancy. A more positive trend could be observed in Latin America and the Caribbean, where human development in many places reaches almost the level of rich countries, despite of slight increases in poverty. Countries in East Asia and the Pacific are performing well across the board, with some exceptions, and poverty fell by almost 15%. The 1990s have experienced unprecedented progress in some places, while others have stagnated and reversed to an extent not seen in previous decades.

The UNDP Report *Reducing Disaster Risk: A Challenge for Development* has demonstrated that disaster risk is higher in low human development countries. This was the result of a review into the relationship of development and disaster risk: while only 11 percent of the people exposed to natural hazards live in low human development countries, they account for more than 53 percent of total recorded deaths. Compared with the situation in high human development countries, these have 15 percent of people exposed, but only 1.8 percent of total recorded deaths.

### The progress since 1994

Since 1994 there has been growing acceptance of the linkages between poverty and natural disasters, and poverty reduction strategies refer increasingly to disaster vulnerability as a contributing factor aggravating poverty. Poverty assessments, however, still do not yet sufficiently include disaster vulnerability indicators into ongoing surveys, which would deepen our understanding of the relationships and linkages.

### The main challenges

There is a close correlation between disasters, poverty and environment. As the poor exploit environmental resources for survival, disaster risk increases. The connection between destruction of the environment - forest, soil, wetlands, and water sources - and disaster risk can be quite significant. Landslide, drought and flood patterns are altered in many parts of the world due to climatic changes and environmental management actions. At the same time, major disasters, such as the cyclones and floods in Mozambique, Madagascar and Haiti, can have a long-lasting negative impact on the environment, increasing the risk of future disasters. Demographic pressures result in an intensified utilization of marginal land in many poor countries. Such land, by its very nature is likely to be more vulnerable to adverse weather conditions.

In poor countries rates of population growth are highest. Combined with high disaster risk, as for example in Bangladesh, Cambodia, Ethiopia, and Haiti, the numbers of affected are likely to further increase over the next decades, unless serious measures are taken to protect them. In view of

population pressure being on the rise, it can be expected that also disaster vulnerability will increase as these people will have an increasingly limited access and entitlement to resources.

Repeated exposure to disaster can lead to chronic poverty. Households and communities can often get through the first year of a drought reasonably well but if repeated, losses quickly mount and cannot be absorbed easily. Recurring economic stresses caused by natural calamities induce fluctuations in income, compelling households to sell productive assets and to sacrifice potential investment. In turn, economic pressures increase vulnerability, often forcing people to live in dangerous locations, overriding the more remote threat of disasters. Sub-Saharan Africa has continued to suffer natural disasters and political upheavals. These events remind us what is hidden in poverty statistics: that the conditions of poverty are closely linked to disaster vulnerability. Many households in Africa are regularly exposed to risks from poor weather conditions, diverting resources to emergency response and reconstruction, taking a serious toll on what the national economy can allocate on other development programmes.

### **What needs to be done in the next 10 years?**

Poor households and poor nations throughout much of the world face two disadvantages: the inability to generate an income and the vulnerability to physical, social and economic downturns. Drought, flood, conflict, inflation, disease and recession hit these groups and countries hardest. Furthermore, repeated exposure to these downturns reinforces the conditions of poverty. The circular nature of poverty and vulnerability does not preclude action. There is considerable scope for reducing disaster risk, particularly in poor countries through the application of appropriate disaster mitigation, preparedness and rehabilitation programmes.

Such measures should not be viewed as discrete activities undertaken by specialist government agencies but as measures that must be incorporated in development projects, economic activities and government policy more generally. Broader government development policy and sector plans can readily recognize the potential threat disasters pose to sustainable equitable development and focus attempts to reduce vulnerability. The degree of public sector and donor commitments to such issues should not be measured in financial terms alone. More specific actions could focus on the following areas:

- Integrate disaster reduction onto relevant development programmes in high risk areas.
- Incorporate disaster reduction measures into all post-disaster recovery programmes.
- Utilize existing instruments for assessment and planning at country level for greater attention to disaster risks.
- Increase the commitment to support national capacity building with particular emphasis on human resources development and governance.



## Early Warning and Disaster Reduction

*Prepared by UN/ISDR Platform for the Promotion of early Warning, Bonn, Germany  
[www.unisdr-earlywarning.org](http://www.unisdr-earlywarning.org)*

### **What is the problem?**

Lack of early warnings and lack of preparedness can turn an ordinary hazardous event into a major disaster. Clear warnings, received in time, coupled with the knowledge of how to react, can mean the difference between life and death, or between economic survival and ruin, for individuals and communities.

Too many countries and communities do not have effective early warning and preparedness systems, according to the Second International Conference on Early Warning, held in Bonn, Germany, 16-18 October 2003. This is illustrated by the disproportionate loss of life when hurricanes strike poor countries, for example in Haiti in 2004, and by widespread food insecurity in many parts of Africa when droughts occur.

Technical early warning services often exist, but the warnings do not reach those at risk, or they lack meaning for the locality and people. Those threatened often do not know what to do, or are poorly equipped to take necessary action.

### **Progress since 1994**

Scientific knowledge and early warning technologies have steadily grown, and most countries have some sort of early warning capacity. Forecasts are readily available for most weather related hazards, such as storms, floods, drought, heat waves, etc. These depend on global observation systems coordinated by the World Meteorological Organization (WMO) to monitor the atmosphere and oceans, and complex computer models to quickly produce forecasts and warnings several days ahead. Monitoring and prediction systems also exist for drought, flood, tsunami, volcanic eruptions, and wildfires but progress on earthquakes is slow.

Communication systems and preparedness and response capacities have also developed. In the 2004 hurricane season, in Cuba and the United States, nearly 3 million people evacuated their homes in a matter of a day or so, a staggering number and a staggering achievement of civil society action. This was only possible because of the combination of early warning and communications technology and practiced preparedness. The savings that were achieved through common-sense actions like boarding up houses and evacuating to safe locations undoubtedly amount to many billions of dollars.

Thousands of people today owe their lives and their livelihoods to early warning systems.

Good early warning and concerted humanitarian action has also achieved stunning success in reducing the death toll from famines, even in hunger remains. Weather data and crop data are now systematically collected and analysed across the huge drought-prone regions of the world, and are used to forecast trouble spots, locust outbreak risks and food aid planning. In Africa over the period 1983-1992, 580,000 people died in disasters, but by the next decade, 1993-2002, the number had dropped to 43,000.

### **The main challenges**

The first major challenge is to widen understanding that early warning systems are more than just a prediction service. A complete early warning system that truly serves the needs of those at risk comprises a chain of four elements:

- Prior knowledge of the risks faced by communities
- Technical monitoring and warning service for these risks
- Dissemination of understandable warnings to those at risk
- Knowledge and preparedness to act

The second major challenge is to address the serious lack of effective early warning systems in developing countries. Usually there is a base of capacity, such as in weather forecasting, public communications, and community organisations, but often parts of the warning chain are weak or missing. Political and institutional support is very important, in order to ensure good inter-linkages among the many actors in the early warning chain and to achieve the necessary priority for action. Local motivation and commitment is essential. Durable support for equipment and training is necessary. But early warning systems do not need to be expensive.

A third challenge is to develop the practical guidelines and tools that governments and communities need to develop their early warning systems. There is a great deal of experience and expertise throughout the world that needs to be better codified and disseminated.

### **What needs to be done in next 10 years?**

The primary need is to take a *systematic approach* to building early warning and preparedness for those at risk. The most important five tasks as follows.

1. Demonstrate and promote the benefits of broad-based early warning systems, including as a tool to protect development gains.
2. Integrate early warning systems into development planning and into the programmes to achieve the Millennium Development goals.
3. Document existing early warning systems in different countries and settings, as a basis for identifying gaps and choosing investment priorities.
4. Develop information, guidelines and tools for early warning systems that can be used with confidence by governments and communities
5. Support developing countries to develop locally tailored, sustainable, people centred early warning systems.



## Education and Disaster Reduction

*Prepared by Badaoui Rouhban, Chief Section for Disaster Reduction, UNESCO, Paris  
www.unesco.org*

### **What is the problem?**

Education is a key to development and forms the base of any culture or civilization. It is also a vital tool for reducing the risks of disasters when they strike and achieving human security. Achieving disaster-resilience is essentially a process of learning. Therefore education is the most effective means of developing attitudes that can enhance the understanding of risks and the knowledge of means to cope with these risks. Disasters can strike at any time, anywhere. One indicator reflecting the level of education a country or community possesses is the degree to which their societies are affected by these disasters. The Yangtze River Floods in China affected some 9 million children and damaged around 50,000 schools; Hurricane Mitch in the Caribbean destroyed and affected around 900 schools; the Bam earthquake in Iran wiped out over 130 schools and claimed the lives of 20,000 school children.

### **Progress achieved since 1994**

During the last decade the international community has paid increased attention to the need for disaster preventive actions with a focus on mitigation and preparedness strategies. Some countries have already integrated these concepts into national policies and programmes. For example, in Japan, several schools and universities have included disaster education in their curricula; in Italy, schools that are located in seismic areas should be retrofitted to withstand earthquakes; in France, educational buildings that can be exposed to either natural or industrial hazards are required to have a preparedness plan in place; and finally, in Nepal and in the Caribbean, several programmes are being developed to help local communities to integrate indigenous knowledge on disaster reduction into community preparedness plans to make their societies more resilient to disasters. But at the same time, there are also several places that still need to improve their resilience to disasters. This can essentially be achieved through education for disaster reduction.

Education for disaster reduction and human security should not be perceived of as a one-time affair, restricted to a specific period of a person's life. It should be seen as a continuing process whereby individuals are educated on how to cope with hazards not just once but repeatedly throughout their lives. Furthermore, education and raising awareness on disaster risks must be conducted in support of the changing needs of a society and to focus on empowering individuals throughout their lives.

### **The main challenges**

The decade of 2005-2015 will be the United Nations Decade of Education for Sustainable Development with UNESCO as lead agency. The integration and understanding that disaster education is part of sustainable development education should be one of the central pillars of the decade and fostered in several ways. A great effort should be made to convert and build safe schools so that they can withstand hazards they are exposed to and can act as shelter in the aftermath of a disaster. A number of stakeholders concerned including UNESCO, the Global Alliance for Disaster Reduction, Kyoto University, the Global Open Learning Forum on Risk

Education and the International Institute for Earthquake Engineering and Seismology are currently exploring institutional mechanisms and global alliances with a view to launching an **international initiative on *Education and Scientific and Cultural Support Systems for Disaster Reduction***. This initiative will be undertaken under the aegis of the International Strategy for Disaster Reduction, and in partnership with the United Nations Secretariat of the Strategy.



## Disaster Reduction and Financing

*Prepared by David Peppiatt, ProVention Consortium*

### **What is the problem?**

The cost of natural disasters is rising exponentially. Between the 1950s and 1990s, the reported global costs of natural disasters increased 15-fold. According to the global re-insurance company the Munich Re Group, natural catastrophes during 1990s caused economic losses at an average of US\$65 billion per year. This trend is bound to continue although the severity of this year's hurricane season in the Caribbean will make 2004 the most expensive year in insured losses in recent years. It is evident that these disaster losses often have adverse consequences for economic growth, development and poverty reduction.

Part of the problem is the lack of adequate disaster risk management, particularly in developing countries where the world's poorest tend to suffer disproportionately from the impacts of natural disasters. Disaster losses could be significantly reduced if greater attention and resources were dedicated to mitigating and managing risk. In particular, risk financing strategies, such as economic planning for disasters and insurance, are needed to help countries manage disaster risk and minimise losses.

### **Recent progress**

Recent initiatives have shown the potential benefits of a broad range of financial strategies, from traditional disaster insurance schemes to newer risk transfer innovations such as catastrophe bonds, weather derivatives and micro-insurance mutuals, which can be adapted to different hazard settings at various scales. Experiences with the Turkish Catastrophe Insurance Pool, for example, reveal certain benefits of a pool solution resulting in mandatory coverage, lower deductibles and incentives for mitigation. Such schemes, which have also resulted in new partnerships between the public and private sector, have led to a growing interest in the potential use of insurance and other risk financing mechanisms in disaster reduction.

### **Main challenges**

Risk financing strategies inevitably require the investment and support of financial institutions and, in the case of insurance, a partnership with the global reinsurance industry. Despite genuine interest from the financial sector, there are a number of critical challenges that must be acknowledged. Firstly, many emerging and developing countries remain largely uninsured and exposed to high levels of disaster risk. There is, therefore, a lack of insurance coverage, typically weak regulatory insurance frameworks and limited private sector incentives given the high levels of risk and doubtful long-term profitability, stability, sustainability of markets. Secondly, a major challenge is how to develop insurance and risk transfer schemes that are accessible to the poor and 'uninsurable'.

### **What next?**

It is clear that, a diverse range of risk management strategies are urgently needed to reduce the rising cost of disasters. Risk transfer mechanisms, such as insurance, can play a key role in helping

to minimise disaster losses and reduce the financial and economic impacts of disasters. Greater attention needs to be given to the potential opportunities and limitations of risk financing strategies to identify successful models, elements of effective partnerships and, in particular, how risk transfer mechanisms like insurance can be applied to hazard-prone developing countries exposed to high frequency catastrophes.

A focus on risk financing strategies should not, however, detract attention away from the very real need for more dedicated international financial resources for disaster reduction and the essential process of integrating natural hazard risk management into longer-term national investment policies and development strategies.





## Climate Change and Disaster Risk Reduction

*Prepared by UN/ISDR*

### **What is the problem?**

Two-thirds of all disasters are climate or weather-related. Floods and hurricanes inflict high tolls on lives lost and damaged infrastructure, while droughts bring prolonged devastation and famine to millions. The impact is especially severe on those who suffer already as a result of poverty and disease. It is clear that many countries and communities are not resilient to the natural variability of the climate.

Against this background, reports of continuing rises in the Earth's temperature and predictions of increased weather extremes in the coming decades as a result of growing levels of atmospheric greenhouse gas concentrations are particularly worrying.

As one example of what might happen, scientists are claiming that the unprecedented ferocity and frequency of the hurricanes that have battered the Caribbean in 2004 can be blamed on one factor: the unexpected warmth of the water in the Atlantic in the past year. On the other side of the world, Japan suffered a record ten landed typhoons this year, breaking the earlier record of six, and killing 220 people.

Irrespective of exact causes of this year's events, the uncertainty of what the climate may bring in coming years, coupled with increasing population and assets in high-risk climate areas, presents a new challenge to policymakers and citizens alike.

### **The progress since 1994**

Following the establishment in 1992 of the United Nations Framework Convention on Climate Change (UNFCCC), the main focus to date has been on mitigation - reducing greenhouse gas emissions that are the source of the climate change problem, particularly through the Kyoto Protocol that was opened for signature in 1998 and that will probably come into force soon following ratification by Russia.

However, even ambitious long-term limits for atmospheric concentrations will not restrain mean global surface temperature at present-day levels. There will be adverse effects. For this reason, the 2001 Marrakech Accords took significant steps forward to address the likely results, rather than just the causes, of climate change, with a set of initiatives to reduce vulnerability and promote adaptation, in particular for the poorest countries. The Accords encouraged governments to integrate climate change adaptation into other policy domains, and emphasized that the starting point for addressing vulnerability to climate change was the enhancement of existing means of coping with climate variability and extremes.

Efforts are being made by UNDP, WMO, Red Cross/Red Crescent Societies, the ISDR Secretariat and other partners to develop a dialogue and share information across the boundaries currently separating the climate, disaster and development communities.

In 2004, there is worldwide recognition that climate change is a threat, especially through the likely increase in weather hazards, and must be addressed. But there is still not wide awareness of the fact that disaster risk reduction and risk management are essential weapons in the adaptation armoury.

### **The main challenges**

With such a new issue as climate change, the first challenge is to develop new ways of thinking, for example to stress the idea of “resilience” to natural hazards.

According to Michael Zammit Cutajar, the former Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC), in order to guarantee peoples’ livelihoods it makes sense to invest in increasing the resilience of existing systems to known phenomena whose severity and frequency are expected to increase. One of the sectors that require strengthening now is disaster risk management. In addition, phenomena that are more specific to global warming—such as rising sea levels, shifts in agricultural production zones, or species loss—will need adaptive responses in the future.

A second challenge is to ensure that disaster reduction improvements go ahead without being held up by debates on difficult issues of responsibility for actual and possible changes in weather hazards.

Maybe the toughest challenge of all is to get policy makers and specialists in the different areas to work together on those issues. This is not a problem that can be put into one box and left to work itself out. It is a development problem, it is a disaster management problem and it is a climate change problem. The commitment and tools of these and more fields are needed.

### **What needs to be done in the next 10 years?**

The central idea - that disaster risk reduction is a potent means of adaptation and vulnerability reduction, needs to be incorporated into development policy and practice, as well as in climate change policy.

Explicit mechanisms need to be developed to systematically link the relatively small disaster risk reduction community, and its humanitarian sponsors, with the climate change community and its policy activities, and with the development community.

A great deal of expertise and successful experience on dealing with extreme climate events exist, such as may be found in the compendium of practical experience in disaster risk reduction, titled *Living with Risk*, that has recently been published by the United Nations International Strategy for Disaster Reduction Secretariat (ISDR). However, the disaster community needs to collaborate more actively and engage with the climate change community, and much more needs to be done to develop guidelines and practices that easily plug into development project planning and implementation.

The numerous adaptation initiatives that are being considered or implemented around the world should forge links and coordination with disaster risk reduction initiatives, particularly with established public policy processes. Both, after all, are concerned with reducing climate risk. Adaptation initiatives also should be seen in the light of the many community-based efforts to reduce disaster risk. These offer quick routes to effective adaptation and resilience building, as well as being a vehicle to introduce climate adaptation thinking to receptive audiences.



## Disaster Reduction and Gender

*Prepared by UN/ISDR on the basis of information extracted from the conclusions of a workshop on Gender Equality and Disaster Risk Reduction, Honolulu, August 2004*

### **The problem**

Men and women are affected differently by natural hazards. Disasters tend to multiply existing vulnerabilities and exacerbate gender differences. The combination of poor health, and low educational and economic status affecting more women than men worldwide tends to increase women's vulnerability to natural hazards. This vulnerability to natural hazards increases even more when women are the heads of households.

In order to protect vital economic resources, women may decide against evacuating or taking shelter, as was observed during the 1991 cyclone in Bangladesh. Very often a woman's earnings—from agriculture, crop processing, weaving, poultry or cattle rearing—are a significant portion of the family income. Over and above the restrictions inherent in the practice of *purdah*, women are often afraid to move to cyclone shelters because they fear their homes will be robbed. For a very poor woman, the threat of having her home looted is as ominous as the cyclone itself.

Women living in rural areas, where the traditional concept on gender roles and responsibilities are very strong, participate less in policymaking and programme implementation relevant to disaster reduction.

Many women fell victim to the 1991 cyclone in Bangladesh, largely because early warning signals did not reach them in their homes or homesteads. In this highly sex-segregated society, warning information was transmitted from man to man in public spaces where they congregated; the assumption was that these early warnings would be communicated to the rest of the family—which by and large did not occur. Women who had comparatively less knowledge about cyclones and were dependent on male decision making, perished, many with their children, waiting for their husbands to return home and take them to safety.

Women are too often wrongly considered to be helpless victims rather than active contributors in the process of disaster risk management.

### **What happened since 1994?**

In 1994, gender issues were still not well identified, but since then, there have been gradual changes. Case studies in Nicaragua after hurricane Mitch, in Madagascar after cyclone Daisy and flooding in Kenya have contributed to these changes showing that women's participation makes a huge difference when natural disasters happen. Their active participation increases the effectiveness of prevention measures, disaster relief, recovery and transformation and reduces the impact of disasters on household and communities.

**What should be done in the next ten years?**

In order to make progress in disaster reduction it is important to apply a gender-based approach to reduce the risks of disasters. This calls for an analysis of the roles of both women and men in the process. Women need to become more actively involved, not only as agents of community care, but at all levels of management and decision-making. Women's full participation in disaster risk reduction not only benefits them but also their families and communities.

When women participate in decision-making their needs and concerns are likely to be reflected in the decisions and therefore benefit activities related to reducing risk and vulnerability. Women need access to policymaking, information and knowledge on disaster reduction to participate actively in the implementation of policies and decisions regarding disaster reduction at all levels. Governments should develop or amend national policies and strategies to introduce gender balanced approaches addressing both women and men's concerns and experiences.

There is a great need to work with both women and men in this approach. NGOs and Community-based organisations (CBO'S) have a special role in many places to make sure that women and men are engaged, and to promote women to be more active in managing risk instead of limiting their actions in socio-cultural or specific economic activities.



## Disaster Reduction and Complex Political Emergencies

*Prepared by Margie Buchanan Smith, Lecturer of Oxford Brookes University, Oxford, England & Ian Christoplos, Research Associate of the Overseas Development Institute (ODI), London, England*

### **What is the problem?**

A sharp conceptual and operational distinction exists between natural disasters and complex political emergencies (CPEs). This is evident in academic debates and even institutionally in terms of the demarcation of responsibility within some international organizations. Yet this is often an inappropriate distinction. Natural disasters are rarely truly 'natural'. Although the predominant model for responding to natural disasters has been a technical one, political and social factors are crucial determinants of who will be affected and how? The coincidence of a natural disaster with a conflict-related emergency throws this into even sharper focus, and is now a common phenomenon. In the last five years there are no less than 140 examples of natural disasters coinciding with CPEs across Africa, Asia, Latin America, Oceania and Europe.

Understanding the interface between a natural disaster and the conflict context is usually critical to predict the nature and intensity of a humanitarian crisis. But this is a particularly challenging analysis, often easier to do retrospectively rather than prospectively. The long-term impoverishing effect of conflict weakens the asset base of many households, thus reducing their resilience to natural disaster - a fact that has long been acknowledged, but is still often underestimated.

In Afghanistan, for example, by the time of the 1999-2001 drought, most of the population faced severely depleted assets as a result of years of conflict; coping strategies were fundamentally weakened. In Bahr el Ghazal in southern Sudan, the combination of three years of drought and many years of conflict-related impoverishment had left the population in a state of high vulnerability by the end of 1997. Rebel attacks in early 1998 caused massive displacement from towns into rural areas already facing acute food insecurity, thus triggering a famine marked by some of the highest malnutrition and mortality rates ever recorded.

So - how can the international humanitarian community improve their understanding of, and their ability to respond to natural disasters within an ongoing complex political emergency?

### **Progress since 1994**

Although the natural disaster and CPE discourses have been operating more or less in parallel in the last ten years, there has been significant progress in each. For example, vulnerability analyses have become more sophisticated and are more widely used by international agencies to understand the potential impact of natural disasters. Meanwhile, political economy analysis has become more sophisticated and has improved the contextual understanding of many complex political emergencies. The challenge now is to bring both together.

### **The main challenges**

Breaking down these watertight divisions between natural disasters and CPEs, to improve the international response to the large number of compound emergencies in the world, is the first step. This, in turn, throws up some interesting challenges. For example, how can a humanitarian emergency

caused by a combination of conflict and natural disaster best be assessed and portrayed? When a natural disaster - such as drought - threatens, a particular challenge for agencies on the ground is to communicate 'why this year is different', in other words why an acute crisis is impending, amidst an extended period of chronic distress. Data - if they exist - that show the impact of the long-term erosion of livelihoods and coping strategies are not always compelling nor convey a sufficient sense of urgency. So - how can a more holistic and flexible approach to early warning and analysis that is sensitive to both natural disasters and to conflict, be promoted and be convincing to decision-makers? In some of the most intense CPEs, if there is a weak, or non-functioning state, whose responsibility is preparedness for recurring natural disasters?

### **What needs to be done in the next 10 years?**

First, the conceptual and institutional barriers that exist, between CPEs and natural disasters, must be broken down. A more comprehensive analysis of risk is one way of achieving this. Vulnerability analyses associated with natural disasters could find synergy with the growing focus on political economy analyses in CPEs: both focus on risk. Above all, there is a need for aid agencies to strengthen their contextual - and especially political - analysis in these compound emergencies, regardless of whether they are labeled 'natural disaster' or CPE.

Strengthening analytical tools - especially vulnerability assessments - to capture the interconnectedness and complexity of natural disaster plus conflict is possibly one of the most productive areas for research, especially if it elicits a more timely and appropriate response. Key questions to be addressed would include:

1. How does conflict/ political instability affect vulnerability to natural disasters, at household, district and national levels? How can this best be measured?
2. How can risk assessment be broadened from a technical approach to incorporate social and political factors?
3. How can practitioners communicate their findings to decision-makers convincingly, conveying the complexity of a compound crisis in an accessible and convincing way?
4. What kind of funding support is required for this type of analysis/ assessment, which takes a long-term perspective?

This research agenda would lend itself to real-time research in countries where recent conflict and political instability are having an impact on the population's vulnerability to recurrent natural disasters, for example in Indonesia, Nepal or Zimbabwe. In each of these countries the impact and interconnectedness of conflict and natural disaster are not sufficiently understood, nor are adequate preparedness measures in place.



## Cuba: A success story for hurricane management

*This case study was prepared by UN/ISDR on the basis of information extracted from a report published by Oxfam America in 2004  
[www.oxfamamerica.org](http://www.oxfamamerica.org) and [www.unisdr.org](http://www.unisdr.org)*

The wave of hurricanes that hit the Caribbean in 2004 had devastating affects in terms of economic, environmental and human loss. Hurricanes Frances, Charley, Jeanne and Ivan killed nearly 3,000 people in the region; 2,757 people in Haiti, 39 people in Grenada, 11 in the Dominican Republic, 16 in Jamaica and only 4 in Cuba. The fact that so few people died in Cuba compared to in neighbouring countries is nothing new; this is a pattern, which has been repeated in previous hurricane seasons. In fact, people tend to die less as a result of hurricanes in Cuba than in any other part of the Caribbean. Why? There are several reasons that could explain why Cuba could serve as a model for hurricane management in developing countries.

One reason explaining Cuba's success in dealing with these phenomenon is the strong commitment of its public authorities to build disaster risk reduction. The Cuban Government has empowered a number of national institutions and mechanisms for disaster risk reduction. The country's disaster mitigation, preparedness, response, and recovery measures and structures are enshrined in law, and those laws are enforced. Moreover, the High Command of the Cuban National Civil has been charged with taking decisions in implementing all risk reduction measures and procedures in case of natural hazards.

Before the natural disaster strikes, the Civil Defence uses information obtained from the Cuban Institute of Meteorology to initiate an early warning system; 48 hours before the hurricane nears, all organisations, entities and institutions are mobilized to implement an emergency plan. The heads of provincial and municipal assemblies act as local heads of the Civil Defence system and are responsible for taking the appropriate emergency measures which consist of organising large-scale evacuations and preparing shelters; as a result of coordinated efforts, some 100,000 people can be evacuated in less than three hours.

Another reason that explains Cuba's preparedness in responding to hurricanes is its strong culture of safety. This vital aspect is unmatched throughout the Caribbean. From an early age, all Cubans are mindful of what actions and measures to take if hurricanes move toward their island.

Education is an essential pillar of this culture of prevention. Disaster preparedness, prevention and response are woven into the Cuban school curriculum from primary school to the university level. Routine trainings on risk reduction are also conducted in institutions and workplaces to target Cuba's adult population. A yearly two-day training exercise is also organized in order to remind inhabitants of their critical role in disaster risk reduction for hurricanes and to apply any lessons learned from previous years.

Cuba is an example that the vulnerability of people and human loss can be reduced effectively through low cost measures and strong determination. Potentially vulnerable populations instead play an indispensable role in saving others' lives and their own. In Cuba, emergency plans to respond to hurricanes exist at all levels of society.

good practice

The Impact of the 2004 Hurricane Season in the Caribbean  
Data available at the end of September 2004.

Date	Country	Name of event	Affected	deads	Damage in '000\$
August 13, 2004	Cayman Islands	Charley			
August 13, 2004	Jamaica	Charley	120	1	
August 14, 2004	Cuba	Charley	202,500	4	1,000,000
August 31, 2004	Puerto Rico	Frances			
September 1, 2004	Turks and Caicos Is	Frances	200		
September 2, 2004	Dominican Rep	Frances	250		
September 2 - 3, 2004	Bahamas	Frances	8,000	2	
September 8, 2004	Barbados	Ivan	1,000	1	
September 8, 2004	Grenada	Ivan	60,000	39	
September 8, 2004	St Lucia	Ivan			
September 8, 2004	St Vincent and The Grenadines	Ivan	1,000	4	
September 9, 2004	Dominican Rep	Ivan		4	
September 9, 2004	Trinidad and Tobago	Ivan	560	1	
September 11, 2004	Jamaica	Ivan	350,000	15	111,000
September 12, 2004	Cayman Islands	Ivan		1	
September 13, 2004	Haiti	Ivan	4,000	3	
September 13 - 14, 2004	Cuba	Ivan	3,245		
September 14, 2004	Puerto Rico	Jeanne	3,500	2	
September 15, 2004	Virgin Is (US)	Jeanne			
September 16 - 17, 2004	Dominican Rep	Jeanne	45,111	7	
September 17 - 18, 2004	Haiti	Jeanne	298,926	2,754	21,000
September 25, 2004	Bahamas	Jeanne	1,000		
		<b>Total</b>	<b>979,412</b>	<b>2,838</b>	<b>1,132,000</b>

Source: EM-DAT: The OFDA/CRED International Disaster Database, <http://www.em-dat.net/>  
Université Catholique de Louvain - Brussels - Belgium.





## Europe: Increasing flood warning times with the European Flood Alert System

*This case study was prepared by JRC: Ad de Roo (ad.de-roo@jrc.it)  
www.natural-hazards.jrc.it/floods*

The European Commission's DG Joint Research Centre (JRC), is developing and testing the LISFLOOD model and a Pan-European Flood Alert System (EFAS). The aim of these activities is to increase warning times beyond the typical 2-3 days, which is current practice in Europe. Increased warning times are significant to save human lives and reduce material damage. This is significant because every year, on average, 100 European citizens die in floods. Over the period 1998 - 2002 alone, 100 major floods comprised 43% of all disaster events, causing 700 fatalities, the displacement of about half a million people, and at least 25 billion Euro in insured economic losses. In the near future, flood magnitude and flood frequency may even increase in certain regions in Europe, as predicted in the Third Assessment Report of the Intergovernmental Panel on Climate Change, IPCC (2001).

The increasing number of natural disasters from floods, landslides, earthquakes and forest fires has made it clear to the European Commission and Member States that effective advance action is needed to protect the environment and citizen. On 12 July, 2004, the European Commission proposed, for the first time, concerted EU action on flood risk management and flood prevention to improve protection against flooding. An increased warning time could help to avoid casualties and reduce flood damages.

Enhanced cooperation and planning between the European Commission (DG JRC, DG Environment, DG Enterprise), the European Centre for Medium Range Weather Forecasts (ECMWF), EU Member States and Accession countries is now allowing the development of measures that can be applied trans-nationally for better preparedness for oncoming flood events. Advances in weather forecasting, flood prediction models, automated data gathering from measurement stations, rainfall radars, and information technologies can now be combined to increase the flood warning time and information level for large trans-national river catchments. Following the dramatic Elbe and Danube floods of August 2002, the European Commission and European Parliament reinforced their support for the development of a European Flood Alert System, already in development at the JRC since 2000.

The JRC is currently testing and refining the pan-European Flood Alert System, focussing on the larger European river basins and taking into consideration parts of all European countries. The aim is to provide national water authorities with an early warning capability for a developing flood disaster, knowledge about its location and its development over time. Based on the computer model LISFLOOD, combining both medium-range weather forecasts from ECMWF and hydrological data from water authorities, this system will simulate the flow in many large European rivers with a lead-time of three to ten days. This will allow more time for appropriate action to prevent human casualties and reduce material losses. The system has a particular focus on large, trans-boundary river basins. During 2003 and 2004, 12 flood alert messages were given out to

good practice

European Water Authorities, of which about half gave a correct indication of an upcoming flood in the foreseen areas. A few alerts were withdrawn because of new and changing weather forecasts, and a few alerts proved to be incorrect.

Besides flood forecasting, the LISFLOOD modelling system permits easy yet realistic visualisation of the consequences of changes in land use, river geometry and climate. It makes it possible to optimise spatial planning, and to reduce flood volumes and peaks by for example the creation of retention basins and controlled water release from reservoirs. More than 80 scenarios regarding the impact of flood protection measures have already been evaluated for the Oder River, within the framework of the Flood Action Plan of the International Commission for the Protection of the Oder River (IKSO). Similar work is ongoing for the Elbe river with the Elbe Commission (IKSE).



## Mozambique: The evolution of a formal disaster risk management system

*This case study was prepared by UNDP on the basis of information extracted from a global analysis conducted in 2004 on UNDP's support to strengthening institutional and legislative systems for disaster management and risk reduction*

*[www.undp.org/bcpr/disred/index.htm](http://www.undp.org/bcpr/disred/index.htm)*

**Context:** Throughout the 1980s, Mozambique's economy and infrastructure was decimated by civil war. The signing of the peace accord in 1992 and the resulting political stability facilitated a process of recovery and reconstruction. Mozambique is prone to a range of disasters, which have afflicted the country over the last decade, such as cyclones, drought, floods, epidemics, pest infestations and landslides. The country has lost over one million lives due to war and natural disasters, which have affected over six million people over the last two decades. The devastating floods of 2000 caused loss of about 800 lives and damage estimated at over \$450 million. Poverty is considered the key source of vulnerability and exposure to disaster risk.

**Good practice:** Mozambique has had a comparatively long experience with managing disasters. The **evolution of disaster management structures** in Mozambique has been praised as a good practice in governance for disaster risk reduction. As early as 1981 a Department for the prevention and combating of national calamities was established with the objective of promoting early warning and mitigation activities. A variety of mitigation measures were instituted, culminating with the approval of the National Policy on Disaster Management to re-orient disaster management towards risk reduction activities in the 1990s. With support of UNDP, efforts to restructure disaster management institutions were continued and the National Institute for Disaster Management (INGC) was created with the role to coordinate all phases of disaster management. An inter-ministerial council for coordinating disaster management brings together about 15 ministers as a policy and decision-making body. A multi-sector technical committee for Disaster Management chaired by the National Director ensures a strong coordination and collaboration in multi-sector planning of mitigation and response activities. The draft disaster management legislation however is not yet enacted, constraining the coordination function of the INGC to some extent.

Also Mozambique's experience with **annual contingency planning** has become a model in the SADC region hosting numerous missions from other countries on the continent to learn from its experience. The National Contingency Plan is a yearly, multi-sector and multi-level plan carried out in a participatory and consultative manner. The process begins at the sub-regional level with establishing a consensus on the climate outlook for the coming seasons. Early warning information is then gathered from communities, districts and provinces with technical support from UN agencies and NGOs and finally processed at the national level by the INGC. The analysis feeds into the National Contingency Planning which is carried out every year beginning of October simultaneously by different sectors and affected districts and provinces.

good practice

**Lessons Learned:** The Mozambique example suggests that the creation of comprehensive disaster risk management structures requires time and experience and may sometimes follow an almost ‘evolutionary path’ from a focus on response to a more pro-active risk reduction oriented approach. The example also illustrates the need for basic stability in order to enable governments to move out of the ‘emergency mode’.

Even though there is high commitment within the government towards the process of democratization and decentralization of planning and decision making to local authorities, progress with decentralization of disaster management functions has been slow. Provinces lack resources and technical capacity; communication between the central government and provinces needs strengthening; and structures at district and community levels remain relatively under developed. The situation at the central level also requires further investments in human resource capacities and financial resources to enable implementation of plans and policies already in place.



## Risk Reduction in Practice: A Philippines case study

*This case study was prepared by the International Federation of Red Cross and Red Crescent Societies  
www.ifrc.org*

In the past 20 years, disasters have killed over 31,000 and affected more than 60 million people in the Philippines. While volcanic eruptions and earthquakes occasionally strike, windstorms are the deadliest hazard. During the 1980s and 1990s, nine massive typhoons lashed the archipelago, killing 13,000 people, affecting 51 million and costing US\$ 2.8 billion in damage alone. Public and non-governmental agencies, as well as the Philippines National Red Cross (PNRC), have traditionally provided relief to disaster-affected people. But since 1995, the PNRC has broadened its approach towards more proactive risk reduction. With support from the Danish Red Cross (DRC), PNRC initiated community based disaster preparedness in five mountain, coastal and urban provinces.

### **The intervention**

Much can be done – with relatively simple means – at the community level to reduce the impacts of natural disasters. The PNRC encourages people to collaborate in protecting their lives and the resources on which they depend. The approach is called integrated community disaster planning programme (ICDPP) and employs six steps:

#### **1. Partnership with municipal and provincial government units:**

This helps to root the preparedness concept in local planning, to gain technical and financial support for mitigation measures, and to ensure the programme's long-term sustainability.

#### **2. Community disaster action team formation and training:**

The core of the programme is the group of community volunteers (including fishermen, women, youth and businessmen) who are trained in vulnerability and capacity assessments, disaster management and information dissemination. They work with the community to prepare a disaster action plan.

#### **3. Risk and resources mapping:**

This identifies the most important local hazards, who and what may be at risk, and which mitigation measures are possible. The maps are often employed as land use planning tools by local government units.

#### **4. Community mitigation measures:**

Based on the disaster action plan, the community will initiate mitigation measures, which may be physical structures (e.g. seawalls, evacuation centres), health related measures (e.g. clean water supply) or planning tools (e.g. land use plans, evacuation plans). These measures are undertaken by community volunteers with support from the Red Cross and local government.

#### **5. Training and education:**

This is integral to all steps of the programme – both in training the disaster action teams and in disseminating information to the whole community.

good practice

## **6. Sustainability:**

Long-term impact can only be ensured by embedding the concept of community based disaster preparedness within Local Government Units (LGUs). This means incorporating the recommendations of community disaster action plans into LGUs land use planning and annual budgeting. Sustainability also implies regular update training of the disaster action teams.

### **Positive impacts**

Community disaster action teams—a new approach—have proved to be an important core element and volunteer labor has been invaluable in helping to build mitigation structures. Additionally, collaboration with local government units (LGUs) has been a prerequisite for the programme's success and long-term viability. Many LGUs have incorporated community disaster action plans into their own development plans—resulting in projects such as planting trees to prevent landslides, cleaning canals to prevent flooding, constructing flood control dykes. LGUs have paid up to 75 per cent of the costs of these mitigation measures as well as providing specialists equipment and technical design input.

Red Cross hazard mapping has helped to capture local knowledge of natural hazards and transfer this information to municipal planners for incorporation into land use planning and the programme has given PNRC the evidence needed to lobby the national government to incorporate preparedness activities within their disaster response budget line. Such preparedness and mitigation strategies have gained a higher profile within the PNRC's disaster management services, strengthening the organisation's capacity to reduce disaster risk.

### **Conclusion and recommendations**

An integrated, community-based approach to disaster preparedness and mitigation has proved very popular and effective in reducing the vulnerability of thousands of Filipinos to both natural hazards and health risks. The success of the Red Cross programme depends on collaboration with local government. This in turn helps the PNRC to advocate for stronger preparedness and mitigation measures to be incorporated in local public land use planning.

Community-based disaster preparedness is only a supplement to – not a substitute for – regional and national disaster management. ICDPP is best suited for reducing the impact of small-scale local hazards, although elements of the approach can be adapted to alleviate the effects of larger disasters as well.