

Introduction

In recent years, there has been a major shift in peoples' attitudes and behaviours towards coping with natural disasters. In the past more emphasis was placed on humanitarian response and relief activities, with little attention being paid to disaster reduction strategies that have the potential to save thousands of lives by even the simplest of measures. Today, there is increasing recognition that while humanitarian efforts are important and need continued attention, risk and vulnerability are crucial elements in reducing the negative impacts of hazards and thus essential to the achievement of sustainable development.

The idea for conducting a global review of disaster reduction initiatives was born in the new millennium, following the United Nations International Decade for Natural Disaster Reduction (1990-1999). The Decade showed that despite the decline in loss of lives, the number of disasters and related economic losses is in fact increasing. In many cases such losses were due to a lack of coherent disaster reduction strategies by international and regional organizations, governments and decision-makers and the development of a culture of prevention among the public at large.

The Inter-Agency Secretariat of the International Strategy for Disaster Reduction launched the preliminary version of *Living with Risk - a global review of disaster reduction initiatives* in 2002, as a contribution to the World Summit on Sustainable Development (WSSD) held in Johannesburg, South Africa of the same year. It was circulated among many people engaged in the humanitarian, environment and development sectors and involved in disaster risk reduction. The present version takes account of their many useful comments and critiques, reflecting a common concern in building disaster resilient communities and reducing human, social, economic and environmental losses due to natural hazards.

Living with Risk - a global review of disaster reduction initiatives is intended for people interested and practitioners in disaster risk management and sustainable development. It seeks to provide guidance, policy orientation and inspiration as well as a body of reference to further the study of the subject. Rather than focusing on specific experiences of disaster preparedness, response or recovery, it aims at providing a comprehensive compilation of initiatives and reference information on disaster risk reduction.

Reviewing past and present achievements in disaster reduction and outlining the broad range of activities and the many actors involved, *Living with Risk - a global review of disaster reduction initiatives* contributes to the process of establishing a common understanding of the subject. It complements the UNDP publication *Reducing Disaster Risk: A Challenge for Development* (2004), identifying trends and highlights future challenges and priorities in ensuring safer and sustainable communities.

The findings will form the backbone to the ten-year review of the implementation of the Yokohama Strategy and Plan of Action (1994). It will also contribute to set the future international agenda for disaster risk reduction to be discussed at the second World Conference on Disaster Reduction to be held at Kobe-Hyogo, Japan in January 2005.

The review is divided into chapters that closely follow the areas of focus as set out in the framework for disaster risk reduction described in detail in chapter six. Each chapter is divided into sections that address issues related to the overall chapter theme, concluding with a list of future challenges.

Commencing with an overview of current understanding and related contexts of disaster reduction, chapter one examines the evolution of the subject from its academic and scientific beginnings to its political implications in the realm of sustainable development of today. The second chapter explores the concepts of risk and vulnerability in terms of trends in hazards and the impacts of disasters, with a particular focus on risk assessment.



The third chapter outlines crucial elements of policy and political commitment for disaster reduction at the regional, national, municipal and local levels, using examples to demonstrate the importance of good governance and community participation in institutional and policy frameworks. It presents a comprehensive framework to guide and monitor disaster risk reduction as a tool for disaster risk management practitioners that can be adapted and applied in their daily work, jointly developed by the ISDR Secretariat and UNDP. Chapter four discusses the importance of knowledge exchange and information management through the sharing of experiences, networking, education, research and public awareness. Specific disaster reduction applications are considered in chapter five, including environmental management, land use planning, structural measures and the protection of critical facilities, the use of financial instruments and early warning systems.

In conclusion, chapter six summarises the key priorities in disaster reduction, paying particular attention to the need for better understanding of the subject, in addition to monitoring progress and setting specific targets for the future. It presents a comprehensive framework to guide and monitor disaster risk reduction as a tool for disaster risk management practitioners that can be adapted and applied in their daily work.

A list of acronyms and subject index appear at the end of this volume. A series of annexes that complement the information appearing in the main text, including a full glossary of terms, directory of organizations, overview of international agendas related to disaster reduction, bibliography and extracts of the Johannesburg Plan of Implementation resulting from the WSSD can be found in the accompanying volume.

Living with Risk - a global review of disaster reduction initiatives is a dynamic project that will require sustained efforts to maintain a comprehensive and systematic review of ongoing activities in disaster risk reduction. The application of a framework (as described in chapter six) to measure disaster risk reduction efforts over time is a good starting point which can contribute to the achievement of the objectives of the International Strategy for Disaster Reduction.

Preface: A journey to a safer world

Living with risk - disaster reduction strategy

A disaster reduction strategy is a global challenge today and for the future. It involves every human community and almost every human endeavour. It also involves almost every physical phenomenon on the planet, from the high stratosphere to the abyssal depths.

The challenge of a disaster reduction strategy, the theme of this review, is to find a way to live with these phenomena, rather than die from them. Earthly powers are a fact of life and one side of the coin of a good life. A natural disaster is only a disaster because people are in the wrong place at the wrong time, had no choice but to be in the way of a disaster or were caught unawares when it struck.

The 1990-1999 UN International Decade for Natural Disaster Reduction (IDNDR) was dedicated to promoting solutions to reduce risk from natural hazards. The decade ended with more deaths from more disasters, involving greater economic losses and more human dislocation and suffering than when it began. But could dedicating one decade to the topic be expected to solve the consequences of centuries of mismanagement and of passive fatalism before the vagaries of nature?

What IDNDR put in motion was an irreversible and positive political and social process. This review and the International Strategy for Disaster Reduction (ISDR) will build on this positive force. ISDR will foster greater awareness, public commitment, knowledge and partnerships to implement risk reduction measures of all kinds, at all levels.

A more vulnerable world

Global trends shows increasing losses from disasters. The reason is both simple and complex; it has to do with how people and societies are becoming more vulnerable. Although the frequency of dramatic natural events may be constant, human activities contribute to their increased intensity. Impact depends on development practices, environmental protection, regulated growth of cities, distribution of people and wealth and government structures. Human activity also has an impact on the planet's climate, which may result in increased sea levels and potential disasters.

The number of people at risk has been growing by 70 to 80 million per year. More than 90 per cent of population growth is in the developing world, among people with the smallest share of resources and the biggest burden of exposure to disasters.

In theory, natural hazards such as earthquakes, floods, drought, storms, tropical cyclones and hurricanes, wildfire, tsunami, volcanic eruptions and landslides can threaten everyone. In practice, proportionally, they tend to hurt the poor most of all. This is because the poor outnumber the rich and live in greater density in more poorly built housing on land most at risk.

But there were sharp reminders of human vulnerability in recent years, in the developed world as well as the developing nations. Europe suffered the worst floods for centuries, while Australia was hit by serious drought. Tropical cyclones hit Mauritius and Réunion, Republic of Korea, Japan and Mexico, and tornadoes left a trail of devastation in the United States. The insurance giant Munich Re counted 700 natural catastrophes in 2002, and estimated the economic losses at US\$ 55 billion. In 2003, the World Meteorological Organization (WMO) pointed to record extremes of weather around the world. In May 2003, the United States recorded the highest number of tornados in any one month: 562, which killed 41



people. And June 2003 was the hottest month on record in Switzerland for 250 years. In India, 1,400 people died in a pre-monsoon season heatwave with temperatures reaching 49 degrees Celsius.

The price of life is constant vigilance. Natural hazards are constant threats. But every year the potential loss to life and livelihood soars as people converge in cities, where now half of the people of the planet live. With the growth of cities and populations come changes in the landscape and the disruption of natural ecosystems. Hillsides are cleared of trees for building materials and firewood but not replanted. Wetlands are drained to make space for new housing or workplaces. Rivers are engineered to follow unnatural routes. But with no trees, there is more erosion, and more silt to clog the rivers. All of these things make landslides, floods or drought more likely - and when they occur, more devastating.

People who have to struggle every day just to survive do not have the time or the strength to worry about more distant environmental and natural hazards. So a disaster reduction strategy is inseparable from social and economic development and from thoughtful environmental management. These are at the heart of sustainable development. A disaster reduction strategy must therefore be built on sustainable development policies which take into account potential risks and plans to reduce them, involving everyone and providing not only help but hope.

Imagine all the people...

It is possible to imagine a community or a nation that lived with a regard for nature, despite its hazards, with a coherent disaster risk reduction strategy in place.

Housing would be built out of appropriate materials, adapted to local conditions and according to building codes. Houses, hospitals, schools, markets, factories, government offices, power supplies and other critical services would be built on sites least exposed to risk. Communities would maintain forested or wetland areas as a form of natural flood control, as sources of local renewable revenue and as security against other threats such as erosion and landslide.

Civilians and government officials would be aware that a hazard that threatened one family or settlement would also be a threat to all. They would maintain a network of early warning systems and watchfulness, linked to the experts who monitored weather signals or seismic instruments.

Elected or traditional leaders would have regular dialogue not just with local officials and citizens but also with government agencies and scientists. Village councils would have ensured structures that serve as safe shelters in a cyclone and safe ground for livestock in the event of flood. Schools would teach children what to do when the river rises or when the earth begins to shake. Farmers would have granaries or fodder stores safe from storm and above any likely flood level. Health facilities would be safe and health centres would work with communities to reduce risk from disaster. Householders would have small but secure savings to help them through disruption caused by storm or inundation.

These communities would accept that information and communication were the most important elements of all. People would routinely listen to daily weather reports and follow local political and economic debate through radio, newspapers or television. Such communities would be more likely to shore up their own flood defences, maintain their drainage and secure their housing against destruction, through communal action. Legislators would understand that public safety was part of their obligation and administrators, of course, would be expected to police such legislation.

A journey to a safer world

This review, aimed mainly at practitioners as a guide and reference, is about how we can continue to develop a culture of prevention. It is a voyage of both discovery and rediscovery, about how human decisions increase or reduce vulnerability to natural hazards. It illustrates lessons and experiences in disaster risk reduction. It explores the way in which the understanding of disaster management and risk has evolved over recent years. It takes account of the technologies of the future - the satellite sensors that might read telltale signs of volcanic activity, seismic shift or collapsing hillsides days or weeks before any catastrophe occurs, or telemetry that can monitor the build up of soil moisture in a watershed that could serve as a warning of sudden flooding downstream.

Most of all, it looks at how societies organize themselves, how communities interact with each other, how civic and national authorities respond to the challenges of natural hazard. It explores the mosaic of interests, the kaleidoscope of attitudes and the network of actors that must be mobilized towards realizing risk reduction and disaster prevention.

The review considers how warnings progress from the work of technical specialists to the government authorities and from these to the people at risk. It considers the political short-sightedness, the increasing vulnerabilities and the unmet challenges that turn environmental degradation and natural and technological hazards into social and economic disasters in different cultures and societies.

The review explores the different strategies demanded by different kinds of human and environmental conditions. But it also addresses a universal truth; any disaster reduction strategy demands, first and foremost, political will. This commitment must then be linked to national and local development planning and sustainable action.

It builds on an understanding that risk reduction and disaster preparedness always make better economic sense than reliance on disaster relief. Although small groups cooperate spontaneously because of immediate shared danger, larger societies need coherent legal obligations and responsibilities that foster the involvement of the community and the participation of its people to face long-term risks.

None of these things can happen without some form of public debate and education at every level of society. It will require shared thinking at both international and regional levels because nations often share a forested terrain, a river or a mountain chain. Inevitably, they have a common interest in disaster prevention. It will also require new ways of looking at the landscape, with an understanding not simply on how it might be exploited but also on the price it will exact for the wrong kind of exploitation.

Secure societies are those that have learned to live with their land as well as from it. Disaster reduction strategies will have succeeded when governments and citizens understand that a natural disaster is a failure of foresight and evidence of their own neglected responsibility rather than an act of god.