

2009 Global Assessment Report on Disaster Risk Reduction

# **Risk and poverty in a changing climate**

*Invest today for a safer tomorrow*



United Nations

ISBN 978-92-1-132028-2

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*Citation:* ISDR (2009) Global Assessment Report on Disaster Risk Reduction. United Nations, Geneva, Switzerland.

Editing, design, layout and proofreading: Green Ink, UK ([www.greenink.co.uk](http://www.greenink.co.uk))

Printed by: Oriental Press, Manama, Kingdom of Bahrain

## Foreword

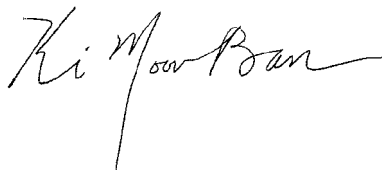
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This first edition of the United Nations *Global Assessment Report on Disaster Risk Reduction* is not only a comprehensive review and analysis of the natural hazards menacing humanity. It also provides new and arresting evidence on how, where and why disaster risk is increasing globally. That risk is highly concentrated in middle- and low-income countries, and is felt most acutely by people living in poor rural areas and slums. But of course, wealthier countries are not immune, as bush fires in Australia reminded us so tragically at the start of this year. The risk of disaster touches every woman, man and child on Earth.

Drawing on detailed studies, this *Global Assessment* urges a radical shift in development practices, and a major new emphasis on resilience and disaster planning. Floods, droughts, storms, earthquakes, fires and other events, when combined with ‘risk drivers’ such as increasing urbanization, poor urban governance, vulnerable rural livelihoods and the decline of ecosystems, can lead to massive human misery and crippling economic losses. The risks posed by global climate change and rising sea levels carry additional grave implications for how we will live in the near future.

While we cannot prevent natural phenomena such as earthquakes and cyclones, we can limit their impacts. The scale of any disaster is linked closely to past decisions taken by citizens and governments – or the absence of such decisions. Pre-emptive risk reduction is the key. Sound response mechanisms after the event, however effective, are never enough.

The current rate of progress is inadequate if we are to achieve, by 2015, the substantial reduction of disaster losses called for in The Hyogo Framework for Action and in the Millennium Development Goals. Fortunately, we know what to do. This Report sets out a range of much-needed action and provides compelling evidence that investing in disaster risk reduction is a cost-effective means to protect development, reduce poverty and adapt to climate change. I commend this important and impressive collaborative effort by the UN International Strategy for Disaster Reduction system to policymakers and all others involved in the essential quest to build a safer world.



Ban Ki-moon  
**Secretary-General of the United Nations**



## Preface

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Development efforts are increasingly at risk. A faltering global economy, food and energy insecurity, conflict, global climate change, declining ecosystems, extreme poverty and the threat of pandemics are amongst the factors challenging progress towards improving social welfare and economic stability in many developing countries. As a series of catastrophes in 2008 yet again reminded us, disaster risks associated with hazards such as tropical cyclones, floods, earthquakes, droughts and other natural hazards form a critical part of this interlocking constellation of threats and constitute a critical challenge to development.

The *2009 Global Assessment Report on Disaster Risk Reduction* focuses attention on this challenge. The Report identifies disaster risk, analyses its causes and effects, shows that these causes can be addressed and recommends means to do so. The central message of the Report is that reducing disaster risk can provide a vehicle to reduce poverty, safeguard development and adapt to climate change, with beneficial effects on broader global stability and sustainability.

The *2009 Global Assessment Report on Disaster Risk Reduction* is the first biennial global assessment of disaster risk reduction prepared in the context of the International Strategy for Disaster Reduction (ISDR). The ISDR, launched in 2000, provides a framework to coordinate actions to address disaster risks at the local, national, regional and international levels. The Hyogo Framework for Action (HFA), endorsed by UN member states at the World Conference on Disaster Reduction, Kobe, Japan, in 2005, commits all countries to make major efforts to reduce their disaster risk by 2015. It is expected that this Report will help focus international attention on the problem of disaster risk and to consolidate political and economic support and commitment to disaster risk reduction.

The focus of this Report is the nexus between disaster risk and poverty, in a context of global climate change. Both mortality and

economic loss risk are heavily concentrated in developing countries and within these countries they disproportionately affect the poor. Disaster impacts have persistent, long-term negative impacts on poverty and human development that undermine the achievement of the Millennium Development Goals (MDGs). The Report identifies underlying risk drivers such as vulnerable rural livelihoods, poor urban governance and declining ecosystems that shape the relationship between disaster risk and poverty. It also shows how climate change will magnify the uneven social and territorial distribution of risk, increasing the risks faced by the poor and further amplifying poverty.

The Report argues the need for an urgent paradigm shift in disaster risk reduction. Current progress in implementing the HFA is failing to address these underlying risk drivers and the translation of disaster impacts into poverty outcomes. Efforts to reduce disaster risk, reduce poverty and adapt to climate change are poorly coordinated. At the same time, however, innovative approaches and tools, in areas such as urban governance, ecosystem management, sustainable rural livelihoods, risk transfer and local and community-based approaches, exist and are being applied creatively at the local level and in different sectors throughout the developing world. The challenge identified by the Report is to link and focus the policy and governance frameworks for disaster risk reduction, poverty reduction and climate change adaptation in a way that can bring these local and sectoral approaches into the mainstream. This will not only facilitate the achievement of the HFA: it will contribute towards poverty reduction and the achievement of the MDGs. Importantly, it also provides a vehicle to enable countries to adapt to global climate change.

The *2009 Global Assessment Report on Disaster Risk Reduction* is a collaborative effort of the ISDR system. The Report has been prepared and coordinated by UNISDR in partnership with

the United Nations Development Programme (UNDP), the World Bank, United Nations Environment Programme (UNEP), World Meteorological Organization (WMO), United Nations Educational, Scientific and Cultural Organization (UNESCO), the ProVention Consortium, regional intergovernmental and technical institutions, national governments, civil society networks, academic institutions and many other ISDR system partners. A number of parallel activity streams, undertaken over an 18-month period, have contributed to the Report:

- A global disaster risk analysis was carried out involving a major global effort by a large number of scientific and technical institutions. Major methodological innovations have enabled a more accurate characterization of global mortality and economic loss risk for natural hazards such as floods, tropical cyclones and landslides, the identification of key risk drivers and trends and an initial characterization of economic resilience. Each of the hazard updates was reviewed by a panel of international scientists.
- An analysis of disaster risk at the local level was similarly based on a major coordinated effort by a large number of institutions to compile, update and validate data from national disaster databases in 12 countries. This analysis sheds light on the emergence of patterns and trends of extensive disaster risk, affecting wide areas and manifested as frequent, but relatively low-intensity, losses. In addition, empirical research was conducted to examine disaster risk–poverty interactions at the local- and household levels.
- Specialized international research institutes were commissioned to produce a series of issue papers that provided the basis for an analysis of the underlying risk drivers that configure the disaster risk–poverty nexus in both rural and urban contexts.
- A review of progress towards the achievement of the HFA was completed by 62 countries (as of February 2009), against 22 core indicators and 5 benchmarks, using an on-line ‘HFA Monitor’ tool. Thematic practice reviews were also produced for the Report on early warning

systems, financial mechanisms, local- and community-level approaches, urban disaster risk reduction, environmental management, disaster risk reduction governance, climate change adaptation and sustainable livelihoods. Other partners contributed case studies and practice reviews across a wide range of disaster risk reduction practice areas. The review process not only highlighted the progress being made against the HFA but also a range of innovative approaches and practices that address the underlying risk drivers.

The Report has been drafted to inform the Second Session of the Global Platform for Disaster Risk Reduction to be held in Geneva on 16–19 June, 2009. As such its principal audience is national-level policy makers in disaster prone countries as well as the regional and international organizations that support such countries.

While the Report addresses the relationship between disaster risk and poverty in a context of climate change, its central focus is on disaster risk reduction. It has not been possible, nor was it intended, to provide a comprehensive review of policies, research and practice in poverty reduction and climate change adaptation. Nevertheless, disaster risk reduction is a key paradigm through which both poverty reduction and climate change adaptation can be addressed. One of the key messages of the Report is that by addressing the underlying drivers of disaster risk it is possible to reduce poverty and to adapt to climate change.

The Report builds on conceptual frameworks and terminology developed over the years by the disaster risk reduction community. This is an important point given that both the poverty reduction and climate change communities assign different meanings to terms such as hazard, vulnerability, risk and mitigation. Unless otherwise stated, the terminology used in this report is that contained in a glossary recently published by UNISDR<sup>1</sup>. The Report is presented in three different formats for different audiences:

A short **Summary and Recommendations document** provides an overview of the key findings and recommendations of the Report for

national governments, regional and international organizations as well as for policy makers from civil society and the private sector.

The main body of **the Report** is structured around seven chapters and provides technical information for disaster risk reduction policy makers, practitioners and researchers:

- Chapter 1: *The global challenge: disaster risk, poverty and climate change* provides an overview of the key policy issues addressed in the Report.
- Chapter 2: *Global disaster risk: patterns, trends and drivers* presents the findings of the global risk analysis.
- Chapter 3: *Deconstructing disaster: risk patterns and poverty trends at the local level* presents an analysis of national level disaster and poverty data.
- Chapter 4: *The heart of the matter: the underlying risk drivers* analyses the role of vulnerable rural livelihoods, poor urban governance, declining ecosystems and global climate change in configuring disaster risk.
- Chapter 5: *Review of progress in the implementation of the Hyogo Framework for Action* presents an overview and analysis of the progress reports prepared by countries, a desk review of the integration of disaster risk reduction into poverty reduction strategies and climate change adaptation policy, and a review of progress in thematic areas such as early warning.
- Chapter 6: *Addressing the underlying risk drivers* identifies and examines best practice for addressing the disaster risk–poverty nexus in areas such as good urban and local governance, strengthening rural livelihoods, ecosystem management, innovative financial mechanisms and local- and community-level disaster risk reduction.
- Chapter 7: *Investing today for a safer tomorrow* presents the conclusions and recommendations of the Report.

A series of **Appendices**, as well as background papers commissioned for the Report, are available in the accompanying CD-Rom and also online at PreventionWeb<sup>2</sup>. These are made available for specialists who wish to have a more in-depth exploration of the issues addressed in

the Report. The quantitative data used to produce the Report are also available as an online Global Risk Data Platform at PreventionWeb, allowing researchers to perform their own analysis. It is expected that this will encourage innovative new research that in turn will feed back into future iterations of the ISDR Global Assessment Report on Disaster Risk Reduction.

While a considerable body of evidence has been produced to support the recommendations of the Report, it is also necessary to highlight areas that have not been addressed. Constraints in data and methodology have not allowed the modelling of drought risk or an adequate characterization of losses in the agricultural sector and rural areas. Qualitative evidence from case studies and the results of empirical microstudies of disaster risk–poverty interactions provide insights into the impacts of drought on rural livelihoods. However, drought risk is a major gap in the report, in particular for regions such as sub-Saharan Africa where it is associated with major disaster impacts and poverty outcomes.

Data constraints also limit the global relevance and representativeness of the disaster risk and poverty analysis at the local level. Progress in compiling national disaster loss data has been largely limited to Asia, Latin America and the Caribbean. Similarly, poverty panel data that include modules on natural hazards and with a local-level resolution are not widely available in most countries. As such the empirical evidence linking disaster risk to poverty is limited to microstudies from particular countries. While this evidence in itself is compelling, with existing data it is not possible to generate comparable findings across countries and regions.

The HFA progress review is based on information provided by national governments, normally from the organization or focal point responsible for disaster risk reduction. It was not possible in this exercise to systematically review progress being made by regional or international organizations or by other national stakeholders such as the private sector or civil society. The findings, therefore, do not necessarily reflect a complete picture of the progress being made in each HFA Priority Area.

Finally, the focus of this Report is on the disaster risk and poverty nexus in a context of global climate change. It does not address in-depth issues of disaster risk in other development sectors such as health, education, transport and energy.

It is hoped that the publication of this Report will stimulate improved data collection and research which can enable these gaps to be

addressed in future iterations of the ISDR Global Assessment Report on Disaster Risk Reduction.

### **Endnotes**

- 1 UNISDR, 2009
- 2 [www.preventionweb.net/gar09](http://www.preventionweb.net/gar09)



# Acknowledgements

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The *2009 Global Assessment Report on Disaster Risk Reduction* is the first biennial report of the International Strategy for Disaster Reduction (ISDR) system. The Report is a result of collaborative multi-stakeholder efforts among a large number of ISDR system partners that has been ongoing since July 2007.

The development of the Report was coordinated by UNISDR in collaboration with the World Bank, the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), the ProVention Consortium, the World Meteorological Organization (WMO) and the United Nations Education and Scientific Cultural Organization (UNESCO).

Regional facilitation support was also extended by the following inter-governmental organizations and specialized centres: African Union (AU), Association of Southeast Asian Nations (ASEAN), Caribbean Disaster Emergency Response Agency (CDERA), Centro de Coordinación para la Prevención de Desastres Naturales en América Central (CEPREDENAC), League of Arab States, Organization of American States, Pacific Islands Applied Geoscience Commission (SOPAC), Apoyo a la Prevención de Desastres en la Comunidad Andina (PREDECAN) on behalf of the Comité Andino para la Prevención y Atención de Desastres (CAPRADE), South Asian Association for Regional Cooperation (SAARC). As of February 2009, over 62 national governments had prepared progress reports on implementation of the Hyogo Framework of Action (HFA)<sup>1</sup>.

The Kingdom of Bahrain, the Global Facility for Disaster Reduction and Recovery (GFDRR), UNDP, UNEP, the Government of Norway, the Government of Switzerland, the ProVention Consortium and the Gesellschaft für Technische Zusammenarbeit (German Technical Cooperation) (GTZ) contributed financial resources that enabled the successful development of this first biennial Global Assessment Report on Disaster Risk Reduction.

Collaborating institutions included: Centro de Estudios Sociales y Ambientales (CENTRO), Argentina; the Earth Institute at Columbia University; Corporacion Observatorio Sismologico del Sur-Occidente (OSSO), Colombia; Dartmouth Flood Observatory; Duryog Nivaran; Rural Development Policy Institute, Pakistan; Early Recovery Cluster of the Inter Agency Standing Committee (IASC); International Recovery Platform (IRP); Earthquakes and Megacities Initiative (EMI); Facultad Latinoamericana de Ciencias Sociales

(FLACSO); Food and Agriculture Organization of the United Nations (FAO); Global Fire Monitoring Centre; Grupo de Análisis para el Desarrollo, Peru; Gesellschaft für Technische Zusammenarbeit (GTZ); Institute of Development Studies (IDS), UK; Intergovernmental Oceanographic Commission; International Federation of Red Cross and Red Crescent Societies (IFRC); International Institute for Environment and Development (IIED), UK; International Telecommunications Union; National Society of Earthquake Technology, Nepal; Norwegian Geotechnical Institute; Sistema Integrado de Indicadores Sociales del Ecuador, Ecuador; Stockholm Resilience Centre; UNDP Country Offices of India, Iran, Mexico, Nepal and Sri Lanka; United Nations Children's Fund (UNICEF); UN Office for the Coordination of Humanitarian Affairs (UN OCHA); United Nations Operational Satellite Applications Programme (UNOSAT); United Nations University; United States Geological Survey (USGS); Universidad Nacional Autónoma de México; University of Cape Town; University of Oxford; World Food Programme (WFP); and the World Health Organization (WHO).

Oversight and guidance for the development of the Report was provided by the Chair of the ISDR system and the ISDR Management Oversight Board, Mr John Holmes.

The global launch of the Report was coordinated by the UN Resident Coordinators Office in Bahrain and the Ministry of Foreign Affairs of the Kingdom of Bahrain, in collaboration with the regional offices of WMO and UNEP, the United Nations Information Centre in Bahrain and UNISDR West Asia and North Africa office, among other partners.

## UNISDR team

The preparation of the Report was coordinated and supervised by a team at UNISDR Geneva: Andrew Maskrey (coordinator and lead author), Shefali Juneja (coordinator of the HFA progress reporting and co-author), Pascal Peduzzi (coordinator of the global risk analysis and co-author) and Carolin Schaerpf (editorial assistant). Invaluable guidance was provided by Margareta Wahlstrom, Salvano Briceno and Helena Molin-Valdes.

UNISDR regional offices coordinated the regional and national HFA progress reporting: Seth Vordzorgbe, Pedro Basabe, Rhea Katsanakis and Helene Lafferty (Africa); Jerry Velasquez, Angelika Planitz, Madhavi Ariyabandu and Abhilash Panda (Asia and Pacific); Paola Albrito (Europe); Dave Zervaas, Haris Sanahuja

and Jennifer Guralnick (Latin America and the Caribbean); Mostafa Mohaghegh, Luna Abu Swaireh, Osama Hamad, Mohamed Sadatinejad and Goulsara Poulatova (West Asia and North Africa).

Craig Duncan, Sujit Mohanty, Sylvain Ponserre, Joel Margate, Simonetta Consorti and Sarah Wade-Hutman of the Information Management Unit supported the design and roll out of the online HFA Monitor tool and other online services on PreventionWeb. Mario Barrantes of the Advocacy and Coordination Unit advised on the design and layout of the report and Brigitte Leoni advised on the media and communications strategy. Support from colleagues in the UNISDR Administration and Finance Unit: Christine Alessi, Stephanie Boubault, Sam Hammond and Xiaoqing Yu and kind assistance from Danielle Widmer and Minhye Park (interns) is also gratefully acknowledged.

### Coordination support

Coordination support for specific components of the report was provided by: Maxx Dilley, Carlos Villacis and Julio Serje (UNDP Bureau for Crisis Prevention and Recovery (BCPR) Global Risk Identification Programme (GRIP)); Nescha Teckle, Sanny Jegillos and Rajesh Sharma (UNDP Regional Centre Bangkok); Luis Felipe Lopez-Calva and Jesus Eduardo Ortiz (UNDP Regional Bureau for Latin America and the Caribbean); Angeles Arenas (UNDP/BCPR Panama); Saroj Jha, C.y. Nuñez-Ollero, Uwe Deichmann, Alejandro De la Fuente and Henrike Brecht (World Bank); Glenn Dolcemascalo and Anantha Durraipappah (UNEP); Maryam Golnaraghi and Jean Baptiste Migraine (WMO); Margaret Arnold and Ian O'Donnell (ProVention Consortium); Andres Velasquez, Cristina Rosales, Nayibe Jimenez and Natalia Diaz (Corporacion OSSO); Badaoui Roubhan (UNESCO); and Alberto Aquino (GTZ).

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### Reviewers

Over 70 reviewers commented on the first draft of the Report, including staff members of UNSIDR, authors, contributors and collaborating institutions. In addition, we would like to particularly thank Omar Dario Cardona, Jeremy Collymore, Terry Jeggle, Namsuk Kim, Marcus Oxley, Johan Schaar and Cecilia Ugaz, for their impartial insight and guidance. Very special thanks are extended to David Satterthwaite.

Scientific peer reviews of the global hazard models were coordinated by Maryam Golnaraghi and Jean Baptiste Migraine (WMO) for tropical cyclones, floods and droughts, and by Juliana Chaves Chaparro, Takashi Imamura and Badaoui Roubhan (UNESCO) for landslide, earthquake and tsunamis. Reviewers included Linda Anderson-Berry, Jim Davidson, Koji Kuroiwa, Woo-Jin Lee and Taoyong Ping for tropical cyclones; Wolfgang Grabs, Zhiyu Liu and Ayinash Tyagi for floods; Orivaldo Brunini, Simone Orlandini, Harlan D. Shannon, Mannaya Sivakumar, Robert Stefanski and Mark Svoboda for drought; Nicola Casagli, Lynn Highland, Dwikorita Karnawati, Kyoji Sassa and Alexander Strom for landslide; Mihail Garevski, Giuliano Panza, Avi Shapira and Kunihiko Shimazaki for earthquake; and Jörn Behrens, Kenji Satake, Stefano Tinti and Alfred Wegener for tsunamis.

Acknowledgements for chapter contributors and co-authors are presented at the start of each chapter.

### Endnote

1 See Appendix 3 for a list of countries that submitted HFA progress reports.

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