International Strategy for Disaster Reduction

HFA

Indicators of Progress:

Guidance on Measuring the Reduction of Disaster Risks and the Implementation of the Hyogo Framework for Action

United Nations

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Foreword

In January 2005, at the World Conference on Disaster Reduction, in Kobe Hyogo, Japan, 168 States adopted the *Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters*, with the overriding goal of achieving a substantial reduction in global disaster risk. The Hyogo Framework provides comprehensive action-oriented policy guidance based on a comprehensive understanding of disaster risks, which arise from human vulnerability to natural hazards.

In the preparatory negotiations on the Framework, States stressed the need for specific means, including indicators, to measure progress toward the reduction of disaster risks. In particular, it was requested in paragraph 33c that the ISDR system, supported by the ISDR secretariat, coordinates the development of "generic, realistic and measurable indicators" for disaster risk reduction. It encouraged States to thereafter develop and refine such indicators for national use.

Indicators, benchmarks and targets are commonly accepted tools to focus and guide development investments, the Millennium Development Goals being an important example.

Indicators of Progress: Guidance on Measuring the Reduction of Disaster Risks and the Implementation of the Hyogo Framework for Action is an important step towards addressing this request. It is intended to assist not only national authorities but also civil society and community organisations, regional inter-governmental institutions and technical bodies, international and donor communities in setting priorities for policies, plans and programmes for disaster risk reduction, while regularly monitoring and reviewing achievements against the chosen indicators.

Drawing on an online consultation held in 2005 as well as various consultative drafts, discussions and expert inputs prepared over 2006, it offers a set of 'recommended' indicators for implementing each of the Hyogo Framework's five priorities for action, three strategic goals and one overall outcome. These build on the indicators for the Hyogo Framework's priorities for action have been included in the recent ISDR publication *Words into Action: A Guide for Implementing the Hyogo Framework.*

National, regional and international organisations are encouraged to actively explore the refinement and application of these indicators in their mandated areas. This will require concerted and collaborative effort by academics, practitioners and policymakers, with a strong focus on achieving practicality and effectiveness in particular national settings. The ISDR secretariat will seek to foster follow-up supporting activities, including workshops, to advance the development and use of indicators as a tool for both work programming and progress reporting, along with associated practices such as benchmarking.

The ISDR secretariat will welcome any feedback, which will be incorporated in subsequent versions of the document.

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Consultation process and acknowledgements

This report was developed under the initial guidance of the former Inter-Agency Task Force on Disaster Reduction (IATF/DR) whose members included: Food and Agriculture Organization, International Labour Organization, International Telecommunication Union, Office for the Coordination of Humanitarian Affairs, United Nations Centre for Regional Development, United Nations Development Programme, United Nations Educational, Scientific and Cultural Organization, United Nations Environment Programme, United Nations Institute for Training and Research, United Nations Human Settlements Programme, United Nations University, United Nations Volunteers, World Bank, World Food Programme, World Health Organization, World Meteorological Organization; (regional organisations): African Union Commission, Asian Disaster Preparedness Center, Asian Disaster Reduction Center, Commonwealth of Independent States Interstate Council, Council of Europe, European Commission- Joint Research Centre, Ibero-American Association of Civil Defence and Civil Protection, Inter-Governmental Authority on Development's Climate Prediction and Applications Centre, New Partnership for Africa's Development Secretariat/African Union, Organization of American States-Inter-American Committee on Natural Disaster Reduction, South Pacific Applied Geoscience Commission; (civil society organisations): ActionAid International, Centre for Research on the Epidemiology of Disasters, Global Fire Monitoring Center, International Council of Scientific Unions, International Federation of Red Cross and Red Crescent Societies, Munich Re-insurance.

As part of the follow-up activities to the adoption of the Hyogo Framework, technical discussions were held on the side of the eleventh[1] and twelfth[2] sessions of the IATF/DR, in Geneva in May and November 2005 respectively, to consider the design of a guide note and consultation processes needed to respond to the Hyogo Framework's paragraph 33(c) concerning the development of *generic, realistic and measurable indicators*.

The discussions were moderated by Paola Albrito (UN/ISDR) and participants included Angelika Planitz (UNDP), Norah Niland (OCHA), Francesc Pla (Council of Europe), Nichole Mc Garry (WHO), Anthony Spalton (IFRC), Alan Mearns (SOPAC), Joe Chung (UN/ISDR) Yoshihiko Uchikura (UNESCO), Akihiro Teranishi (ADRC) Aberto Pacheco (UNEP), Stefanie Dannenmann (UN/ISDR), Carlos Dueñas (Ibero-American Association of Civil Defence and Civil Protection), Juan Pedro Lahore (Dirección General de Protección Civil, Spain), Everett Ressler (UNICEF), Christel Rose (UN/ISDR), Philip Buckle (Coventry University), Graham Marsh (Coventry University), Saroj Jha (World Bank), P.G. Dhar Chakrabarti (NIDM, India), Satoru Nishikawa and Shinji Matsuka (Cabinet Office, Government of Japan), Martin Owen (National Platform, Uganda), Fouad Bendimerad (EMI), L.A. Ogallo (ICPAC), Helena Molin Valdés (UN/ISDR), Terry Jeggle (UN/ISDR) and Akira Kato (Mission of Japan in Geneva).

Subsequently, an online dialogue[3] was organised by the ISDR secretariat over the period 12 September to 10 October 2005, to obtain wide input on three topics (1): Understanding how to measure progress in disaster risk reduction (2): Implementation and application of indicators, and (3): Procedures for reviewing national progress. Approximately 507 individuals participated in the on-line consultation. The on-line consultation moderator and initial draft consultants were Philip Buckle and Graham Marsh. A summary of the dialogue is included in Annex 8 of the CD-ROM that accompanies this guide.

During 2006 and 2007, consultant Stephen O. Bender prepared a substantive draft document that forms the primary foundation for the final guide. Inputs on the draft outline were contributed during an UN/ISDR workshop on indicators, Geneva, July 24-27, 2006, from: Stephen Bender, Fouad Bendimerad (EMI), Ron Cadribo, P.G. Dhar Chakrabarti, Tanya Miquilena de Corrales, and Alain Valency (consultants), and Pedro Basabe, Helena Molin Valdes, Feng Min Kan, Terry Jeggle, Silvia Llosa and Praveen Pardeshi (UN/ISDR secretariat).

[1] http://www.unisdr.org/eng/task%20force/tf-meeting-11th-eng.htm
[2] http://www.unisdr.org/eng/task%20force/tf-meeting-12th-eng.htm
[3] http://www.unisdr.org/HFdialogue

Additional expert reviewers included: Charlotte Benson (consultant), Ilan Kelman (Cambridge University), John Twigg (Benfield UCL Hazard Research Centre), Ben Wisner (RADIX), Marcus Oxley and Sarah La Trobe (Tearfund), Omar Darío Cardona (Universidad Nacional de Colombia), Tanya Miquilena de Corrales (Consultant), Ian O'Donnell (ProVention Consortium), Saroj Jha (World Bank), Maxx Dilley (UNDP/BCPR).

A final review and inputs were also provided from within the ISDR secretariat by; Helena Molin Valdes, Mostafa Mohahgegh and Andrew Maskrey.

From the ISDR secretariat, Paola Albrito coordinated the consultations, Reid Basher with support from Shefali Juneja revised and finalised the guide, and Mario Barrantes and Carolin Schäerpf managed the production process.

This publication would not have been possible without the many inputs of individuals, national and institutional representatives. While every effort has been made to name all contributors, the UN/ISDR secretariat regrets if any organization or individual contributor has been overlooked in the lists above. The UN/ISDR secretariat gratefully acknowledges the many contributions received from individuals, institutions and States.

This guidance was prepared as part of the ISDR secretariat Biennial Work Plan 2006-2007, which in 2007 was supported by contributions to the United Nations Trust Fund for Disaster Reduction from the following governments: Australia, Canada, Cyprus, Denmark, Finland, Germany, India, Japan, Luxembourg, Norway, Philippines, Sweden, Switzerland and the United Kingdom of Great Britain and Northern Ireland, and from the European Commission, and the World Bank through the Global Facility for Disaster Reduction and Recovery.

The present version is a consultation draft. Feedback on the document is actively sought, especially concerning national experience in use of the guidance and in the application of indicators. Comments and information will be used in further editions.

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1. Introduction

1.1 Disaster risks and their reduction

Disasters occur when a society's capacities to manage the effects of a natural hazard event are overwhelmed. The scale of a disaster depends therefore not only on the magnitude of the hazard event, such as a storm, drought, earthquake, tsunami or other hazard, but equally importantly on the degree to which the society is exposed to the hazard and is ill-prepared to cope with it. The evidence of recent decades shows that many societies are not well-prepared for natural hazard events, and that disasters are increasing in scope and impact as a result of the combination of increasing population density and asset stocks, inappropriate and exploitative land use, unplanned settlements, and lack of awareness on risk reduction by authorities and citizens at large.

At the same time, there is growing recognition that the risks of disasters can be substantially reduced through specific actions such as wise land use planning, safe building design, public education, early warning systems and other preparedness measures.

A comprehensive description of the priorities for action for the next decade was set out in the *Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters*, which was negotiated and endorsed by 168 UN Member States at the World Conference on Disaster Reduction, held in Kobe, Hyogo Prefecture, Japan, 18-22 January 2005, with the support of numerous UN, technical, civil society organisations. It was later endorsed by the United Nations General Assembly (A/RES/61/195).

1.2 Hyogo Framework expectations

An explicit requirement of the Hyogo Framework[4] is that progress on its implementation will be monitored and reported on. This is necessary in order to assess if disaster risks and losses are in fact being reduced, and that appropriate policies and programmes are in place to achieve this. Reliable information is needed on the risks faced, the losses experienced, and the risk reduction actions taken.

The most relevant parts of the Hyogo Framework for the present report are Part II, which defines the Framework's expected outcome and strategic goals, and Part III, which sets out the detailed priorities for action. These are described as follows.

The overriding Expected Outcome
The substantial reduction of disaster losses, in lives and in the social, economic and environmental assets of communities and states.

The three Strategic Goals
1. *The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction*;
2. *The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards; and*
3. *The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.*

[4] The full text of the Hyogo Framework for Action is available as Annex 7 in the accompanying CD. It can also be downloaded from the ISDR website http://www.unisdr.org/eng/HFA/HFA.htm (also available in the other UN languages – French, Spanish, Chinese, Arabic and Russian.)

The five Priorities for Action

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

Each of the Priorities for Action is further elaborated into a number of specific tasks and activities.

Part IV of the Hyogo Framework sets out expectations regarding implementation and follow up of the Framework. States have the primary responsibility for the implementation of disaster risk reduction, but responsibilities are also described for other parties, including regional organisations and international organisations, and members of the International Strategy for Disaster Reduction (ISDR) and its secretariat. Academic and technical bodies, non-governmental organisations, and the private sector also have significant roles to play in what must be a broad effort to reduce disaster risks.

Paragraph 33(c) specifically requests the ISDR system, supported by the ISDR secretariat, to coordinate the development of "generic, realistic and measurable indicators" for disaster risk reduction[5]. It further encouraged States to thereafter develop and refine indicators for application at the national level, noting that "countries ... that are able to develop and track progress through specific and measurable indicators have greater capacity to manage risks and to achieve widespread consensus for, engagement in and compliance with disaster risk reduction measures across all sectors of society."[6]

The '*Indicators of Progress*' guidance has been prepared as a first step by the ISDR secretariat and ISDR system partners toward addressing this request[7]. It draws on national and international expert contributions[8] coordinated by the ISDR secretariat, and complements the recent ISDR publications *Words into Action: a Guide for Implementing the Hyogo Framework* and the progress review, *Disaster Risk Reduction: 2007 Global Review*, a consultative version of which was prepared for the first session of the Global Platform for Disaster Risk Reduction, Geneva, 5-7 June, 2007[9].

1.3 Audience and purpose

The intended audience for this guide are primarily the national authorities and officials who have responsibilities for implementing disaster risk reduction activities and for monitoring and reporting on progress. This has been compiled for nationally-designated HFA focal points, and officials in relevant sectors such as national development, civil protection, environment, education, agriculture, health and water resources, and officials in subsidiary provincial, city and local government.

Other audiences to whom this guide will be useful include community-based organizations, non-governmental organisations, business and industry groups, local government and academia. While individual States are mainly responsible for the implementation of disaster risk reduction and for the development and application of national indicators, communities and organizations also can make use of proposed indicators to help describe and manage their disaster risk reduction activities[10].

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[5] Hyogo Framework, Part IV. Implementation and follow-up. Section E, paragraph 33c. Indicators are explained later. They include measurable expressions such as "Number of deaths arising from natural hazard events", and "Early warning systems are in place for all major hazards."

[6] Hyogo Framework, Part III. Priorities for Action 2005–2015. Section B, paragraph 16.

[7] In this guidance, indicators for the Hyogo Framework's expected outcome, strategic goals and priorities for action are discussed. Indicators for the implementation elements of Part IV of the Framework are not considered, but where such indicators may be desired, the principles outlined in the report are expected to be relevant and useful to their development.

[8] See Acknowledgements above.

[9] The Disaster Risk Reduction: 2007 Global Review is now available online http://www.preventionweb.net/english/hyogo/gar/global-review/

[10] Further guidance, please note that other agencies are in the process of developing indicators. For example, six United Kingdom based agencies are currently developing a set of indicators that can be used by local partner organizations and communities to demonstrate the impact of community disaster risk reduction projects and to assess their conformity to the Hyogo Framework. For more information: http://www.benfieldhrc.org/disaster_studies/projects/communitydrrindicators/community_drr_indicators_index.htm

Experts and officials of international and regional technical bodies, and inter-governmental sub/ regional organizations, particularly those with a responsibility to support States in disaster risk reduction efforts, will also find the guidance of use. Indicators for applications at the international and regional levels are listed in Annex 3, and can be adapted by institutions working across regions.

Overall, the guide is designed to assist all States, regardless of their initial familiarity with indicators, with practical guidance on the development of nationally relevant indicators for application in policy, programming, monitoring, evaluation and review processes. The main aim is to support the development of a managerial, indicator-based approach to the design and implementation of disaster risk reduction activities, as a means to improve the effectiveness of policies and activities, and to provide guidance to national authorities to help them develop indicators tailored to their needs.

1.4 Approach and content

The guide's main objective is to provide key principles and basic information to consider when identifying and applying relevant indicators to implement the Hyogo Framework's priority actions, and assess overall progress.

The guide builds on the extensive work already underway to measure disaster risk reduction, rather than prescribing a single solution or set of solutions. Users are encouraged to apply the specific indicators provided in this guide to the relevant stages of policy, programming, monitoring and evaluation, reviews or reporting, but at the same time they may wish to develop different or additional indicators of their own design related to their particular circumstances, hazard types, population, geographic areas and sectors of activity.

A variety of indicators are likely to be necessary to adequately capture progress on disaster risk reduction. Some examples of possible additional indicators that could be adopted at the national and sub national levels are listed in Annex 2.

The guide explains the basic rationale of indicators and their use, describes the features of 'good indicators', provides advice on how they can be measured, and discusses the factors to consider when tailoring generic indicators to particular contexts.

The idea of benchmarks for indicators is also discussed. A simple assessment tool is proposed as a means to measure qualitative progress on indicators. The relationship of indicators and benchmarks to the Millennium Development Goals is considered in Annex 4 and Annex 6.

An important contribution of the guide is its proposed set of indicators for the main elements of the Hyogo Framework – namely for its one expected outcome, three strategic goals and five priorities for action. The rationale and significance of the proposed indicators is included in Annex 1. The use of the guide can be linked to the ISDR document "Words into Action: Guide for Implementing the Hyogo Framework"[11], which provides guidance on 22 key tasks that national actors can undertake as steps towards addressing the five priorities of the Hyogo Framework.

The guidance is expected to contribute to enhancing disaster risk reduction knowledge and expertise and action to reduce risks. The systematic use of indicators will strengthen mechanisms for recording, analysing, summarizing and disseminating statistical information on disaster occurrence, impacts and losses, and will assist in the provision of transparent guidance and evaluation of policies and programmes by policy makers, decision makers and the public.

[11] See http://www.unisdr.org/eng/hfa/docs/Words-into-action/Words-Into-Action.pdf

2. Context and Principles

This section provides some context on the continually evolving nature of disaster risk, and the corresponding dynamics of disaster risk reduction efforts. The nature of disaster risk reduction is particularly made explicit in its relation to the Millenium Development Goals (MDGs), within the context of achieving sustainable development objectives.

2.1 Nature of disaster risk reduction

Disaster risk reduction comprises a range of activities undertaken to minimize vulnerabilities and disaster risk throughout a society, to avoid or to limit the adverse impact of hazards, within the broad context of sustainable development[12]. The following general points about disaster risk reduction need to be considered when identifying and developing relevant indicators.

- *Hazard, exposure and vulnerability*: Disaster risk arises from the combination of natural hazards, human activities' exposure to hazards, and the populations' vulnerability to hazard events. Indicators therefore are needed for all of these factors, as well as for disaster occurrence and for initiatives to reduce the risks.
- *Crosscutting issue*: Disaster risk affects all sectors, actors, populations, economic infrastructure and social fabric. It is intimately connected to development. To be effective, disaster risk reduction must involve the populations at risk and therefore all of the local and provincial entities that serve these populations.
- *Variety of scope*: Disaster risk reduction initiatives might take a hazard focus, e.g. to reduce earthquake losses, or a social focus, e.g. to reduce the vulnerability of informal settlements. They may focus on a geographical/geopolitical setting, such as a high mountain region, or a sector or an infrastructure type such as schools. They may involve significant technology, or extensive community engagement.
- *Multiple factors to consider*: Individual disaster risk reduction initiatives usually involve multiple factors - physical, financial, economic, social, environmental. For example, the risk of earthquake damage to a bridge will not only dictate the physical structure and hence the financial obligations tied to the bridge (such as loans or concessions for operations), but will also influence the neighbouring environments and the economic and social well-being of the various populations who use the bridge.
- *Disaster risks are subject to change*: Disaster risks vary according to dynamic factors such as population change, increased urbanization and poverty, and environmental exploitation are increasing the exposure and vulnerabilities of people, while climate change will increase many hazard types. In addition, our knowledge of the risks is changing owing to improved information about hazards, exposures and vulnerabilities both from ongoing data collection and research and from empirical evidence following disasters.
- *Social influences*: Priorities for attention of a particular state or community are shaped and continually redefined by the changing perceptions of government, opinion makers, media and community and the values and beliefs of a society, affecting views on what events and actions are hazardous, how hazardous they are, which groups are most at risk, and the relative public and private responsibility for risk reduction activities.

2.2 The Millennium Development Goals

The request in the Hyogo Framework to develop indicators, in paragraph 33(c), states that the indicators generated should be in conformity with internationally agreed development goals, including those contained in the Millennium

[12] See http://www.unisdr.org/eng/library/lib-terminology-eng%20home.htm

Declaration, i.e. the Millennium Development Goals (MDGs). This recognises the important link between disaster reduction and sustainable development, which are mutually reinforcing objectives, as well as the practical advantages of consistency with the extensive efforts to implement the MDGs.

Disasters threaten hard-won development gains and compromise current and future resources upon which societies and future generations depend. Disaster risk reduction helps to protect development investments, livelihoods, environmental assets and social capital. It can play a critical role in ensuring achievement of development priorities, including the MDGs. Conversely, it is important that development efforts undertaken to achieve MDGs do not create new or increased disaster risks. Disaster risk reduction must be part and parcel of development actions towards achieving MDGs.

The actors involved in monitoring disaster risk reduction, namely Governments and their multiple stakeholders, and regional and international organizations are already heavily engaged in reporting on the implementation of the MDGs and the various agreements, conventions, and programs related to sustainable development[13]. For these various reasons, it is very desirable that work on the indicators for the Hyogo Framework is well integrated with processes to monitor the MDGs and other internationally-agreed development goals and makes as much use as possible of existing information processes for reporting development progress. Considerable practical experience has been developed with respect to monitoring progress on the MDGs and this should be drawn upon to the greatest extent possible when formulating indicators for disaster risk reduction[14].

An analysis of the linkages between the elements of the Hyogo Framework and the specific MDGs is available in Annex 4 of this guide. Additionally, information on the links between MDGs and disaster risk reduction will be continually updated on the ISDR website[15]. The Annex presents a more detailed discussion of how the MDGs are linked to disasters and disaster risk reduction and suggests several ways to incorporate disaster risk reduction into MDG actions.

Specific measures on incorporating disaster risk reduction into areas of intervention to ensure that MDG-based needs assessments are sensitive to reducing risk, is included in the accompanying CD, under Annex 6.

It is suggested that existing indicators and benchmarks for measuring progress on the MDGs could be slightly altered to assist States also to monitor achievements on disaster risk reduction and some possible targets and indicators are proposed[16].

[13] As an example see UNESCAP: 2006 Workshop on Statistics for Monitoring the Achievement of the MDGs in Asia and the Pacific http://www.unescap.org/stat/meet/MDG2006/index.asp and <http://www.un.org/special-rep/ohrlls/sid/default.htm>.

[14] For information on the MDGs, see the MDG web pages http://mdgs.un.org/unsd/mdg/Default.aspx

[15] See ISDR web pages http://www.unisdr.org/eng/mdgs-drr/link-mdg-drr.htm

[16] For more information on suggested measures, consult the web site http://www.unisdr.org/mdgs-drr-dialogue.

3. Technical Guidance on Indicators and Benchmarks

3.1 Nature of indicators

Indicators are defined here as an explicit measure of an important factor relevant to the subject of interest, in this case disaster risk and its reduction, where the indicator can be used to monitor changes in the status of that factor and thereby to monitor progress towards a desired outcome (in this case reduced disaster risk).

Indicators are primarily a management tool – they provide a means for measuring what is actually happening against what has been planned for or hoped for, and hence offer insight into the effectiveness of a policy or programme, in terms of quality, quantity and timeliness, as well as any unintended consequences.

Indicators may be created for the different stages of implementation, as follows[17]:

- *Indicators of inputs* – to measure the financial, administrative and regulatory resources being applied, such as budgets expended, or the staff time applied.
- *Indicators of outputs* – to measure the immediate and concrete deliverables achieved with the inputs, such as houses strengthened, or the number of people trained.
- *Indicators of results* – to measure the results at the level of beneficiaries, in social and economic terms, such as the fraction of population receiving early warnings, or with houses free from flooding risk.
- *Indicators of impact* – to measure the overall impact on the society, such as reduced vulnerability to hazards, or security of livelihoods. The Hyogo Framework's expected outcome and strategic goals fall into this category.

Different actors need different indicators, depending on their role with respect to the policy or programme. There is particular need for donors and Governments to focus on the level of results, as this is the level that can be incorporated into ongoing planning processes, where achievements can be made and measured in reasonable periods of time, and where desired achievements can be recognised by planners and the public alike.

3.2 Quantifying the indicators

Indicators need to be quantifiable to have value in a monitoring or assessment oriented process. In some cases the factor is readily measured, such as "the number of deaths arising from natural hazard events". A death is an unequivocal result and the community involved usually knows very well if a death has occurred. Death totals can be counted by official processes to provide a numeric indicator.

The indicator "A national multi-sectoral platform for disaster risk reduction exists" is also a quantitative indicator, but its value is "binary" – defined by either "yes" or "no". Provided a clear definition of such a platform exists, an official will usually be able to say if a platform exists or not. At the same time, the nature and effectiveness of the platform are qualitative characteristics and cannot be deduced from the mere existence of a platform.

Many of the important factors for which indicators are required will be rather qualitative. Consider the potential indicator "Dedicated and adequate resources are available to implement disaster risk reduction plans at all administrative levels." Its value can only be "yes" or "no", but either of these answers could be misleading, since for example a country with 95% compliance would still need to report "no". One way to address this problem is to

[17] OECD 2002. Guidelines for the use of indicators in country performance assessment. Room Document 3, DAC Development Partnership Forum: Managing for Development Results and Aid Effectiveness. Prepared by the European Commission, Brussels, November 2002.

[18] See Twigg, 2004; Cardona (2003) drawing from PAHO (2001); UNESCO/World Water Assessment Programme (Tokyo Case Study).

qualitatively assess the indicator using a graduated 5-point scale from "no/minor progress" through to "full/ substantial achievement". In this way, the qualitative characteristics become quantified, albeit only on this coarse 5-point scale. Further information on this assessment tool approach is provided in section 3.6.

3.3 Characteristics of good indicators

When choosing sets of indicators, it is very important to select a limited number of indicators that focus on the most essential aspects of the matter at hand and that can be readily implemented and sustained over many years. Having many indicators that overlap can lead to difficulties of interpretation, confusion and a weakening of managerial action.

Since the indicators need to have credibility with many stakeholders, it is desirable to involve the stakeholders in the process of choosing the indicators. Likewise, in order to obtain the maximum benefit from the use of the indicators, it is desirable to involve the stakeholders in dialogue on their interpretation and evaluation.

Experience and research shows that there are certain characteristics that contribute to the quality of an indicator[18], as outlined below. Note that some of these characteristics overlap others to some extent. In practice, indicators need not contain every characteristic. Depending on the indicator's nature and use, only a subset may be relevant.

Attainable:	The measurement of the indicators should be achievable by the policy or project, and therefore should be sensitive to the improvements the project/policy wishes to achieve.
Clarity/Validity:	Indicators should effectively target the factor which they are measuring, and should avoid ambiguity and arbitrariness in the measurement.
Comparability:	The indicator measurement should enable comparison over the different life-cycle stages of the policy or project, as well as between different policies or projects.
Comprehensibility:	The definition and expression of the indicator should be intuitively and easily comprehensible to users.
Cost:	The cost of collecting and processing the data needed for the chosen indicators should be reasonable and affordable.
Currency:	Indicator information should be as up to date as possible, to reflect current or recent circumstances. The impact of delays between collection and use should be considered and factored into the analysis, where necessary using extrapolation techniques.
Measurable:	Indicators should be defined so that their measurement and interpretation are as unambiguous as possible, preferably using data that is readily available, relevant, reliable and meaningful.
Redundancy:	While each input variable should measure a discrete phenomenon, separate indicators that measure the same phenomenon may be necessary and desirable.
Relevance:	Indicators should be directly relevant to the issue being monitored or assessed, and should be based on clearly understood linkages between the indicator and the phenomena under consideration.
Reliability:	The results from an indicator should be replicable by different researchers using standard methods. The methods should be stable over time and as valid in as wide a circumstance as possible.
Sensitivity:	Indicators should be able to reflect small changes in those things that the actions intend to change.
Social benefits:	Applicable indicators should reveal net social benefit whether or not social benefit is maximized.
Time-bound:	The time of an indicator's measurement, or the interval to which it applies, should be appropriate and clearly stated.

[18] See Twigg, 2004; Cardona (2003) drawing from PAHO (2001); UNESCO/World Water Assessment Programme (Tokyo Case Study).

3.4 Benchmarks, targets and trends

A benchmark is a reference point or standard against which progress or achievements may be measured, or a target that is desired to be achieved. Benchmarks can be set for any indicator. For example, a benchmark for early warning of tropical cyclones could be "At least 90% of people learn of the warning within 3 hours of its issuance". A benchmark can only be established after an assessment or historic review of relevant data or well-established indicators, usually using some process that has government and academic support and therefore that provides authority and technical credibility. Ideally, a benchmark should describe a significant feature of risk or its reduction, whose achievement is of high public and professional interest.

The use of benchmarks for disaster risk and disaster risk reduction is not very common. Partly this is because the field of disaster risk reduction is itself not well developed. However, there is sufficient data on disaster loss and disaster risk to begin work on formulating suitable benchmarks for these factors. In sectors such as land management, education, early warning and evacuations, benchmarks could be readily formulated for risk reduction activities. In some cases an indicator itself can be chosen to be a benchmark, with a binary indicator such as "Post-disaster reviews are routinely undertaken to learn and apply experiences for risk reduction".

Targets are directly linked to benchmarks. When an authority sets or proposes a target of say "halving the number of deaths from disasters" this in effect sets two benchmarks, firstly an initial benchmark equal to the current annual number of deaths from disasters, and secondly, a benchmark of exactly half this initial benchmark. Benchmarks create a clear point of reference for commitment and achievement, but they need to be based on the establishment of the initial situation and on good analysis of the available data and should reflect realism in what can be achieved, both technically and politically. Gathering comparative data on the value of each indicator before starting the implementation of actions would allow establishing reasonable performance targets and would make possible measuring the degree of changes that might take place as a result of implementation of disaster risk reduction interventions.

To monitor progress means to monitor changes or trends – hopefully improving trends – over time. Indicators can be used to monitor progress over time and to detect trends in factors, but only if they are based on stable and reliable statistics and methods, and are sufficiently precise for the time period over which progress is being measured. For example, if an annually determined indicator is only reliable to say 10% of its value, it would take several years of such measurements to demonstrate an improving trend of 10% per year. The analysis of progress and the detection of trends often require considerable statistical expertise such as from experts in national statistical offices or university statistics departments. It is thus also important to collect information on the achievement level of the processes initiated in the country (region or international level) at the beginning of the period to be monitored.

In some instances, states have already undertaken vulnerability assessments at the national and city-specific level, with the support of external partners, using relevant indicators that can serve as benchmarks[19].

3.5 Data resources for indicators

As noted above, the cost of collecting and processing the data needed for the chosen indicators should be reasonable and affordable. Costs can become very large if the information needs to be gathered frequently or in detail over large geographical areas or large populations.

Existing indicators should be used first if possible, since they are available at small marginal cost, are familiar to stakeholders, and their meaning and value are likely to be well known. Similarly, when formulating new indicators, it

[19] An example is the Program of Indicators of the Inter-American Development Bank (IDB) and the Instituto de Estudios Ambientales (IDEA) of the Universidad Nacional de Colombia, which has developed an assessment methodology to measure key elements of countries' vulnerability to natural hazard events and the performance of different risk management policies and tools. This supports improved access by decision-makers to appropriate data and methodologies needed to reduce and manage disaster risk at the national level. Another example is the Earthquake Megacities Initiative (EMI) an NGO partnering with some of the world's largest cities to define seismic vulnerability and prepare risk reduction plans.

will be most efficient to select indicators that can draw on available data sources, particularly national statistics.

Guidance on developing necessary data resources for disaster risk reduction can be found in the ISDR publication "Words into Action: A Guide for Implementing the Hyogo Framework", in particular its Task 2.1: "Review the Availability of Risk-Related Data and the Capacities for their Collection and Use".

An important foundational capacity for every country is its database on losses and impacts of disasters. This requires the systematic assembling of data on past and ongoing disaster events, with each event having records of dates, location, deaths, economic losses, number of people affected, etc, and a suitable archiving system to maintain the records and allow easy access. Several international or regional organisations collect and operate such databases[20] and can provide not only historical data for countries, but also technical advice and support to capacity building. The quality of the data provided by international sources actually depends on the efforts that countries make for improving their own information. This highlights the importance of developing national databases and information systems for disaster relevant data. Annex 11 contains some instances of useful data collection at the national level (worksheets 1a and 1b).

For example, UNDP's Global Risk Identification Programme (GRIP) provides information on expected losses and the ProVention/World Bank/Columbia University Disaster Risk Hotspots Project data on expected mortality risk per unit population, total economic losses per unit GDP and as a percentage of GDP per unit area. Both initiatives provide information concerning the extent of exposure to hazards that can assist in the analysis of trends in vulnerability reduction.

There are also existing international databases that stretch back several decades for some countries and are maintained and continually updated. The EM-DAT is one example and is maintained by the Centre for Epidemiology of Disasters (CRED)[21], in Brussels, Belgium. CRED obtains its data from a variety of sources, particularly from national sources, the media, Red Cross Red Crescent Societies and other relief agencies.

A key element of the indicators is the statistical definition of a disaster. For a disaster to be entered into the EM-DAT database at least one of the following criteria must be fulfilled: (i) 10 or more people have been reported killed; (ii) 100 people have been reported to be affected, (iii) a declaration of a state of emergency has been issued, or (iv) a call for international assistance has been made. Further definitions relevant to the EM-DAT database may be found on the webpage http://www.em-dat.net/criteria.htm.

The DESINVENTAR database on disasters maintained in Latin America, and more recently in Asia is another important source of data on disaster losses.

3.6 Five-level assessment tool for qualitative characteristics

As earlier noted, some indicators cover factors that are qualitative in nature and therefore require qualitative assessment. In social research, assessment schemes using five equal steps are often used for converting qualitative characteristics into quantitative values. The following table provides a generic scale of five achievement levels and is proposed as an assessment tool for measuring such indicators. The Table also includes examples of the application of the assessment tool to the possible indicator "*A strategy for data provision for disaster risk reduction is in place*".

[20] Including CRED, at http://www.cred.be, and Disaster Loss Inventories (DesInventar) http://www.desinventar.org,
[21] See www.cred.be, and http://www.em-dat.net

Table 1: Five-level assessment tool for use in grading achievement of qualitative factors in indicators

Level	Generic description of achievement	Examples of an assessment of the indicator "A strategy for data provision for disaster risk reduction is in place"
5	Comprehensive achievement has been attained, with the commitment and capacities to sustain efforts at all levels.	"Systematic, properly resourced processes for data collection and dissemination are in place, with evaluation, analysis and improvements being routinely undertaken. Plans and commitments are publicised and the work is well integrated into other programmes."
4	Substantial achievement has been attained, but with some recognised deficiencies in commitment, financial resources or operational capacities.	*"Processes for data collection and dissemination are in place for all hazards and most vulnerability factors, but there are shortcomings in dissemination and analysis that are being addressed."*
3	There is some commitment and capacities to achieving DRR but progress is not substantial.	*"There is a systematic commitment to collecting and archiving hazard data, but little awareness of data needs for determining vulnerability factors, and a lack of systematic planning and operational skills".*
2	Achievements have been made but are relatively small or incomplete, and while improvements are planned, the commitment and capacities are limited.	*"Some data collection and analysis has been done in the past, but in an ad hoc way. There are plans to improve data activities, but resources and capacities are very limited."*
1	Achievements are minor and there are few signs of planning or forward action to improve the situation.	*"There is little awareness of the need to systematically collect and analyse data related to disaster events and climatic risks."*

The generic descriptions of the 5 levels may require refinement to better reflect users' perceptions and to ensure the levels properly cover the range of possibility in equal steps. They also may need to be tailored to the actual indicator, to make them more relevant to the circumstances of the indicator.

Potential institutional users of this five level assessment tool might also be interested to refer to the 2005 Tearfund publication on M*ainstreaming disaster risk reduction* where a similar tool has been suggested for assessing institutional progress with mainstreaming disaster risk reduction.

An indicative table of criteria to illustrate the qualification of achievement for each of the five levels of progress is included in Annex 5.

4. Indicators for the Hyogo Framework's Main Elements

4.1 Need for common indicators

While it is important to develop national capacities to design and implement indicators tailored to national settings, it is also necessary to develop internationally common indicators that enable globally-consistent long term tracking of progress on disaster risk reduction and on the implementation of the Hyogo Framework. The adoption of common indicators will also bring the benefit of standard, well-tested data collection methodologies that all countries can make use of.

Accordingly, this section proposes the following specific indicators for planning and monitoring activities undertaken for each of the Hyogo Framework's main high-level elements – namely it's overall "expected outcome", its three "strategic goals", and its five "priorities for action".

The indicators outlined for each of the Hyogo Framework's elements, could be binary ("yes" or "no") indicators, but in many cases it will be necessary to make use of an assessment tool, such as the 5-level assessment tool described in the previous section, to generate a value for the indicators. Methodologies will need to be developed for each of the indicators.

4.2 Proposed indicators for Hyogo Framework's expected outcome

Expected Outcome	Recommended Indicators
The substantial reduction of disaster losses, in lives and in the social, economic and environmental assets of communities and states	i. Number of deaths arising from natural hazard events ii. Total economic losses attributed to natural hazard events iii. Number of people affected by natural hazard events

Strengthening efforts in data collection at the national and local levels is an important starting point to accurately inform disaster loss information databases maintained at the national, regional and international levels.

National authorities can contribute and access disaster loss data from existing international databases (see section 3.5). For instance, many cooperate directly with CRED to improve the quality of both archived data and ongoing data collection.

The three indicators chosen above, cover loss of lives and economic assets and reflect a general measure of social impacts. However, they do not cover very well the loss of livelihoods or environmental assets – reliable indicators for these factors require further methodological development.

Further information on necessary data for indicators relevant to the Hyogo Framework's expected outcome can be obtained from a number of widely-available annual and disaster-specific reports – these are referred to in section 3.5 above, and listed in the *References*.

4.3 Proposed indicators for Hyogo Framework's strategic goals

Strategic Goal	Recommended Indicators
1: The integration of disaster risk reduction into sustainable development policies and practices.	i. National development plans include elements which address disaster risk reduction. ii. All international plans and programmes such as; a. poverty reduction strategies, b. common programming tools of the UN and international agencies, c. climate change adaptation plans and strategies, d. and donor supported country development assistance programmes include elements which address disaster risk reduction.
2: Development and strengthening of institutions, mechanisms and capacities to build resilience to hazards	i. A national policy framework for disaster risk reduction exists, that includes policies, plans and activities for national to local administrative levels ii. A national multi-sectoral platform for disaster risk reduction is functioning iii. Dedicated and sufficient resources are available for planned activities to reduce disaster risks.
3: The systematic incorporation of risk reduction approaches into the implementation of emergency preparedness, response and recovery programmes.	i. The national policy framework incorporates disaster risk reduction into the design and implementation of emergency, response, recovery and rehabilitation processes. ii. Post-disaster reviews are routinely undertaken to learn lessons on risk reduction and these lessons are incorporated into plans and preparedness for response.

The indicators proposed above for the Hyogo Framework strategic goals are aligned with the main elements of the text of the Framework associated with each strategic goal. It is inevitable that indicator sets will be somewhat arbitrary in formulation and may need to be refined in due course. Countries may need to examine each indicator and its wording to asses its appropriateness to the country's disaster risk reduction context.

The indicators are written as national level measures, but in principle, it should be possible to develop similarly worded indicators for administrative sub-units and in some cases even for the community level. This will be important especially given that most progress on risk reduction needs to be achieved at the local level, and that many national level indicators must be tested and built up by aggregating local level progress.

A tool to support how relevant indicators chosen to assess the status of implementing the strategic goals is provided under Annex 9, in the accompanying CD.

A recent application to monitor progress against the indicators for the five priorities for action has been developed by the ISDR secretariat and can be found in an online "HFA Monitor" tool – enclosed as Annex 10 in a worksheet format. The "HFA Monitor" is intended to be a comprehensive monitoring and reporting tool which will be launched in mid-2008, to capture progress made across the national, regional and international levels in achieving disaster risk reduction priorities outlined by the Hyogo Framework. Further guidance on responsibilities of states, regional institutions and international organisations with respect to this monitoring and reporting process in 2008 can be found in the accompanying CD under Annex 10. National focal points for the implementation of the Hyogo Framework will be informed of upcoming progress review and reporting requirements in 2008.

4.4 Proposed indicators for Hyogo Framework's Priorities for Action[22]

Priority for Action	Recommended Indicators
1: Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation	i. National institutional and legal frameworks for disaster risk reduction exist with decentralized responsibilities and capacities at all levels. ii. Dedicated and adequate resources are available to implement disaster risk reduction plans at all administrative levels. iii. Community participation and decentralization is ensured through the delegation of authority and resources to local levels. iv. A national multi-sectoral platform for disaster risk reduction is functioning.
2: Identify, assess and monitor disaster risks and enhance early warning.	i. National and local risk assessments based on hazard data and vulnerability information are available and include risk assessments for key sectors. ii. Systems are in place to monitor, archive and disseminate data on key hazards and vulnerabilities. iii. Early warning systems are in place for all major hazards, with outreach to communities. iv. National and local risk assessments take account of regional/ trans-boundary risks, with a view to regional cooperation on risk reduction.
3: Use knowledge, innovation and education to build a culture of safety and resilience at all levels.	i. Relevant information on disasters is available and accessible at all levels, to all stakeholders (through networks, development of information sharing system. ii. School curricula, education material and relevant trainings include risk reduction and recovery concepts and practices. iii. Research methods and tools for multi risk assessments and cost benefit analysis are developed and strengthened. iv. Country wide public awareness strategy exists to stimulate a culture of disaster resilience, with outreach to urban and rural communities.
4: Reduce the underlying risk factors[23].	i. Disaster risk reduction is an integral objective of environment-related policies and plans, including for land use, natural resource management and climate change adaptation. ii. Social development policies and plans are being implemented to reduce the vulnerability of populations most at risk. iii. Economic and productive sectoral policies and plans have been implemented to reduce the vulnerability of economic activities. iv. Planning and management of human settlements incorporate disaster risk reduction elements, including enforcement of building codes. v. Disaster risk reduction measures are integrated into post-disaster recovery and rehabilitation processes. vi. Procedures are in place to assess disaster risk impacts of all major development projects, especially infrastructure.
5: Strengthen disaster preparedness for effective response at all levels.	i. Strong policy, technical and institutional capacities and mechanisms for disaster management, with a disaster risk reduction perspective are in place. ii. Disaster preparedness plans and contingency plans are in place at all administrative levels, and regular training drills and rehearsals are held to test and develop disaster response programmes. iii. Financial reserves and contingency mechanisms are in place to enable effective response and recovery when required. iv. Procedures are in place to exchange relevant information during disasters and to undertake post-event reviews.

[22] These indicators derive from the Hyogo Framework and align with those recommended by the ISDR publication Words Into Action: A Guide for Implementing the Hyogo Framework. See http://www.unisdr.org/eng/hfa/docs/Words-into-action/Words-Into-Action.pdf

[23] Users are encouraged to apply the indicators where applicable and relevant to the national and local contexts. If there are areas that are relevant, but not explicitly mentioned here, users are encouraged to develop 'additional' and 'contextual' indicators. Support and further resources are available in Annex 2 and 3.

Each of the indicators needs to be examined in the individual national context and adjusted accordingly, while still adhering to the objective of a common internationally comparable set of indicators.

The general comments made above with respect to the indicators for the Strategic Goals also apply to the indicators for the Priorities for Action, and in some instances the indicators are common. However, while the indicators for the Strategic Goals focus solely on national-level actions, the indicators for the Priorities for Action can be formulated for local and regional levels as well.

4.5 Additional indicators

The indicators listed above address the foundations of an effective and well-integrated national disaster risk reduction programme oriented to implementing the Hyogo Framework. Many other indicators could be formulated, for example to track particular issues of concern, such as the status of vulnerable groups, sensitive ecosystems or settlements, or particular policy objectives, in which case more detailed indicators are likely to be necessary to adequately assess the desired achievements. Subject areas for additional indicators might include the Millennium Development Goals, climate change, governance, corruption, gender equality and other specific development issues related to risk reduction.

Countries are encouraged to explore options for identifying and applying relevant and 'additional' indicators in areas of concern. The intention at the national and sub regional level will be to develop indicators tailored to specific disaster risk reduction and recovery projects, programmes and policies. If the data resources are readily available, an indicator may be simple to establish. To provide further guidance on possible additional indicators, Annex 2 lists a variety of indicators against the different elements of the Hyogo Framework.

Another source of information that may be useful is the ISDR secretariat database on commitments and initiatives toward implementing the Hyogo Framework. It is available for review, and for further updates through the Prevention Web site at: http://www.preventionweb.net/english/hyogo/framework/projects-initiatives.

4.6 Indicators for regional and international level use

The indicators developed at national level can be aggregated by standard means to provide regional and international indicators, assuming there is sufficient commonality of data type and methodology among countries. National indicators for the expected outcome (deaths, economic losses and people affected) can be simply added for the different countries. Relative indicators also can be calculated if desired, such as fatalities per 100,000 population, or losses per capita or per unit gross domestic product.

The indicators for the Strategic Goals and Priorities for Action can be aggregated as counts of the number of countries reporting "yes" or "no" to the indicator, or if they are recorded against the five-level scale, as averages of the levels recorded or counts of countries reaching a particular level of achievement, e.g. level 4 or higher. Totals can be expressed as percentages if desired, as in for example, "50% of countries report the existence of a functioning national platform", or "90% of communities have access to early warnings". For suggestions on indicators for regional or international use, see Annex 3.

If national indicators and methodologies differ greatly among countries, it may not be possible to formulate an adequate regional or international aggregate indicator. However, if the differences are not great, a wider definition that encompasses the range of differences may be feasible. For example, if some countries have an indicator for national early warning systems while others have an indicator for community warning systems, these might be combined into a single regional or international composite indicator on early warning capacities.

Care needs to be exercised when transposing or interpreting national data and indicators, to ensure that proper consideration is given to the particular national circumstances such as data definitions, hazard characteristics, available resources and technical capacities, social factors, and language.

International organisations are increasingly developing and using indicators to monitor and manage their investments and programme activities in disaster risk reduction. For example, the World Bank's Global Facility for Disaster Risk Reduction and Recovery and UNDP's Bureau for Crisis Prevention and Recovery are currently drafting indicator sets and frameworks to monitor institutional performance, while member organizations of the Inter-Agency Standing Committee (IASC) on humanitarian matters are developing indicators relevant to their operations. Efforts are being made by these and other members of the ISDR system to secure as much consistency as possible among the different indicator sets. This is desirable to ensure comparability among indicator data and to reduce the burden of data collection and analysis, much of which necessarily is done by partners in countries.

5. First Steps Towards Developing and Using Indicators

5.1 Process for selecting and developing indicators

At the outset, it is worth noting that a primary reason for establishing indicators is to monitor achievements on disaster risk reduction and to be able to assess what has been done with regard to disaster risk reduction and why this is important to meeting sustainable development goals. Therefore, the approach must be one that the country chooses and implements, in order to pursue its priorities and initiatives in disaster risk reduction, and the methodology provided here should be regarded not as a rigid process but as a set of tools, information, and suggested tasks that can help a country achieve its aims.

This section presents a generic process for selecting an indicator, either from existing sources or indicators or as a new indicator. Drawing on the most useful aspects of the numerous methods available, this suggested process provides an accessible, systematic and transparent course of action for organisations seeking to create useful measures of progress, adapted as necessary to the needs of individual countries. At each stage of the process, the organisation should monitor and review the actions taken and consult with stakeholders, adjusting its activity as appropriate in response.

Step 1: *Identify and define a key issue or problem related to disaster risk reduction.*
Step 2: *Identify what information is required to monitor and evaluate the issue, actions taken to address it, and key achievements.*
Step 3: *Identify existing indicators that could potentially capture this information in a measurable form.*
Step 4: *Evaluate these indicators according to their relevance to policy, programme and project initiatives, their specificity in terms of hazard, population affected, the practicality of their data collection and measurement, and any other relevant characteristics.*
Step 5: *If existing indicators are not suitable, develop additional indicators and subject these to the same review described above in Step 4.*
Step 6: *Choose the most useful indicators for the circumstances. Decide on and define the methodology for applying the indicator, including the necessary processes for data collection, storage and analysis.*
Step 7: *Implement the indicator programme including data collection and dissemination of results.*
Step 8: *Use the selected indicators to evaluate and direct policy development, program implementation, and project management and operational practice.*
Step 9: *Monitor the indicators' utility for the purposes indicated in Actions 1, 2 and 8.*

It is likely that many countries will implement indicators in a progressive way, moving from those for Expected Outcome, to those for Strategic Goals and then Priorities for Action. In doing so, it may be desirable to adjust the indicators and any benchmarks, in order to make them as relevant and useful as possible in capturing progress related to their changing policies and circumstances. It is recommended that the key stakeholders be consulted as part of such an adaptation process.

5.2 Monitoring and review

The initial selection of indicators is just the start of the process. The task of measuring progress on disaster risk reduction and the implementation of the Hyogo Framework will require continued attention, because even the most effective actions will experience challenges and changes along the way. For this reason, monitoring and review processes are essential, both internally and with partners. Monitoring and review processes help all parties to learn from experiences and to share these with other interested parties. It is recommended that authorities concerned with indicators undertake the following tasks on an ongoing basis:

- Periodically monitor and review the indicators, to ensure that they remain relevant and are properly operational.

- Regularly engage and consult with all stakeholders, to maintain awareness and support for an indicator-guided approach to disaster risk reduction objectives.
- Participate in international and regional consultations on the status and development of indicators, to help secure the quality of national and international activities[24].

By using indicators and systematically monitoring and reviewing achievements, national and other authorities will also greatly facilitate the discharge of obligations to prepare status reports related to disaster risk reduction. The Hyogo Framework sets out several such expectations to ensure ongoing monitoring and review of efforts at all levels.

ISDR secretariat is in the process of initiating a multi-tiered monitoring and progress review mechanism with a view to assess progress in the implementation of the Hyogo Framework across the national, regional and global levels, and for key thematic areas. During the course of April 2008, an online tool will be launched and hosted by the ISDR secretariat online *Prevention Web* to enable countries to conveniently monitor progress in achieving disaster risk reduction and recovery objectives across years.

As a first comprehensive output of this progress review mechanism, analysis on key trends, progress and challenges encountered at the national and regional levels, will be compiled by the ISDR secretariat and presented in the ISDR system's upcoming first biennial Global Assessment Report on Disaster Risk Reduction – to be released in 2009 at the second Global Platform on DRR.

In preparation, the guidance on "Common Reporting on the Progress of the Implementation of the HFA"[25] prepared specifically for the reporting exercise of 2007 (leading to the production of the *Disaster Risk Reduction: 2007 Global Review*), will be updated for the upcoming monitoring and reporting process in 2008. For details on the 'HFA monitor' tool to be launched online *Prevention Web* in mid-2008, see Annex 10.

5.3 Final note on challenges

Identifying and implementing indicators is a complex task that must involve many actors, including individual states, regional and international organizations, local governments, non-governmental organisations and community-based groups. It requires the blending of technical expertise and political and social realities in order to achieve good, usable indicator sets that can remain relevant for a reasonably long term.

Some challenges in working with indicators could be:

- The difficulty of sustaining a long term monitoring programme when the benefits of specific disaster risk reduction initiatives may not become apparent for many years.
- The random and infrequent nature of particular disaster events, particularly catastrophic events, which does not permit annual assessment of the impacts of nationwide risk reduction programmes, and where the large losses of individual events can distort the perceptions of overall disaster risk reduction efforts.
- The difficulty of quantifying the likely impacts of disaster risk reduction measures in advance of actual hazard events;
- The complexity of developing and using indicators in multi-hazard environments, where the vulnerabilities vary by hazard, location, and human circumstances.
- The limited number of factors that indicators can cover, and the potential for the chosen indicators to unduly focus attention on these factors at the expense of other less obvious but important factors involved.
- The tension that may develop between those whose priority is to implement the substantive risk reduction measure and those whose priority is to monitor their progress, and the sensitivity that may occur if the indicators show unfavourable outcomes of particular initiatives.

[24] The Program of Indicators developed by IDB-IDEA enables the depiction of disaster risk at the national level, allowing the identification of key issues by economic and social category thus facilitating the creation of national risk management performance benchmarks (the RMI) in order to establish performance targets for improving management effectiveness. See conceptual framework, project phases, international workshops, outcomes, reports of results and the technical details in the web site http://idea.unalmzl.edu.co.

[25] http://www.unisdr.org/eng/hfa/docs/reporting-guidelines-hfa.doc

These issues require careful thought and wise management. The random characteristics of disasters and disaster losses suggest the need to focus policies and programmes on the vulnerabilities to hazards, and to orient indicators to measure vulnerabilities and their changes rather than disaster losses and their changes. Indicators for losses must remain a key part of the indicator set, but with full recognition that extended periods of time will be required to detect trends in losses and effectiveness of risk reduction programmes.

Another challenge is to integrate and link action on indicators across the various policy frameworks and initiatives, for example across different sectors, between risk reduction and climate change, and between country-driven needs and global reporting and international cooperation needs.

The technical demands of indicator implementation will always remain a challenge. Obtaining measurements and maintaining reliable meaningful data series requires dedicated expertise and resources and can be costly. The data and methodologies upon which indicators and benchmarks depend are inevitably limited and imperfect. Indicators must be recognised as only indicative of the real world, and not the reality itself.

List of Acronyms

ADRC	Asian Disaster Reduction Centre
CCA	(UN) Common Country Assessment
CAP	Country Assistance Plan
CDB	Convention on Biological Diversity
CRA	Community risk assessment
CSD	Commission on Sustainable Development
DesInventar	Disaster Loss Inventories
DFID	Department for International Development, United Kingdom
DRI	Disaster Risk Index
DRR	Disaster risk reduction
EIA	Environmental impact assessment
EM-DAT	The OFDA/CRED International Disaster Database
EMI	Earthquake Mega cities Institute
EWS	Early warning system
GFDRR	Global Facility for Disaster Risk Reduction and Recovery
GIS	Geographical information system
GDP	Gross domestic product
HDI	Human Development Index
IADB	Inter-American Development Bank
IATF/DR	Inter- agency Task Force on Disaster Reduction
IASC	Inter-agency Standing Committee
IDP	Internally-displaced person
IFRC	International Federation of Red Cross and Red Crescent Societies
ISDR	International Strategy on Disaster Reduction
LDCs	Least developed countries
MDGs	Millennium Development Goals
NGO	Non-governmental organization
TRIAMS	Tsunami Recovery Impact Assessment & Monitoring System
OCHA	Office for the Coordination of Humanitarian Affairs (UN)
ODA	Official Development Assistance
PRSP	Poverty Reduction Strategy Paper
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Program
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
SOPAC	South Pacific Applied Geoscience Commission
VCA	Vulnerability and Capacity Assessment
WCDR	World Conference for Disaster Reduction
WHO	World Health Organisation
WSSD	World Summit on Sustainable Development

Glossary[26]

Benchmark: A standard by which something can be measured or judged, a point of reference for measurement.

Common Country Assessment and United Nations Development Assistance Framework (CCA/UNDAF): The CCA is a common instrument of the United Nations system to analyse the national development situation and identify key development issues with a focus on the MD/ MDGs, and other internationally agreed treaty obligations and development goals. The UNDAF is the common strategic framework for the operational activities of the UN system at country level (http://www.undg.org).

Disaster: A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources.

Disaster risk reduction: The elements including a conceptual framework to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development.

Emergency management: The organization and management of resources and responsibilities for dealing with all aspects of emergencies, in particularly preparedness, response and rehabilitation.

Early warning system: A system that links and integrates all elements needed for effective issuance and use of early warnings, including the key elements of prior risk assessment, hazard monitoring, hazard prediction, the preparation and communication of warning messages, and the receipt and proper use of warnings by those at risk. (Note: such integrated, people-centred systems are often more an ideal than a reality.)

Goal: Something worked toward or striven for; the purpose toward which an endeavour is directed; an objective.

Hazard: A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

Hazard resistant standards: Guidelines for building construction that ensure a minimum level of safety for the occupants, given the forces that natural hazards impose on the area governed by the guidelines.

Indicator: An explicit measure used to determine progress; a signal that reveals progress towards objectives; a means of measuring what actually happens against what has been planned in terms of quality, quantity and timeliness.

Land-use planning: Branch of physical and socio-economic planning that determines the means and assesses the values or limitations of various options in which land is to be utilized, with the corresponding effects on different segments of the population or interests of a community taken into account in resulting decisions.

Millennium Development Goals: Eight key goals, supported by all the world's states and its leading development institutions, which together form a global agenda for development

Mitigation: Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards.

[26] The definitions of these terms come from sources including the ISDR online glossary, http://www.unisdr.org/eng/library/lib-terminology-eng%20home.htm, as well as the online dialogue upon which this guide is based, available at: http://www.unisdr.org/HFdialogue/, and both last accessed 19 January 2007.

Monitoring: A continuous function, tracking the actual performance or situation against what was planned or expected according to pre-determined standards.

Multi-sectoral disaster risk reduction platform: A nationally-owned and led mechanism—adopting the form of a forum or committee—that serves as advocate for disaster risk reduction at different levels and contributes with both analysis and advice on action through a coordinated and participatory process. A forum to facilitate the interaction of key development players from line ministries, disaster management authorities, academia, civil society and other sectors around the disaster reduction agenda.

National Development Plan: the principle document guiding a country's development focus and priorities, whose content is reflected in the PRSP, CCA/UNDAF and national MDG report.

National disaster risk reduction policy framework: A framework for national policy on disaster risk reduction provides a well-designed and mutually-reinforcing set of plans and positions by the national government to reduce the risk of disasters, including legislation, planning and resource allocation.

Natural hazards: Natural processes or phenomena occurring in the biosphere that may constitute a damaging event.

Objective: Purpose or goal representing the desired result that a programme or project seeks to achieve.

Poverty Reduction Strategy Papers (PSRPs): Prepared by governments in low-income countries through a participatory process involving domestic stakeholders and external development partners, including the IMF and the World Bank. A PRSP describes the macroeconomic, structural and social policies and programs that a country will pursue over several years to promote broad-based growth and reduce poverty, as well as external financing needs and the associated sources of financing.

Preparedness: Activities and measures taken in advance to ensure effective response to the impact of hazards, including the issuance of timely and effective early warnings and the temporary evacuation of people and property from threatened locations.

Prevention: Activities to provide outright avoidance of the adverse impact of hazards and means to minimize related environmental, technological and biological hazards.

Public awareness: The processes of informing the general population, increasing levels of consciousness about risks and how people can act to reduce their exposure to hazards.

Public information: Information, facts and knowledge provided or learned as a result of research or study, available to be disseminated to the public.

Recovery: Decisions and actions taken after a disaster with a view to restoring or improving the pre-disaster living conditions of the stricken community, while encouraging and facilitating necessary adjustments to reduce disaster risk.

Relief / response: The provision of assistance or intervention during or immediately after a disaster to meet the life preservation and basic subsistence needs of those people affected. It can be of an immediate, short-term, or protracted duration.

Resilience / resilient: The capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing, in order to reach and maintain an acceptable level of functioning and structure.

Risk: The probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between natural or human-induced hazards and vulnerable conditions.

Sustainable development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Target: The specific and intended result to be achieved within an explicit timeframe and against which actual results are compared and assessed.

Vulnerability: The conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards.

Annex 1: Rationale of proposed indicators for Hyogo Framework's Strategic Goals and Priorities for Action.

This annex presents information on the significance of each suggested indicator for the Hyogo Framework for Action Strategic Goals and Priorities for Action. It is suggested that relevant authorities consider using the proposed assessment tool to measure progress on all disaster risk reduction actions where qualitative indicators have been chosen.

HFA Strategic Goals
1. Integration of disaster risk reduction into sustainable development policies and practices
1(i) National institutional and legal frameworks for disaster risk reduction exist with decentralised responsibilities and capacities at all levels. Poverty Reduction Strategy Papers are prepared by governments in low-income countries through a participatory process involving domestic stakeholders and external development partners, including the IMF and the World Bank. Focusing on the protection of the most vulnerable is an efficient strategy to help reduce the overall impact of disasters. Effective disaster risk reduction strategies focus on ways to reduce beneficiaries' vulnerability to natural hazards, including programmes that promote asset enhancement and diversification, a safe environment, social protection, and empowerment through participation in governance.
1(ii) Common Country Assessment and United Nations Development Assistance Framework (CCA/UNDAF) covers elements of disaster risk reduction CCA/UNDAF's strategic planning should include the principal national disaster risk reduction mechanisms, including a multi-stakeholder national platform and development plans. Introducing disaster risk reduction into UN-system development planning and practice will, in the long term, reduce risk resulting from some development activities (such as land use) while protecting development progress.
1(iii) National MDG report includes elements of disaster risk reduction. The national MDG report is a key instrument for mainstreaming disaster risk reduction. The MDG process is an extensive and high-profile international development priority, and therefore an important avenue for mainstreaming disaster risk into sustainable development policies, planning and programming.
1(iv) A national multi sectoral platform for disaster risk reduction is functioning. Engaging the relevant stakeholders in a dialogue about disaster risk reduction will help build a national consensus on the need and priorities for disaster reduction. Such dialogue enhances awareness of hazards, disaster risk and risk reduction. It can empower vulnerable stakholders, including women and the socially and economically disadvantaged, and promote action by local govenrmnets, private entities, women and community groups and other NGOs through information sharing and coalition building. Dialogue can also lead to greater collaboration on risk reduction at the regional level.
1 (v) Donor-supported country development assistance programme documents include elements on disaster risk reduction Donor-supported resource allocation that embeds disaster risk reduction into a country's assistance is necessary. Mainstreaming disaster risk reduction into development assistance is a priority, supported by donors.

2. Development and strenghtening of institutions, mechanisms and capacities to build resilience to hazards
2(i) A national multi-sectoral platform for disaster risk reduction is functioning A multisectoral platform for disaster risk reduction can be defined as a nationally-owned and led mechanism— facilitating the interaction of key development players around the disaster reduction agenda. It also facilitates integration of disaster risk reduction into development policies, priorities and plans. Engaging stakeholders in a dialogue about disaster risk reduction will help build a national consensus on the need and priorities for disaster reduction. Dialogue can also enhance awareness of hazards and risk reduction, and it can empower vulnerable populations. It can also promote action by local governments, private entities, women and community groups and NGOs, through information sharing. Dialogue can also lead to collaboration at the regional level.
2(ii) A national policy framework for disaster risk reduction exists, that includes policies, plans and activities for national to local administrative levels A framework for a national policy on disaster risk reduction should provide a well-designed and mutually-reinforcing set of plans by the national government to reduce the risk of disasters, including legislation, planning and resource allocation. A country's constitution, laws, and governmental system provide the basis to develop plans for disaster risk reduction. Assessing such elements can reveal gaps, resources and linkages that were under-utilised or untapped; a disaster risk reduction policy framework can also guide local governments in its risk reduction policies and strategies.
2(iii) Dedicated and sufficient resources are available for the planned disaster risk reduction activities Resource allocation that embeds disaster risk reduction into an institution's day-to-day functioning is necessary. Mainstreaming disaster risk reduction depends on building the financial capability of organizations to plan and implement disaster risk reduction activities.
3. Systematic incorporation of risk reduction approaches into implementation of emergency preparedness, response and recovery programmes.
3(i) The national policy framework requires the incorporation of disaster risk reduction into the design and implementation of emergency response, recovery and rehabilitation processes The policy framework represents a good mainstreaming tool. Lessons learned from previous disasters should be included into pre-disaster planning in order to avoid past mistakes and address the underlying causes of risk.
3(ii) Post-disaster reviews are routinely undertaken to learn lessons on risk reduction and these lessons are incorporated into plans and preparedness for response Lessons learned from previous disasters should be included into pre-disaster planning in order to avoid past mistakes and address the underlying causes of risk.
HFA Priorities for Action
1. Ensure that disaster risk reduction is a national and local priority with a strong institutional basis for implementation.
1(i) National institutional and legal frameworks for disaster risk reduction exist with decentralised responsibilities and capacities at all levels. A country's constitution, laws, and governmental system provide the basis to develop plans and organizational arrangements for all areas of disaster risk reduction. Assessing such elements can reveal gaps, resources and linkages that were under-utilised or untapped; a disaster risk reduction policy framework can also guide a local government in its disaster risk reduction policies and strategies.
1(ii) Dedicated and adequate resources are available to implement disaster risk reduction plans and activities at all adminitrative levels Dedicated resources refer to funds that are allocated specifically for, and only for, disaster risk reduction. Resource allocation that embeds disaster risk reduction into an institution's day-to-day business is necessary. Mainstreaming disaster risk reduction depends on building the capability of organizations to plan and implement disaster risk reduction activities.

1(iii) Community participation and decentralisation is ensured through the delegation of authority and resources to local levels Such action calls for the promotion of community participation in disaster risk reduction through the adoption of specific policies, promotion of networking, strategic management of volunteer resources, attribution of roles and responsibilities, and the delegation and provision of the necessary authority and resources.
1. (iv) A national multi sectoral platform for disaster risk reduction is functioning. Engaging the relevant stakeholders in a dialogue about disaster risk reduction will help build a national consensus on the need and priorities for disaster reduction. Such dialogue enhances awareness of hazards, disaster risk and risk reduction. It can empower vulnerable stakholders, including women and the socially and economically disadvantaged, and promote action by local governments, private entities, women and community groups and other NGOs through information sharing and coalition building. Dialogue can also lead to greater collaboration on risk reduction at the regional level.
2. Identify, assess and monitor disaster risks and enhance early warning.
2(i) National and local risk assessments based on hazard data and vulnerability information are available and include risk assessments for key sectors National risk assessments allow decision makers and the public to understand the country's exposure to various hazards and its social, economic, environmental and physical vulnerabilities. National risk assessments allow communities to take effective action to reduce risk.
2(ii) Systems are in place to monitor, archive and disseminate data on key hazards and vulnerabilities Data collection and dissemination processes allow decision makers and the public to understand the country's exposure to various hazards and its social, economic, environmental and physical vulnerabilities. Such information, disseminated in an appropriate and timely manner, allows communities to take effective action to reduce risk.
2(iii) Early warning systems are in place for all major hazards, with outreach to communities Assessing capacity of the four elements of early warning (risk knowledge, monitoring and warning service, dissemination and communication, and response capabilities) is the first step to identify areas of weakness and set measures to fill gaps. Early warning systems empower individuals and communities threatened by hazards to act in sufficient time and in an appropriate manner so as to reduce the possibility of personal injury, loss of life, damage to property and the environment, and loss of livelihoods.
2(iv) National and local risk assessments take account of regional / trans boundary risks, with a view to regional cooperation on risk reduction. This action refers to the need to cooperate regionally and internationally to assess and monitor regional and trans boundary risks, exchange information and provide early warnings through appropriate arrangements. This would imply, having standard and accessible information and data on regional disaster risks, impacts and losses.
3. Use knoweldge, innovation and educaiton to build a culture of safety and resilience at all levels
3(i) Relevant information on disasters is available and accessible at all levels, to all stakeholders (through netwoirks, development of information sharing systems etc) Information on disaster risks and protection options, especially to citizens and local authorities in high risk areas, should be easily available and understandable to enable them to take actions to reduce risk, and build resilience.
3(ii) School curricula , education material and relevant trainings include disaster risk reduction and recovery concepts and practices. Incorporating disaster risk-related issues into existing education curricula contributes to continuous learning and reinforces disaster risk reduction knowledge. Educating younger generations instills disaster risk reduction as a value in society. Children are thus effective agents for building a culture of resilience to disasters. Moreover, higher education and applied research are sources of practical endeavours in building disaster reduction capacities and therefore merit special attention. Training activities also provide the opportunity to consider indigenous knowledge and traditional practices.

3 (iii) Research methods and tools for multi risk assessments and cost benefit analysis are developed and strenghtened Authorities at national and regional level have a role to play in strenghtening the technical and scientific capacities to develop and apply methodologies, studies and models to assess vulnerabilities and impacts of hazards, including the improvement of regional monitoring capacities and assessments.
3 (iv) Countrywide public awareness strategy exists to stimulate a culture of disaster resilience, with outreach to urban and rural communities A countrywide public awareness strategy is a national, long-term plan of action with specific goals that organizes how the general population is informed about disaster risk and the ways they can act to reduce their exposure to hazards. Public awareness actions are important tools to help integrate disaster risk reduction into every-day life. Making stakeholders aware of the hazards they are likely to face also helps ensure political commitment to risk reduction measures.
4. Reduce the underlying risk factors
4(i) Disaster risk reduction is an integral objective of environment related policies and plans, including for land use natural resource management and climate change adaptation. Management policies can have beneficial impact on disaster risk reduction, and should explicitly incorporate risk reduction goals and strategies. Many disaster risk reduction actions have environmental benefits, and many environmental practices can provide solutions to reduce vulnerability. When environmental and natural resource policies specifically incorporate disaster risk reduction elements, they can help reduce underlying risk factors
4(ii) Social development policies and plans are being implemented to reduce the vulnerability of populations most at risk – through addressing issues of food secuirty, public health, risk sharing mechanisms, protection of critical public infrastrucute, etc. When public awareness, education, early warning and environmental policies specifically incorporate disaster risk reduction elements, they can help reduce underlying risk factors and reduce the vulnerability of impoverished groups.
4(iii) Economic and productive sectoral policies and plans have been implemented to reduce the vulnerability of economic activities. Focusing on the protection of a state's most vulnerable economic activitieis and productive sectors is an efficient strategy to help reduce the overall impacts of disasters.
4 (iv) Planning and management of human settlements incorporate disaster risk reduction elements, including enforcement of building codes. There is an identified need for the national and local implementation of international post disaster recovery and reconstruction norms and standards.
4(v) Disaster risk reduction measures are integrated into post disaster recovery and rehabilitation processes. There is an identified need for the national and local implementation of international post disaster recovery and reconstruction norms and standards.
4(vi) Procedures are in place to assess the disaster risk impacts of major development projects, especially infrastructure The social impact of a disaster can be reduced by ensuring prompt resumption of these essential facilities. Direct community involvement is essential in all aspects of school and health facility disaster risk reduction. If procedures are in place, it greatly reduces the risks of communities.
5. Strenghten disaster preparedness for effective response at all levels
5(i) Strong policy, technical and institutional capacities and mechanisms for disaster risk management, with a disaster risk reduction perspective are in place. An investment of time and resources in systematically evaluating and subsequently improving disaster preparedness capacities and mechanisms provides states with a substantial increase in readiness and improves disaster preparedness.

5(ii) Disaster preparedness plans and contingency plans are in place at all administrative levels, and regular training drills and rehearsals are held to test and develop disaster response programmes Disaster preparedness and response planning for recovery and rehabilitation efforts should be informed by the lessons learned from previous disasters as well as knowledge of risk reduction measures in order to avoid missing the underlying causes of risk. Disaster risk reduction actions should be required in the design and implementation of both types of planning.
5(iii) Financial reserves and contingency mechanisms are in place to support effective response and recovery when required. An investment of time and resources in systematically evaluating and subsequently improving disaster preparedness capacities and mechanisms provides states with a substantial increase in readiness and improve disaster preparedness.
5(iv) Procedures are in place to exchange relevant information during hazard events and disasters, and to undertake post-event reviews. Emergency preparedness and response as well as planning for recovery and rehabilitation efforts should be informed by the lessons learned from previous disasters. Disaster risk reduction actions should be included in the design and implementation of both types of planning.

Annex 2: Additional possible indicators to assess progress in implementation of the Hyogo Framework

The indicators provided in the following table were developed in 2005 in consultation with a range of experts as part of preliminary efforts to identifying a range of possible indicators to measure progress on different aspects of disaster risk reduction within the context of the Hyogo Framework.

Strategic Goal 1: The integration of disaster risk reduction into sustainable development policies and planning
1. A national platform and coordination mechanism has been created.
2. National platform has an effective structure and function.
3. Progress on sustainable development and achievement of MDGs is related to application of disaster risk reduction in:
(i) CCA/UNDAF and other international common programming tools
(ii) Poverty Reduction Strategy Papers (PRSPs)
(iii) Climate change adaptation plans and strategies
Strategic Goal 2: Development and strengthening of institutions, mechanisms and capacities to build resilience to hazards
1. Number by type of formal education programs related to emergency and risk management.
2. Number by type of sector programs for emergency and risk management.
3. Legislation has been adopted covering (presence or absence of):
(a) Building codes for prevalent natural hazards.
(b) Building inspection practices for code compliance and insurance classification.
(c) Land use planning incorporating hazard zones.
4. Sector (by development area, public and private) functioning as an integral part of national platforms for disaster risk reduction.
Strategic Goal 3: The systematic incorporation of risk reduction approaches into the implementation of emergency preparedness, response and recovery
1. Number by type of internationally certified emergency and recovery management specialists.
2. Incorporation and implementation of international-adopted recovery standards and criteria into reconstruction and recovery programs.

Priorities for Action – Expected results and additional indicators

Priority 1: Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.	
Areas / Expected results	Additional possible indicators per priority area
Multi-sectoral policies and plans / DRR integrated into development policy and planning by countries. Multi-sectoral coordination mechanisms for DRR created and functioning Increased resource allocation for DRR	1. Multi-stakeholder and multi-sector national platform exists. 2. Composition of multi-sector national platform is effective. 3. Disaster risk reduction has been included in the country's CCA/UNDAF. 4. Country has included disaster risk reduction initiatives in MDG reports. 5. Country has included disaster risk reduction in sustainabale development plans/ national development plans. 6. Inclusion of disaster risk reduction policies and strategies in sector policies and plans. 7. Country identifies disaster risk reduction allocations in annual budget. 8. Country receives international cooperation/ODA for issues related to disaster risk reduction. 9. Proportion of official development assistance provided that goes to national disaster risk reduction issues.
Legislation / Legislation adopted or modified to explicitly support disaster risk reduction; Compliance of normative regulations	10. Coverage by type (e.g. hurricane, flood) and objective (e.g. mitigation) of national legislation that has been adopted or modified to support disaster risk reduction. -- Codes and standards exist and are regularly updated. -- Compliance with disaster risk reduction regulations is required by law 11. Coverage by type and objective of national legislation enforcement systems.
Decentralization / Empowered sub-national authorities	12. Location and level by type of responsible designated agencies, institutions and offices for the implementation of enforcement system.

Areas / Expected results	Additional possible indicators per priority area
Community Participation / Community and volunteers empowered and involved in DRR planning and activities Community involvement and the media are engaged in building resilience to disasters Specific mechanisms are developed to engage stakeholders communities and volunteers.	13. Participation by type and objective of NGOs, civil society, volunteers and private sector in national platforms. 14. Coverage by type and objective of disaster risk reduction policies, plans and programmes developed in consultation with NGOs and civil society. 15. One or more national and sub-national events organised on Disaster Risk Reduction Day for public awareness campaigns. 16. Coverage by type and objective of risk management plans that are implemented with involvement of the local community. 17. Coverage by type and objective of assessment of human resources capacity, technical and financial assessments for disaster risk reduction. 18. Presence of identifiable leaders, institutions or collaborations that lead disaster risk reduction activities at the local level; 19. Coverage of disaster risk reduction related activities by media. 20. Disaster reported by media that include racoomandations to reduce disaster risk. 20. Identified means and sources to convey local relevance, community experience or traditional knowledge in disaster risk reduction. 21. Amount of community training and community-based preparedness. 22. State has halved the average of annual casualties by 2015.
Multi-hazard / Multi-hazard approach integrated into disaster risk management policies, planning and programming	24. Coverage by type and objective of risk specific management policies, planning and programming into sector activities. 25. Evidence of multi-hazard approach integrated into risk management policies, planning and programming.
Capacity development / Capacity assessed, supported and strengthened at all levels in all sectors	26. Number of higher-level education degree disaster management programmes. 27. Capacities in disaster risk reduction assessed and reported as basic information for all project and programme development.
Priority 2: Identify, assess and monitor disaster risks and enhance early warning	
Areas / Expected results	Additional possible indicators per priority area
Data, analysis and dissemination / Statistical information is maintained and shared on disaster occurrence, impact and losses.	28. Coverage by type and objective of media markets with programming disaster management awareness. 29. Number by type (cyclone/hurricane, flood, volcanic eruption, tsunami) of national-based early warning systems (EWS). 30. Coverage by type and objective of community vulnerability EWS. 31. Identifiable, accessible and structured record system maintained at national and appropriate sub-national levels to a common and compatible standard. 32. Percentage of development projects and investment based on independent risk and environmental impacts assessments, including in post disaster phases. 33. Evidence of statistical information exchanged at international, regional, national and local levels.

Areas / Expected results	Additional possible indicators per priority area
Vulnerability and disaster risks / Indicators on disaster risks, hazards and vulnerability developed, to assess the impact of disaster on social, economic and environmental conditions at national and sub-national scales.	34. Coverage by type and objective of hazard-specific vulnerability and capacity assessments at the community level. 35. Vulnerability and capacity indicators developed and systematically mapped and recorded. 36. Identifiable programs assessing vulnerability and developing risk scenario. 37. Indefinable programs/centres for hazard monitoring and analysis in institutions such as national hydro-meteorological, seismic, etc.
Risk maps / Risk assessments and maps (hazards/ vulnerability) are current and available to the public.	38. National multi-hazard vulnerability and/or risk mapping is completed. 39. Coverage by type and objective of development projects and investment based on independent risk and environmental impacts assessments, including in post-disaster recovery and reconstruction. 40. Historical record available of hazards and their impacts, climate change and climater variability (catalogues, inventories).
Early waning systems and information management / People centred early warnings developed and communication systems to those at risk reviewed and assessed.	41. Public, professional and technical evaluation made of effectiveness of EWS by hazard type at community level. 42. Robust and extended communication means available throughout areas at risk. 43. Early warning information and alerts reaching populations at risk.
International coordination / International and regional efforts are harmonized for cooperation and support for standards in early warning capacities and procedures	48. National implementation of the recommendations from the Third International Conference on Early Warning outcome document, “Developing Early Warning Systems: A Checklist”. 49. International and regional efforts are underway for standards and cooperation to build early warning capacity. 50. Recognised global authority, standards and procedures exist for consistent motivation of EWS at international and regional level. 51. National implementation of the disaster risk reduction elements in the Mauritius Strategy related to the Small Island Developing States.
Research and analysis / Research, analysis and reporting are undertaken on long-term changes and emerging issues that might increase vulnerabilities and risk exposure	52. Effectiveness of national risk assessment programmes in analysing emerging risk and increased vulnerabilities.
Exchange of data and monitoring at regional level / Regional data information is compiled and exchanged; Trans-boundary hazards are monitored.	53. Coverage by type and objective of trans-boundary hazard assessments. 54. Evidence of international, UN and/or bilateral assistance on the compilation and exchange of data and monitoring on regional risks. 55. Existance of border agreements on areas of shared hazard events.

Additional possible indicators for Priority 3: *Use knowledge, innovation and education to build a culture of safety and resilience at all levels*	
Areas / Expected results	Additional possible indicators per priority area
Public information / Good practises and lessons learnt collected disseminated and used.	56. Extent of state participation in international and regional workshops and meetings related to information sharing and good practices. 57. Quantity of accurate documentation and databases on disasters. 58. Presence and extent of applicable education material. 59. Number of institutions, academic programs and courses focusing on good practices and lessons learnt. 60. Dissemination of literature on disaster risk reduction and protection measures including good practices, lessons learnt, academic programs and course offerings.
Professional vocabulary and commonly agreed concepts / International standard terminology related to DRR is widely used and disseminated.	61. Percentage of publications using international standard terminology related to disaster risk reduction as per ISDR.
Network development and cross-disciplinary interaction / Network among disaster experts is strengthened together with dialogue and cooperation among scientific communities and cross-disciplinary professional interaction.	62. Coverage by type and objective of hazard, sector or disaster risk reduction action-specific professional and public networks related to disaster risk reduction. 63. Multi-purpose data generated. 64. Existence of a national data/information management plan.
Access to advance technology / The use and access of recent information, communication and space-based technologies to support DRR promoted together with the transfer, technical training and information management concerned	65. Coverage by type and objective of hazard, vulnerability and risk information available on GIS, remote-sensing or similar technology-based files. 66. Extent of training offered on the use and advantages of advanced technology.
Formal education and children engagement / Disaster risk reduction knowledge is included in school curricula (primary, secondary and higher education).	67. Coverage by grade level and objective of hazard, vulnerability and risk curriculum as part of school curricula. 68. Number of nationals with advanced degrees related to disaster risk reduction. 69. Disaster risk reduction programmes identified with professional disciplines, institutes and example courses. 70. Extent of the implementation of initiatives related to the UN Decade of Education for Sustainable development.
Professional and multi-sectoral training / DRR training and learning programmes developed targeting specific sectors	71. Coverage by hazard, vulnerability, risk or disaster risk reduction-action type of public sector and community-based training in risk reduction. 72. Development of training courses for field practitioners from the public and private sectors. 73. Development of community-based training. 74. Percentage of women in public sector and community-based training in risk management.

Areas / Expected results	Additional possible indicators per priority area
Analytical research / Improved methods for predictive and multi-risk assessments and socio economic cost-benefit analysis developed.	75. Coverage by sector type and objective of multi-risk assessments, including socio and economic analysis. 76. Existence and scope of national applied-research agenda for disaster risk reduction, with multiple disciplines involved. 77. Evidence of research institutions or departments involved in disaster risk reduction activities.
Priority 4: Reduce the underlying risk factors	
Areas / Expected results	Additional possible indicators per priority area
Environmental management / Environmental management and risk reduction practices are integrated particularly in ecosystem conservation.	78. Coverage by type and objective of natural hazards in environmental impact assessments. 79. Use of wetlands, mangroves and forest management to reduce flood risk. 80. Trends in deforestation rate including mangroves. 81. Use of environmental impact assessments in disaster reduction planning.
Climate variability and change / DRR is integrated with adaptation to existing climate variability and future climate change; Climate related-risk information is collected and applied by decision-makers	82. Disaster risk reduction integrated into climate variability and climate change adaptation planning and programming. 83. Information coverage by type of hazard and risk reduction objective for incorporation of climate variability and climate change risk into project planning and assessments.
Social protection / Social protection and safety nets are identified and promoted for marginalized and undeserved populations	84. Adding classifications and the location of the most vulnerable people to social protection and a safety net. 85. Incorporation of social safety nets and social protection programmes in the recovery processes. 86. Extent of natural hazard insurance coverage for homes, business, agriculture and public infrastructure 87. Access to micro-finance services in high hazard risk areas, evidence of utilization following disasters for recovery and reconstruction. 88. Coverage by hazard type and objective of food security initiatives in areas prone to drought, flood, cyclones and other hazards that can weaken agriculture-based livelihoods.
Public facilities and infrastructures / Critical public facilities and physical infrastructure are protected and strengthened.	89. Coverage by type and location of schools and bridges built with full compliance to adopted natural hazard building codes and zoning requirements. 90. Coverage by hazard type and objective of incorporation of disaster risk reduction management elements into physical planning and infrastructure development procedures. 91. Percentage of official buildings in compliance with standards. 92. Disaster risk reduction is integrated into post-disaster recovery and rehabilitation processes.

Areas / Expected results	Additional possible indicators per priority area
Public Health / Health facilities conform to hazard resistant standards: Reduced social impact of a disaster by ensuring prompt resumption of essential health and other vital facilities.	93. Number/percent by type and location of health facilities in full compliance to adopted natural hazard building codes and zoning requirements. 94. Number of existing hospitals certified as disaster safe. 95. Number/percent by type and location of health facilities certified for a performance level of continuity of service following prevalent natural hazard events. 96. National coverage of hazard zone maps with the location of critical facilities by type.
Public-private partnership / Promotion of public-private partnerships to advance DRR in practice.	97. Coverage by sector and objective of public-private partnerships for disaster risk reduction management to meet acceptable risk levels.
Risk-sharing, reinsurance / Promotion of financial risk-sharing mechanisms and diversified income options for populations in high-risk areas to reduce vulnerability	98. Coverage by sector of hazard insurance. 99. Trends of insurance claims.
Displaced people / Refugees and IDPs programme do not increase risk or vulnerability to hazards.	100. Number annually of natural disaster-triggered refugees and IDPs needing international assistance.
Planning policy and practices / Disaster risk assessments incorporated in spatial and economic development plans and management practices (urban and rural).	101. Coverage by administrative level and type of instrument of land use planning, land use zoning, setbacks, construction codes and standards, and occupancy permits that include natural hazard management and risk reduction elements. 102. Percentage of construction or building projects in floodplains and other mapped hazard-prone areas. 103. Difference between pre-disaster and post-disaster land occupation. 104. Coverage by sector and objective of disaster risk reduction actions in rural development planning.
Normative standards and codes/ Mechanisms which ensure that codes and norms are publicly known and implemented	105. Review by location, sector and citation of non-compliance and resolution of zoning, building code and occupancy permit enforcement related to disaster risk reduction. 106. Existence of specialized legal offices controlling compliance and enforcement.
Recovery / DRR integrated into post-disaster recovery and rehabilitation process.	107. National implementation of international post-disaster recovery and reconstruction norms and standards.

Priority 5: Strengthen disaster preparedness for effective response at all levels	
Areas / Expected results	Additional possible indicators per priority area
Regional approach / Coordinated regional approaches are developed and strengthened.	108. Review of progress on existing regional preparedness mechanisms.
Contingency plans Disaster preparedness and contingency plans prepared and reviewed periodically.	109. Adoption of a national disaster preparedness plan. 110. Coverage by sector of policy frameworks that requires disaster risk reduction incorporation into the design and implementation of emergency response, recovery and rehabilitation processes. 111. Emergency response networks and plans are regularly updated and tested.
Emergency funds Establishment of emergency funds promoted.	112. Coverage by type and support level of identifiable funding and annual budgetary allocations to strengthen preparedness at the local and national levels. 113. Availability of emergency funds and stocks.

Annex 3: Indicators for regional and international level use

The indicators proposed in Section 4 of the main text to measure progress on the Hyogo Framework for Action's Strategic Goals and Priorities for Action can be aggregated from country reports to provide regional and internationally applicable indicators.

The table below illustrates some of the indicators that can be applied by regional and international insittutions working to assist States to reduce disaster risks at the national and local level.

Elements of the Hyogo Framework for Action	Regional /International Indicators
Expected Outcome	
The substantial reduction of disaster losses, in lives and in the social, economic and environmental assets of communities and states	1) Number of deaths arising from natural hazard events 2) Total economic losses attributed to natural hazard events 3) Number of people affected by natural hazard events
Strategic Goals	
Goal 1: The integration of disaster risk reduction into sustainable development policies and practices.	1) Percentage of Poverty Reduction Strategies that include disaster risk reduction initiatives. 2) Percentage of CCA/UNDAF and common internaitonal programing processes including disaster risk reduction elements. 3) Percentage of MDGs including disaster risk reduction elements. 4) Percentage of National Development Plans for sustainable development including disaster risk reduction elements.
Goal 2: Development and strengthening of institutions, mechanisms and capacities to build resilience to hazards.	5) Number of operational national platforms. 6) Number of published national disaster risk reduction policy frameworks. 7) Percentage of national dedicated resources available for disaster risk reduction including sector plans incorporating disaster risk reduction. 8) Percentage of natural hazard events that did not require a disaster declaration (including a request through the United Nations for international assistance).
Goal 3: The systematic incorporation of risk reduction approaches into the implementation of emergency preparedness, response and recovery programmes.	9) Percentage of policy frameworks that require disaster risk reduction incorporation into the design and implementation of emergency response, recovery and rehabilitation processes.
Priorities for Action	
Priority 1. Ensure that disaster risk reduction is a national priority with a strong institutional basis for implementation at the local level.	1) Percentage of existing national legal frameworks. (Also used for goal 2.) 2) Number of operational national multi sectoral platforms. (Also used for goal 2.) 3) Number of published national disaster risk reduction policy framework. (Also used for goal 2.) 4) Percentage of national dedicated resources available for disaster risk reduction. (Also used for goal 2.)

Priorities for Action	
Priority 2. Identify, assess and monitor disaster risks and enhance early warning.	5) Number of national strategies of data provision for disaster risk reduction – including climate change accounted for in risk analysis. 6) Number of national end-to-end early warning systems in existence.
Priority 3. Use knowledge, innovation and education to build a culture of safety and resilience al all levels.	7) Percentage of school curricula including disaster risk reduction elements. 8) Percentage of states with countrywide public awareness strategies for disaster risk reduction.
Priority 4. Reduce the underlying risk factors.	9) Percentage of health facilities and schools conforming to hazard resistant standards. 10) Percentage of states where environmental protection, natural resource management and climate change and adaptation policies include disaster risk reduction. 11) Percentage of states with land-use development plans that include disaster risk reduction elements. 12) Percentage of PSRPs that include disaster risk reduction initiatives. (Also used for goal 1.) 13) Percentage of CCA/UNDAFs including disaster risk reduction elements. (Also used for goal 1.) 14) Percentage of MDG actions including disaster risk reduction elements. (Also used for goal 1.) 15) Percentage of national MDG reports including (under MDG 7 – Target 10) elements of vulnerability reduction for drinking water systems related to natural hazard events.
5. Strengthen disaster preparedness for effective response at all levels.	16) Percentage of policy frameworks that requires disaster risk reduction incorporation into the design and implementation of emergency response, recovery and rehabilitation processes. (Also used for goal 3.) If data on the following is made available at the naitonal level across a sub/region, the correspondent indicators 17 and 18 at the regional level, will be relevant: If all organizations, personnel and volunteers in the preparedness system possess the required technical capacity to carry out essential elements and tasks for effective disaster response? 17) Percentage of states reporting that all organizations, personnel and volunteers in the preparedness system possess the required technical capacity to carry out essential elements and tasks for effective disaster response. 18) Percentage of states who have completed an independent assessment of disaster preparedness capacities and mechanisms, and assigned and resourced responsibility for implementation of recommendations.

Annex 4: Millennium Development Goals (MDGs) and disaster risk reduction

The MDGs and disaster risk reduction activities have mutually-reinforcing objectives. Since states are already reporting on MDG implementation and other MDG activities, it is hoped that they will routinely incorporate information from that process into implementation monitoring and reporting for the Hyogo Framework for Action. Below are several resources to aid in this synthesis.

Table 2 illustrates some of the many and often complex links between disaster risk reduction and the MDGs. Table 3, shows how the goals and priorities of the Hyogo Framework for Action align with the eight specific MDGs.

Refer to tables 4 and 6, in Annex 6 for suggestions on how the MDGs and their indicators can be aligned with disaster risk reduction objectives.

Table 2: Links between disaster risk and Millennium Development Goal targets

Targets of Millennium Development Goals	Direct impacts of disasters on MDG targets	Indirect impacts of disasters on MDG targets	Benefits to MDG targets from disaster risk reduction activities
1: Poverty & hunger	Reduced livelihood sustainability. Reduced health status for individuals.	Fiscal impacts on governments; forced sale of assets. Additional call on health care facilities.	Vulnerability reduction key to tackling poverty Poverty reduction programmes may also reduce vulnerability.
2: Education	Infrastructure damaged; people displaced.	Educational opportunities for students disrupted. Less money for education.	Safer schools; more money for education. Improved education and awareness programmes relevant to disaster risk reduction.
3: Gender	Women left to care; bear brunt of 'coping'.	Domestic violence may increase. Family disruption and break-up may eventuate.	Women better protected, may organise for disaster risk reduction. Awareness programmes allow for pre-emptive action.
4: Child mortality	Children at special risk; health assets damaged.	More orphans and vulnerable children; water, food, medicines are in greater demand.	Children and their health services are better protected.
5: Maternal health	Pregnant women at risk; health assets damaged.	More maternal stress; water, food are in greater demand.	Less stress, better health services for mothers.
6: Diseases	Weakened resistance; health assets damaged.	More exposure to disease after disaster. Reduced capacity to recover from impacts.	Public health risks reduced, assets protected.

7: Environment	Resources and infrastructure damaged.	More move to cities, more pressure on urban services	More commitment to tackling degradation.
8: Partnerships	SIDS ongoing programmes affected by storms, tsunamis.	Impacts on commitment to good governance and development.	Better governance for DRR, more help for SIDS.
All MDGs	Resources reallocated from development to response. Disaster affected communities often trapped in poverty cycles, with less predictable devlopment benefits.		Resources reallocated to mitigation and disaster proof development.

Table 3: Hyogo Framework for Action's components and the Millennium Development Goals

Priorities for Action	Strategic Goals		
	Integration of disaster reduction into sustainable development policy and practice	**Development and strengthening of institutions, mechanisms and capacities to build resilience to hazards**	**Systematic incorporation of risk reduction approaches into the implementation of emergency preparedness, response and recovery programs**
1. Ensure that DRR is a national and a local priority with a strong institutional basis for implementation	MDG#1 eradicating extreme poverty and hunger, food security MDG#7 ensuring environmental stability	MDG#1 eradicating extreme poverty and hunger, food security	MDG#8 develop a global partnership for development
2. Identify, assess and monitor disaster risks and enhance early warning	MDG#1 eradicating extreme poverty and hunger, food security		
3. Use knowledge, innovation and education to build a culture of safety and resilience at all levels	MDG#2 achieving universal primary education	MDG#2 achieving universal primary education	
4. Reduce the underlying risk factors	MDG#1 eradicating extreme poverty and hunger, food security MDG#3 prevention of loss of lives and livelihood and in particular child mortality MDG#7 ensuring environmental sustainability	MDG#4, 5,6 access to clean drinking water and basic healthcare	MDG#1 eradicating extreme poverty and hunger, food security MDG#2 achieving universal primary education MDG#4, 5,6 access to clean drinking water and basic healthcare
5. Strengthen disaster preparedness for effective response at all levels	MDG#1 eradicating extreme poverty and hunger, food security		MDG#2 achieving universal primary education

Annex 5: Indicative criteria for establishing levels of progress for disaster risk reduction

Indicators	Illustration of advancements for each level of disaster risk reduction processes				
	Level 1 No progress has been made and/ or progress has stopped or moved backwards	Level 2 Minor progress achieved in disaster risk reduction actions, with no systematic commitment	Level 3 Institutional commitment to reduction disaster risk, but no substantial progress	Level 4 Systematic commitment at policy level, but insufficient resource allocation	Level 5 Full achievement with sustained commitment
HFA Priority 1: Ensure that Disaster Risk Reduction (DRR) is a national and local priority with strong institutional basis for implementation					
National disaster risk reduction policy framework elaborated	Disaster risk reduction policy framework not elaborated	Disaster risk reduction referred in national plans or sectoral policies	Disaster risk reduction policy framework in process to be formulated with the incorporation of multi-sectoral development instruments	Disaster risk reduction policy framework formally accepted to guide national disaster risk reduction policies	Broad disaster risk reduction framework implemented at different levels (national, sectoral and territorial)
	Disaster risk reduction plan not elaborated	Initiatives for elaborating and institutionalizing disaster risk reduction plans inadequately formulated	Plans at some levels formulated, but with no operationalisation and no evaluation or update	Disaster risk reduction plans in different spheres (national, territorial, sectoral) formulated, but with no evaluation or update	Good technical quality plans at all levels, with the involvement of participating development bodies
Multisectoral disaster risk reduction platform operational	Multi-sectoral disaster risk reduction platform not established or limited to response	Initiatives for establishing a national platform for disaster risk reduction conceptualized, but not implemented	National platform for disaster risk reduction established, but with limited impacts and no incorporation of multi-sectoral development instruments	National platform for disaster risk reduction in place incorporating multi-sectoral development instruments, but coordination and participation further required	National platform for disaster risk reduction established, with main development agencies active in their respective fields
	Multisectoral disaster risk reduction platform not established at sectoral or territorial level or limited to response	Initiatives for establishing sectoral or local platform for disaster risk reduction conceptualized, but not yet established	Some sectoral or local platform for disaster risk reduction established but with limited impacts and no collaboration with relevant multi-sectoral development instruments	Some sectoral, territorial or local platform for disaster risk reduction in place with many multi-sectoral development instruments incorporated but not totally institutionalized as a practice	Many sectoral and local platform for disaster risk reduction established, with the main development agencies active in their respective fields
Disaster risk reduction legal framework elaborated	Disaster risk reduction legal framework not elaborated	References on disaster risk reduction in the Constitution or the legislation (such as an environmental protection act), but scattered	Some juridical foundations for establishing a legal framework for disaster prevention exist, but still too generic	Clear legal framework elaborated, but with some gaps preventing the widespread promotion of disaster prevention activities across all territorial and sectoral boundaries	Well developed legal framework that links risk reduction with all aspects of development activities in place

Annex 5: Indicative criteria for establishing levels of progress for disaster risk reduction (*continued*)

Indicators	Illustration of advancements for each level of disaster risk reduction processes				
	Level 1 No progress has been made and/ or progress has stopped or moved backwards	Level 2 Minor progress achieved in disaster risk reduction actions, with no systematic commitment	Level 3 Institutional commitment to reduction disaster risk, but no substantial progress	Level 4 Systematic commitment at policy level, but insufficient resource allocation	Level 5 Full achievement with sustained commitment
Dedicated resources for disaster risk reduction allocated	No budget for disaster risk reduction	Scattered initiatives for funding prevention efforts exist, but generally related to international assistance	Some budgetary channels for institutional strengthening and specific projects created, but no permanent. Promotion of international cooperation for this purposes	Several stable funding lines available for institutional strengthening and preventive actions, but disaster prevention still not fully internalized in operational plans and everyday management	Many lines of funding available for disaster prevention activities as part of sustainable development plans. Annual budgets incorporate disaster reduction
HFA Priority 2: Identify, assess and monitoring risk and enhance early warning					
Structured process of Research on existing hazards, including the elaboration of hazards maps, in place - Earthquakes, Floods, Drought, Volcanic eruptions, Landslides, El Niño, Hurricanes, Typhoons, Fires	No hazard research or only fragmentary and incomplete research and based on historical records alone	Ongoing efforts to build the first comprehensive database on areas at risk (hazards maps), but updating of the information not yet considered; problems with quality and information resolution	Existence of hazard database, but incomplete; with irregular updating; persisting significant problems with quality and information resolution	Extensive database of areas at risk created with adequate information incorporating some advances in man-made hazard assessment with no geographical information system in place yet, but the database regularly updated by assessing new hazards or changes in patterns, the quality and information resolution may still be improved	Comprehensive geographical information system on hazards and areas at risk exists; regularly updated; with high quality and high resolution. Consideration both of man-made and natural hazards

Annex 5: Indicative criteria for establishing levels of progress for disaster risk reduction (*continued*)

Indicators	Illustration of advancements for each level of disaster risk reduction processes				
	Level 1 No progress has been made and/ or progress has stopped or moved backwards	Level 2 Minor progress achieved in disaster risk reduction actions, with no systematic commitment	Level 3 Institutional commitment to reduction disaster risk, but no substantial progress	Level 4 Systematic commitment at policy level, but insufficient resource allocation	Level 5 Full achievement with sustained commitment
General strategy and data base related to vulnerability assessments (social, economic, physical and environmental vulnerability) elaborated	No information and strategy for identifying vulnerability	Efforts underway to build the first vulnerability database, but limited to physical aspects; updating of the information not yet been considered; problems regarding the quality of the information	Vulnerability database created, but still incomplete, although displaying greater territorial and sectoral coverage; with irregular update; persisting significant problems with quality and information resolution	Extensive sectoral vulnerability database with adequate information, incorporating criteria other than purely physical ones exists; no geographical information system in place yet, but the database is regularly updated by assessing changes in vulnerability patterns; the quality and resolution can still be improved	Comprehensive sectoral and geographical information system on vulnerabilities; regularly updated; with high quality and high resolution. Consideration of all types of vulnerabilities (social, economic, physical and environmental)
Data base and analysis of risk assessments (risk maps) in place	No risk maps available	Efforts underway to build the first risk map database, but limited to physical urban aspects; updating of the information has not yet been considered; problems regarding the quality and resolution of the information	A database of risk maps exists, but it is still incomplete, although displaying greater territorial and sectoral coverage; updating is irregular; significant problems persist regarding the quality and resolution of the information; some GIS developments, but limited	Extensive risk database with adequate information, incorporating criteria other than purely physical ones exists; limited or no sectoral and geographical information systems in place yet, but the database is regularly updated by assessing changes in vulnerability patterns; the quality and resolution can still be improved	Comprehensive sectoral and geographical information system on risks exist; regularly updated; with high quality and high resolution. Consideration of all types of risk (social, economic, physical and environmental)
Supportive systems for decision-making exist	No disaster risk information systems exists	Some manual information systems, with no systematic data update, aiming at recording events and number of people affected. Difficult access to the little available information	In progress, computerized information systems on general behavior of hazards, including records of the areas and population affected. However, these systems not yet generalized	Computerized information systems in place involving significant developments in some areas, including general frameworks for users (maps, vulnerability information, etc), but with gaps in relevant areas and with updating problems	Wide use of modern information systems (GIS, various maps of risks, hazards and vulnerabilities, etc.); historical records; record of damage suffered, etc. The information constantly updated, and users have easy access to it

Annex 5: Indicative criteria for establishing levels of progress for disaster risk reduction (*continued*)

Indicators	Illustration of advancements for each level of disaster risk reduction processes				
	Level 1 No progress has been made and/ or progress has stopped or moved backwards	Level 2 Minor progress achieved in disaster risk reduction actions, with no systematic commitment	Level 3 Institutional commitment to reduction disaster risk, but no substantial progress	Level 4 Systematic commitment at policy level, but insufficient resource allocation	Level 5 Full achievement with sustained commitment
Supportive systems for decision-making exist (continued)	No impact measuring systems (indicators and methodologies) exist. No records are available of the damage suffered, or if there are, they are scattered and have not been systematized. There is no institutional capacity for such evaluations	Some manual records Are available of the damage suffered, including specific estimations carried out sporadically, without employing formal methodologies for these purposes. There are no indicators for assessing the socioeconomic impact	Some measurements of the damage n carried out with external support, following clear guidelines	There is a certain institutional capacity for measuring socioeconomic impacts and their effect on development. Some application methodologies are available, but efforts are required to provide training for these purposes and expand coverage	There is a culture of measuring damage as a basis for decision- and policy-making. The measuring systems include appropriate methodologies and indicators, which are permanently assessed at the relevant level
	No management assessment systems available to evaluate actions in this field. Evaluations of this type not carried out	Very limited and irregular experiences have taken place to assess management efforts to incorporate prevention in development actions. No formal system has been established for these purposes	There are no management assessment systems, but analyses of previous experiences facilitate decision-making. Keeping a record of previous errors and limitations has made some progress possible	Systems for measuring disaster management effectiveness have been established, but they are not yet in wide use. Keeping a record of previous errors and limitations helps to improve disaster prevention actions	Advances and weaknesses regarding prevention in the country acknowledged. Progress indicators are available on disaster management and are used permanently in the decision-making process. Significant achievements have been made thanks to the application of the results of this management assessment

Annex 5: Indicative criteria for establishing levels of progress for disaster risk reduction (*continued*)

Indicators	Illustration of advancements for each level of disaster risk reduction processes				
	Level 1 No progress has been made and/ or progress has stopped or moved backwards	Level 2 Minor progress achieved in disaster risk reduction actions, with no systematic commitment	Level 3 Institutional commitment to reduction disaster risk, but no substantial progress	Level 4 Systematic commitment at policy level, but insufficient resource allocation	Level 5 Full achievement with sustained commitment
End-to-end early warning systems are in place for major hazards	No systems available. Only the application of indirect methods for informing the public (through the media) after a disaster has struck	Mostly emergency warning methods structured haphazardly for handling slowly developing events. Some sectoral strengths in areas of high national impact (e.g., the electric grid)	Early warning systems linked to some hazards are partially available; interinstitutional obstacles to their implementation	Widespread development of early warning systems for the main hazards that generate risks. Links with the media	A well developed early warning system is available for major hazards in different territorial levels that operates by stages and employs a variety of communications processes, with a structure of hierarchical relations through which communication flows, as well as pre-established procedures for advising the public. Acts in cascade fashion to disseminate information. Is complemented by the role of the media
HFA Priority 3: Use knowledge, innovation and education to build a culture of safety and resilience at all levels					
Country wide public awareness strategy promoted for disaster risk reduction	No countrywide public awareness strategy for disaster risk reduction	Declarations related to the importance of a country wide public awareness strategy in place at some governmental levels, but without practical applications	Some attempts for elaborating public awareness strategy at different territorial levels. Some local public awareness strategies.	Discussion on strategy is taking place	Countrywide public awareness strategy promoted for disaster risk reduction
	No commitment for evaluating previous experiences as a basis for decision making exists	Country does not have commitment for assess previous experiences in the field, but uses some international experiences for improving DRR	Isolated cases study implemented as a basis for improving disaster management	Many cases study and assessment of experiences are common practices in some sectors or local territories for improving disaster reduction management, but still not a general practice in the country	Lesson learned part of the DRR management system of the country

Annex 5: Indicative criteria for establishing levels of progress for disaster risk reduction (*continued*)

Indicators	Illustration of advancements for each level of disaster risk reduction processes				
	Level 1 No progress has been made and/ or progress has stopped or moved backwards	Level 2 Minor progress achieved in disaster risk reduction actions, with no systematic commitment	Level 3 Institutional commitment to reduction disaster risk, but no substantial progress	Level 4 Systematic commitment at policy level, but insufficient resource allocation	Level 5 Full achievement with sustained commitment
Disaster risk reduction elements included in basic curricula	No progress in incorporating disaster risk reduction elements in basic curricula	Awareness of the need to incorporate disaster risk into curricula, but efforts not yet borne fruit. Other improvised and ad hoc efforts carried out	Incorporation of prevention into curriculum in progress, but at a very early stage	Incorporation at some educational levels significantly advanced, but still without impact on the culture as a whole	Disaster prevention fully incorporated, in cross-cutting fashion, throughout basic and secondary education. Society as a whole receives the benefits of this cultural change
Higher education training on disaster risk reduction	No progress in higher education training on disaster risk reduction	Some initiatives for eventually providing technical training on disaster risk reduction	Stable training centers established, but very limited	The academic community committed to carrying out research in this field. A more diversified base for training technicians and professionals is available, but with limited coverage	Higher education has a permanent base of professional and technical education in risk management that supports the transfer of up-to-date technical knowledge throughout the institutions themselves and in the private sector
Disaster risk reduction incorporated into curricula (architects, planners, MDs, agriculture experts, engineers, social workers, etc)	No progress in incorporating disaster risk reduction in higher education curricula	Awareness of the need to incorporate prevention and disaster risk in curricula, but no result yet	Incorporation of prevention in higher education in progress	Significant advances have taken place in the incorporation of the issue in some disciplines	Higher education has incorporated the issue of risk management in cross-cutting fashion

Annex 5: Indicative criteria for establishing levels of progress for disaster risk reduction (*continued*)

Indicators	Illustration of advancements for each level of disaster risk reduction processes				
	Level 1 No progress has been made and/ or progress has stopped or moved backwards	Level 2 Minor progress achieved in disaster risk reduction actions, with no systematic commitment	Level 3 Institutional commitment to reduction disaster risk, but no substantial progress	Level 4 Systematic commitment at policy level, but insufficient resource allocation	Level 5 Full achievement with sustained commitment
Broader disaster risk reduction training programmes for institutional staff of country stakeholders conducted	No training programmes for building capacity in risk management for stakeholders	Some staff training initiatives launched, but basically in disaster response alone	Timid processes underway to hire staff with experience in these issues, and some support available for training to strengthen institutional capacity	Training programmes for professionals and technicians conducted and promoted by the institutions at some levels or in some areas	Staff working on prevention and development qualified on these issues. There is a permanent policy of upgrading staff knowledge in this field
Compilation, dissemination and use of disaster risk reduction information is a practice	No channels for gaining access to the information	There are some institutional channels for disseminating disaster risk reduction information, but they offer little access to users and the impact is very low	Widespread links with the media as a way of disseminating information. Limited institutional information networks, but some beneficiaries benefits from the received information	Establishment of institutional networks for disseminating information and maintaining links with the media: Wide dissemination and use of information	Well developed and publicized channels for disseminating information created, with new technologies to facilitate access. Strong links between the users (institutional, community, private) and the information networks. Diversity of information media
HFA Priority 4: Reduce the underlying risk factors (reduce risk in key sectors)					
Environmental protection and natural resource management policies include disaster risk reduction elements	No progress in including disaster risk reduction elements in environmental protection and natural resources management policies	Some progress in considering disaster risk reduction in environmental protection and natural resources management policies, but only referred to physical interventions	Strong awareness on the relation between disaster risk reduction and protecting the environment as complementary aspects. Attempts to relate those issues into environment and resources management	Projects and programmes related to environment and natural resources management include disaster risk reduction in existing mechanisms as environmental impacts assessment, but a broader consideration as a cross cutting theme needs to be implemented	Disaster risk reduction is always considered for environmental protection and natural resources management in all activities

Annex 5: Indicative criteria for establishing levels of progress for disaster risk reduction (*continued*)

Indicators	Illustration of advancements for each level of disaster risk reduction processes				
	Level 1 No progress has been made and/ or progress has stopped or moved backwards	Level 2 Minor progress achieved in disaster risk reduction actions, with no systematic commitment	Level 3 Institutional commitment to reduction disaster risk, but no substantial progress	Level 4 Systematic commitment at policy level, but insufficient resource allocation	Level 5 Full achievement with sustained commitment
Health facilities and schools conform to hazards resistant standards	Health facilities and schools not incorporated in hazards resistant standard	Scattered progress in incorporating resistant standard in health facilities and school	Some national or international institutions are supporting the incorporation of resistant standard in health facilities and schools	Significant advances have taken place in the incorporation of resistant standard in health and schools	Considering resistant standard in health facilities and schools is a common practice in the country at all levels
National MDGs reports included elements of disaster reduction	Elements of disaster reduction not included in MDGs reports				National MDGs reports included elements of disaster reduction
Elements of vulnerability reduction for drinking water systems related to natural hazards events included in National MDGs report (under MDG7- Target 10)	Elements of vulnerability reduction for drinking water systems related to natural hazards events not included in national MDGs report includes (under MDG7- Target 10)				Elements of vulnerability reduction for drinking water systems related to natural hazards events included in National MDGs report (under MDG7- Target 10)
Elements of disaster risk reduction covered in CCA/UNDAF	Elements of disaster risk reduction not covered in CCA/UNDAF				Elements of disaster risk reduction included in CCA/ UNDAF
Disaster risk reduction components included in PSRP	Disaster risk reduction components not included in PSRP				Disaster risk reduction components included in PSRP

Annex 5: Indicative criteria for establishing levels of progress for disaster risk reduction (*continued*)

Indicators	Illustration of advancements for each level of disaster risk reduction processes				
	Level 1 No progress has been made and/ or progress has stopped or moved backwards	Level 2 Minor progress achieved in disaster risk reduction actions, with no systematic commitment	Level 3 Institutional commitment to reduction disaster risk, but no substantial progress	Level 4 Systematic commitment at policy level, but insufficient resource allocation	Level 5 Full achievement with sustained commitment
Disaster risk reduction elements included in land use development plans	DRR not incorporated in the planning mechanisms that regulate land use. No land-use management plans or urban development plans in the country	Attempts made to incorporate prevention in general land-use management plans, or in local plans, but not enough information has been collected to produce appropriate risk maps. Incorporating disaster prevention in land-use management plans is still not legally compulsory	Land-use management plans officially contain regulatory disaster prevention measures, whether at the national, state, or local level, but they are weak or lack control mechanisms to ensure compliance. Advances in a deeper knowledge on DRR for specific areas as pilots but implementation is still weak	Weak land-use management plans at different levels, but functioning control mechanisms, or in the process of being strengthened. However, geographical coverage is still limited	Geographically extended regulatory land-use management system in place, with periodically updated plans that incorporate risk management, and with control mechanisms that ensure compliance
Technical construction standards elaborated and implemented. Mechanisms of the application of technical standards controlled	No technical construction standards. No control mechanisms for securing safety of buildings and critical facilities	Awareness of the need for technical standards promoted , but none have been developed or they are at an early stage. There are indirect mechanisms for controlling the existing technical construction standards but they are not very effective	Some technical standards available but only in the case of a few hazards. Technical deficiencies in their formulation. Not updated. New mechanisms for securing safety of buildings and critical facilities have been implemented, but control remains a complex task	Technical standards are available for several types of risks, some of them updated, but gaps and technical weaknesses remain. Direct mechanisms for securing safety of building and critical facilities are available, but they remain hard to implement or are still very recent	Widespread development of technical standards for the most significant risk situations. Periodically updated. Good technical quality. Effective control mechanisms that ensure the application of technical standards
Sectors have incorporated disaster risk reduction into the planning processes and executions	Disaster risk reduction not included in sectoral plans and practices	Attempts to consider the issue in some sectors, but in scattered fashion and without an overall vision	Some sectors have projects for vulnerability reduction, but these lack detailed information on linkages to existing development plans	Several sectoral development plans include risk management considerations as part of their vision of sustainable development, but these systems have yet to be institutionalized permanently	Sectoral development plans contain a preventive vision of disaster management, at all the levels and involving all sectors, with extensive coverage throughout the national territory, particularly at the local level
The insurance sector is actively participating in disaster risk reduction	No system in the country for insurance against the risk of disasters, or not applied	Insurance policies incorporate some conditions of prevention related to certain assets or persons, but in a limited manner and without a technical assessment of the risk situation	Pressure for the establishment of such mechanisms by the inhabitants of areas at risk. Participation by the private sector in these efforts	Establishment of disaster risk insurance based on greater technical knowledge of the risks. Little knowledge or awareness on the part of some potential beneficiaries	Strong participation by insurance agencies in risk assessment, with systems developed for applied such mechanisms in different geographical areas and economic sectors

Annex 5: Indicative criteria for establishing levels of progress for disaster risk reduction (*continued*)

Indicators	Illustration of advancements for each level of disaster risk reduction processes				
	Level 1 No progress has been made and/ or progress has stopped or moved backwards	Level 2 Minor progress achieved in disaster risk reduction actions, with no systematic commitment	Level 3 Institutional commitment to reduction disaster risk, but no substantial progress	Level 4 Systematic commitment at policy level, but insufficient resource allocation	Level 5 Full achievement with sustained commitment
Financial institutions have included criteria for approval of project financing	Disaster prevention not among the criteria for approval of projects in areas at risk	Some financial firms incorporate elements of risk assessment in their criteria for approval, but not in an organized fashion. Instead, they may be acting out of environmental considerations that have been previously established	There is awareness among financial institutions of the need to incorporate risk assessment among their criteria for approval; however, there has been little concrete progress	Risk management becomes generalized for financing development projects located in areas at risk. However, problems of implementation remain	Many financial institutions in the country have developed risk assessment methodologies and regularly apply obligatory risk assessment criteria before approving the funding of projects
Disaster recovery plans prepared as a practice when disasters occur	No disaster recovery plans prepared when disasters occur	Some initiatives for elaborating and institutionalizing disaster recovery plans established but without aiming at disaster risk reduction	Broad awareness about the importance of recovery plans in future disaster risk reduction promoted and efforts for preparing and coordinating recovery plans made	Recovery plans widely implemented in the country but weak coordination in some cases	Recovery plans are part of the disaster management culture in the country. Formal structure and coordination mechanisms for planning and execution are putting in place when disaster occurs
HFA Priority 5: Strengthen disaster preparedness for effective response at all levels					
Disaster risk reduction incorporated into the design and implementation of emergency, response, recovery and rehabilitation processes of National policy framework	Disaster risk reduction not considered into designing and implementation of emergency, response, recovery and rehabilitation	Disaster risk reduction considered in some emergency, response and rehabilitation initiatives, but not permanent	National policy framework on emergency, response, recovery and rehabilitation in process of formulation with the participation of fundamental response and multi-sectoral development instruments	National policy framework on emergency, response and rehabilitation incorporated into disaster risk reduction, but implementation efforts needed	Broad framework on emergency, response and rehabilitation with disaster risk reduction consideration accepted and implemented

Annex 5: Indicative criteria for establishing levels of progress for disaster risk reduction (*continued*)

Indicators	Illustration of advancements for each level of disaster risk reduction processes				
	Level 1 No progress has been made and/ or progress has stopped or moved backwards	Level 2 Minor progress achieved in disaster risk reduction actions, with no systematic commitment	Level 3 Institutional commitment to reduction disaster risk, but no substantial progress	Level 4 Systematic commitment at policy level, but insufficient resource allocation	Level 5 Full achievement with sustained commitment
All organizations, personnel and volunteers in the preparedness system possess the required technical capacity to carry out essential elements and tasks for effective disaster response	No programme implemented for improving technical capacity to carry out essential elements and tasks for effective disaster response	Some isolated programmes with limited coverage implemented for improving technical capacity for effective disaster response	National and local efforts for improving technical capacity made through programmes covering a broad range of actors (personnel, volunteers and organizations), but not institutionalized	Relevant progress made for establishing and implement programmes for improving technical capacity on preparedness oriented to a wide range of actors (organizations, personnel and volunteers), but efforts needs to be made	sufficient technical capacity of organizations, personnel and volunteers in the preparedness system for carrying out essential elements and task for effective disaster response
Independent assessment of disaster preparedness capacities and mechanisms has undertaken and responsibility for implementation of recommendations assigned and resourced	No assessment undertaken on disaster preparedness capacities and mechanisms	Some advances on assessment of disaster preparedness capacities and mechanisms undertaken at some geographical levels, but no mechanisms and responsibilities established	Progress on assessment of disaster preparedness capacities and mechanisms achieved at national and some local levels, but implementation limited due to lack of resources and coordination	Relevant progress in assessment of disaster preparedness capacities and mechanisms and in the implementation of recommendations, but insufficient geographical coverage	Wide updated independent assessment of disaster preparedness capacities and mechanisms frequently executed and recommendations implemented by responsible
Disaster plans and programmes are common practices in disaster prone areas	No disaster preparedness plans and programmes elaborated for disaster prone areas	Some initiatives for elaborating and institutionalizing disaster preparedness plans and programme, but with poor technical quality and scarce institutional participation	Preparedness plans elaborated at some geographical levels, but only for response without considering risk reduction and relevant mitigation actions. No evaluation and update	Disaster preparedness plans of good quality in different geographical levels and sectors elaborated, but not monitored or updated	Disaster preparedness plans elaborated at all levels with good technical quality, involving the participation of response and development bodies. Permanently evaluation and update

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