Regional Synthesis Report on HFA Implementation in Asia and Pacific - An Overview of Reports by Countries up to 2007

Based on the National Reports to the World Conference on Disaster Reduction (WCDR) and the Hyogo Framework for Action (HFA) Progress Report to the First Session of Global Platform for Disaster Risk Reduction (GPDRR)

ISDR
International Strategy for Disaster Reduction

ASIAN DISASTER REDUCTION CENTER

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Acknowledgements

Regional synthesis report on HFA implementation in Asia and the Pacific: an overview of reports by countries up to 2007 is prepared by the Asian Disaster Preparedness Center (ADPC) and the Asian Disaster Reduction Center (ADRC) in collaboration with the UN International Strategy for Disaster Reduction (UN/ISDR). The first consultation version; November 2007, of the report was prepared with support provided by the UN/ISDR through The World Bank under the Track 1 of the Global Facility for Disaster Reduction and Recovery (GFDRR). Based on the feedback received subsequent revisions of the report have been carried out by ADPC. Resources for these revisions and the publication of the Report were provided by the Government of Australia through its program support for the Regional Consultative Committee on Disaster Management (RCC).

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Executive Summary

***'Regional synthesis report on* Hyogo Framework for Action (HFA)[1] implementation in Asia and the Pacific'** is an overview of reports by countries up to 2007.

The report provides the regional synthesis within two timeframes: ***as on January 2005*** and ***during 2005 and 2006.*** In both cases, the synthesis is presented under the core indicators developed by UN/ISDR for each of the HFA Priorities for Action. The National Reports submitted by the countries to the World Conference on Disaster Reduction (WCDR) in January 2005 and the HFA Progress Report submitted during the First session of the Global Platform for Disaster Risk Reduction (GPDRR) in June 2007, form the base of the synthesis. A brief summary is also provided on DRR initiatives undertaken by the regional actors.

With these two timeframes the report highlights the following ***findings*** under each of the five HFA Priorities for Action.

HFA Priority 1: DRR Legislation, Institutions, Plans and Budgets

At the beginning of 2005, many countries in the region had ***legislations*** related to disasters, but most of these focused primarily on disaster response and management of emergencies and rarely on risk reduction. However, in the years 2005 and 2006, new legislations were being crafted in many of the countries encompassing a holistic approach towards DRR. Though most of the initiatives are a result of large scale disasters, such as the Indian Ocean Tsunami, the trend has been to adopt a multi stakeholder approach and to move away from disaster management towards the wider issues of DRR.

The development of ***National Disaster Management Plans*** is another area where substantial progress has taken place since 2005. There are more attempts to link these plans with socio economic development plans and incorporate wider issues of DRR. Typically the plans chart out the priorities for DRR in the coming years, identify stakeholders and resources required for implementation. However, to date, implementing the plan has started in only a few of the countries.

Most of the countries had ***disaster related institutions*** already in place before 2005, at least at the national level. However, the focus of these were largely restricted to post disaster response and relief and the focal points were typically in four clusters; namely, defence, home/interior, agriculture and social welfare. However, post 2005 in many of the countries, new institutions have been established or are being reinforced at both national and sub national levels in order to undertake long term DRR measures and to adopt a multi stakeholder approach. National Platforms for DRR are also being established or existing partnerships are being strengthened to act in unison.

To establish a dedicated ***budget line for DRR*** within national and local budgets remains a challenge in most of the countries, with national

[1] Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters

funds being allocated primarily for disaster response, recovery and for the operations of national disaster coordinating agencies, but rarely for measures related to DRR.

HFA Priority 2: Risk Assessments and Early Warning

Risk assessments were not a common feature in these countries prior to 2005. Although hazard assessments were being carried out on various scales and for various disasters, vulnerability assessments were characteristically rare especially at national levels. In recent years the importance of comprehensive national risk assessments has been realised by most of the countries and it is identified as a priority in the National Disaster Management Plans; however, very few countries have completed a risk assessment on a nationwide scale. More importantly, how far the results of these assessments are used in shaping the policies remains unknown.

While the years prior to 2005 saw an improvement in the technical capacities for early warnings, ***end-to-end early warning systems*** *are* currently being established in the countries in the region. However, the focus of these systems varies from the single, most prevalent, to multi-hazard. The capacities also differ and require expertise at both ends; technical capacities to monitor hazards and communication capabilities to impart the probable risk from the hazard to the community and thus prepare them to act on the warnings.

HFA Priority 3: Knowledge and Education for building a culture of resilience

Raising awareness on disasters through ***school curricula*** has been practiced by many of the countries in the region. Over the years, the focus of the curricula has expanded from the basics of science related to hazards, to preparedness measures and enhancement of skills for saving lives in emergencies. However, it is recognised that a gap exists amongst all these various initiatives that are taking place. This gap lies in teaching children on risk assessment, land use planning, safe building construction, and environmental management for DRR; or in other words, the importance of reducing underlying risk factors.

The importance of ***public awareness*** on DRR is recognised by the majority of the countries and initiatives have been undertaken at various scales, but large scale national programmes on public awareness are not yet a common feature in most of the countries.

HFA Priority 4: Reducing underlying Risks

Though prior to 2005, projects related to reducing ***underlying factors of risk*** were being implemented in some of the countries, the scope of these was often limited in time and geographical area. These initiatives primarily looked into physical aspects of hazard resilient planning, such as construction of dykes, river embankments and others. However, in the last two years, there has been a growing realisation of the importance of integrating DRR into holistic planning through a wide range of measures, starting from poverty reduction strategies, adopting ecosystem based measures for risk reduction, enforcing building codes and zoning for post disaster recovery. Initiatives under this priority are very recent and largely at a policy and institutional level and not yet fully translated into ground implementation.

HFA Priority 5: **Preparedness for effective Response**

Preparedness planning was, and still is, considered important by most of the countries; however, the level of preparedness differs from country to country and often within each country at national and sub national level. Institutionalising the system for capacity building at all levels is an ongoing process in most of the countries.

Priority Concerns

Based on these findings, the report highlights the challenges faced in implementing each of the HFA priorities at both national and regional level and identifies the following ***priority concerns***:

- National risk profiles and sub regional disaster hotspot analysis
- Strategies for reducing economic impacts of disasters especially on Small Island Developing States
- Reducing disaster risks in urban areas
- Climate change adaptation
- Improved data gathering and analysis of 'local' disasters
- Better use of climate information for dealing with ENSO and
- Trans-boundary hazard risk management.

Strategic Priorities till 2010

The Report concludes with the following suggested ***approaches and thematic areas for action*** for the coming three years of 2008-2010, in order to facilitate a workable implementation of the HFA for the countries in the region:

- Develop new National DRR Action Plans in countries where it has not yet been prepared;
- Implement National DRR Action Plans where such plans have been developed and establishing a mechanism for periodic review and update of the plan based on the level of actual implementation and resource mobilisation;
- Develop and implement National DRR programmes with emphasis on community led initiatives;
- Undertake Priority Implementation Partnerships between National Disaster Management Offices, Planning, Finance and Sectoral Ministries to mainstream DRR into development;
- Take stock of initiatives in the countries on hazard and vulnerability assessments and, based on this, carry out a comprehensive multi-hazard risk assessment on the national scale;
- Build early warning systems for more frequent hazards in the countries;
- Continue advocacy with wider stakeholders, especially with the private sector to integrate DRR into school curricula;
- Develop action plans and initiate implementing retrofitting of critical buildings, such as schools and hospitals in all countries of the region;
- Undertake, in partnership with national training institutes, nationwide programmes on capacity building for DRR; and
- Identify specific selected high-risk provinces, districts and cities for focused implementation of local DRR programmes, in partnership with local authorities, local institutions, humanitarian NGOs and other development partners.

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Section 1:
Introduction to the report

Section 1: Introduction to the report

1.1 Introduction

Regional synthesis report on HFA implementation in Asia and the Pacific: an overview of reports by countries up to 2007 is prepared by the Asian Disaster Preparedness Center (ADPC) and Asian Disaster Reduction Center (ADRC) in collaboration with the UN International Strategy for Disaster Reduction (UN/ISDR).

ADPC and ADRC are regional organisations that support their respective member countries in Asia and the Pacific by providing technical assistance, meeting information needs and building capacity on disaster risk reduction (DRR).

The Regional Consultative Committee (RCC) on Disaster Management was established by ADPC in 2000 and comprises of senior government officials in the national disaster management systems in the Asian region. To date, RCC has members from 26 countries in Asia and the Pacific; namely, Afghanistan, Bangladesh, Bhutan, Brunei, Cambodia, China, Georgia, India, Indonesia, Iran, Jordan, Kazakhstan, Korea, Lao PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Papua New Guinea, Philippines, Sri Lanka, Thailand, Timor Leste and Vietnam. Annual meetings are convened by ADPC and are co-organised by the government of the host country. To date, seven RCC meetings have been held.

ADRC has 27 member countries; namely, Armenia, Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Japan, Kazakhstan, Korea, Kyrgyz, Lao PDR, Malaysia, Mongolia, Myanmar, Nepal, Pakistan, Papua New Guinea, Philippines, Russian Federation, Singapore, Sri Lanka, Tajikistan, Thailand, Uzbekistan, Vietnam and Yemen. The ADRC annually hosts the Asian Conference on Disaster Reduction (ACDR).

1.2 Background of the report

One key aspect of the RCC meetings since 2004 has been the special sessions organised in partnership with UN/ISDR Secretariat in preparation for the World Conference on Disaster Reduction (WCDR) and implementation of the Hyogo Framework for Action (HFA) in Asia. At the RCC 5 Meeting held in Hanoi, Vietnam in May 2005, the RCC adopted the Hanoi RCC 5 Statement on mainstreaming DRR into development in Asian countries. This Statement recognized the "*responsibility of the RCC as a mechanism, offers to serve as a useful forum and reporting mechanism through which the progress of the implementation of the HFA can be monitored by UN/ISDR, and advocates that the 10 year HFA framework should be broken down into 2 year milestones of accomplishments to facilitate a workable implementation of the HFA for each of the RCC Member countries".* The need for a report, to be developed with UN/ISDR, on the status of DRR at the start of the decade of implementation of the HFA was reiterated at the 6th RCC meeting in Kunming, China, in November 2006.

A key theme of ACDR conferences has been the support for the preparatory process of the WCDR, as well support for the implementation of the HFA. Accordingly, the primary theme of the ACDR in Seoul, March 2006, was the 'Implementation of DRR in the context of HFA for the countries of the Asian region.'

At these respective meetings, member countries recognised that the National Reports submitted to the WCDR in January 2005, were vast treasures of information. Thus, the countries agreed that compiling this information into a regional report would provide a clear regional overview of DRR at the beginning of 2005.

By the time development of this Report began in March 2007, significant initiatives had already been underway for more than two years in most of the countries in Asia and the Pacific Region. Hence, it was decided to also include in this report a snapshot of progress made in 2005 and 2006, based on the reports submitted by the countries to the First Session of the Global Platform for Disaster Risk Reduction (GPDRR).

Another key imperative for the report was the call in the Hyogo Declaration and the HFA for ISDR partners and the Secretariat to prepare periodic reviews of progress of DRR and to identify gaps and challenges in its implementation. The regional report contributes a supplementary regional perspective to the National Reports of countries and the Global Report issued by the UN/ISDR. The *Disaster Risk Reduction: Global Review, 2007* was published in December 2007 based on national HFA progress reports submitted to the First Session of GPDRR in June 2007.

Thus, this report, *Regional synthesis report on HFA implementation in Asia and the Pacific: an overview of reports by countries up to 2007* is jointly developed by ADPC, ADRC and UNISDR. It is expected to be of value as a shared source of information, to reduce overlap and to provide a common basis to review progress and plan action at the various inter-governmental meetings co-organised by ADPC, ADRC and UN/ISDR such as:

- 2nd Asian Ministerial Conference on Disaster Risk Reduction, November 2007, Delhi, India
- 7th Meeting of Regional Consultative Committee on Disaster Management, May 2008, Colombo, Sri Lanka
- Asian Conference on Disaster Reduction, November 2008, Bali, Indonesia (ACDR 2008)
- 3rd Asian Ministerial Conference on Disaster Risk Reduction, December 2008, Kuala Lumpur, Malaysia
- 2nd Session of Global Platform for DRR; June 2009, Geneva, Switzerland

A first consultation version of this report was presented at the 2nd Asian Ministerial Conference on Disaster Risk Reduction held in New Delhi, November 2007. Based on the feedback received, the report has been significantly revised by ADPC in its capacity as the secretariat of the RCC.

Currently the UN/ISDR is coordinating the preparation of the 2009 Global Assessment Report on Disaster Risk Reduction, which is to be discussed at the Second Session of the GPDRR in 2009. Countries are undertaking the HFA Review process in preparation for the reports to the second session, using the online reporting tool, the HFA Monitor (www.preventionweb.net). This synthesis Report is expected to feed into national monitoring and reporting processes as well as the *Global Assessment Report* on DRR.

1.3 Structure of the report

This Report has five main sections apart from the Introduction (Section 1) and Methodology (Section 2). Section 3 sets the scene by providing a summary of the profile of regional disaster risks for Asia and the Pacific, thus contextualizing the synthesis presented in the subsequent sections. Section 4 forms the main body and provides an regional synthesis of DRR in the region as of January 2005, in relation to the five priorities for action of the HFA. The synthesis is based on the information available in the National Reports submitted by countries to the WCDR. Section 5 provides a snapshot of the milestones achieved in the region in 2005 and 2006 in terms of the implementation of the HFA and is based on the information available in the HFA Progress Reports submitted by countries at the First Session of GPDRR. Realising a regional overview would be incomplete without reflecting on the various initiatives undertaken by the regional actors, Section 6 looks at the various regional initiatives and programmes on DRR. Finally, Section 7 summarises the key challenges in implementing DRR based on the analysis in the previous sections and provides recommendations for strategic priorities for the coming three years.

Section 2:
Methodology

Section 2: Methodology

2.1 Purpose of this Report

With the countries of the region being primary responsible to implement the HFA and to monitor progress, it was felt that a document providing a regional synthesis of DRR initiatives in the region would be useful to understand the status of DRR, to learn from similar experiences in other countries and to help identify the strategic direction needed in order to implement the HFA. Thus, the primary purposes of this document are to:

- Provide a regional synthesis of DRR in the region at the start of the decade of implementation of the HFA in January 2005;
- Provide a snapshot of progress made with the implementation of the HFA in 2005 and 2006;
- Describe the major challenges to achieve the HFA priorities;
- Highlight and help determine strategic directions and programmes that can fill critical gaps in DRR and accelerate the implementation of HFA in Asia and the Pacific Region; and
- Help reduce any overlap and provide a common basis for reviewing progress on DRR and plan action for the various inter-governmental meetings organised in the region.

2.2 Users of this Report

This document is primarily aimed for use by the governments of the region and their key DRR agencies, i.e. the National Disaster Management Offices (NDMOs) and related line agencies, such as national agencies for planning, sectoral ministries, national technical institutes and others, to provide a context for policy development and to formulate strategic DRR programmes, and undertake implementation of the HFA. The Report can also be used by the following audiences to meet their own policy and programme priorities:

- UN agencies including UN/ISDR, United Nations Development Programme (UNDP), United Nations Children's Fund (UNICEF), United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), United Nations Environment Programme (UNEP), United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), United Nations Centre for Regional Development (UNCRD), United Nations Educational, Scientific and Cultural Organisation (UNESCO), World Health Organisation (WHO) and World Meteorological Organisation (WMO). These agencies may use the information in this document to provide context for their own programmes and to identify issues in the region that are relevant to their own priorities and mandates.
- Bi-lateral and multilateral agencies may use this document to identify areas of priority needed for DRR and so assist in setting strategic priorities for their own programmes.
- Inter-governmental sub regional organisations, such as Association for Southeast Asian Nations (ASEAN), South Asian Association for Regional Cooperation (SAARC) and South Pacific Applied Geoscience Commission (SOPAC), Bay of Bengal Initiative for Multi-sectoral

Technical and Economic Cooperation (BIMSTEC) and other regional organisations, such as Mekong River Commission (MRC), Integrated International Center for Mountain Development (ICIMOD), ADPC, ADRC and various research institutes and universities may use this report as an information source to guide activity and research that is directly relevant to hazards and risks faced by nations and communities.

- NGOs and civil society organisations may use this report to identify key areas for their own programmes to support government and communities in reducing risk.

2.3 Data sources and Methodology

This sub section explains the data sources and methodology of Sections 3-7 of this Report.

Section 3

The **Regional Risk Profile** presented in **Section 3** provides a brief risk profile based on selected studies and databases to set the background for analysis carried out in subsequent sections of the Report. Section 3 is based on the available analysis on Hazard, Vulnerability and Risk Assessment carried out by the EM-DAT Programme at the Centre for Research on the Epidemiology of Disasters; The Natural Disaster Hotspots: A Global Risk Analysis; The World Bank and Reducing Disaster Risk, UNDP 2004. The section does not attempt to present risk assessment based on any new data on hazards or analysis of vulnerability. It is recognised that Asia and the Pacific, being vast regions with different hazards, varied socio economic status and differences in capacity across the regions, means that significantly different circumstances occur from country to country as well as within a country. Thus, it is necessary to be informed by local and contextual issues in assessing the risk profile and, more importantly, the progress made in DRR.

Section 4

Source of Data: The ***regional synthesis on HFA implementation in Asia and the Pacific*** in **Section 4** is based on the information presented in the National Reports submitted by countries to the WCDR. The reports were prepared from March 2004 to January 2005 based on the Guidelines provided by UN/ISDR ***(Box 2.1)***. The National Reports are available for the following 22 countries: Afghanistan, Armenia, Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Iran, Japan, Jordan, Mongolia, Nepal, Pakistan, Papua New Guinea, Philippines, Russia, South Korea, Sri Lanka, Thailand and Vietnam. It is important to state that references like the Country Reports prepared by the ADRC, Summary Reports of the RCC meetings, selected published documents from ADPC, ADRC and UN/ISDR were used as sources of information on the remaining countries; namely, Kazakhstan, Kyrgyz, Lao PDR, Malaysia, Maldives, Myanmar, Singapore, Tajikistan, Timor Leste, and Uzbekistan, as well as for additional information on DRR. An extensive literature review of initiatives by all the governments and other actors in each country, and all the partners of the ISDR system, was beyond the scope of this Report.

Approach and Framework: The overview, analysis and description focuses on positive achievements and are intended to be used as guides, incentives and prompts for enhancing effective future work in DRR in the region. The HFA with the Five Priorities for Action is the

framework for presenting the overview of DRR. Within these priorities, the indicators developed by UN/ISDR Secretariat, *Monitoring progress on implementation of the HFA: HFA Monitor Template* (May 2008), have been largely used to present the overview. However, these indicators have been used more for summarising information under the particular priorities for action and it is not intended to critically assess and create a baseline status of these indicators for measuring progress. The latest version of the indicators ***(Box 2.2)*** has been used as it is currently being used by countries in monitoring progress and planning action. However, the format for the WCDR National Reports used slightly different questions and, hence, under some of the indicators the status or progress has not been adequately reported. In spite of this weakness, the current indicators are used to help countries and others when doing comparative analysis.

Source of Data: The ***regional synthesis of progress made on HFA implementation in Asia and the Pacific*** in **Section 5**, is based on the information provided in the HFA Progress Report submitted by countries to the First Session of the GPDRR. The reports were based on the Guidelines provided by UN/ISDR ***(Box 2.3)***. HFA Progress Reports are available for the following 22 countries from the region: Armenia, Bangladesh, Bhutan, China, India, Japan, Kazakhstan, Korea, Kyrgyzstan, Malaysia, Maldives, Mongolia, Nepal, Pakistan, Papua New Guinea, Philippines, Russian Federation, Sri Lanka, Tajikistan, Thailand, Uzbekistan and Vietnam. Information on the Pacific Island countries was sourced from the *Progress Report on the Implementation of the HFA for the Pacific Islands Region* submitted by Pacific Islands Applied Geoscience Commission (SOPAC).

Approach and Framework: Section 5 follows the same approach as Section 3 in providing the overview in context of the five priorities of the HFA. However, the format for the GPDRR HFA Progress Reports used different questions and hence under some of the indicators the status or progress has not been adequately reported. While this section does not discount activities and issues that need further work and development, the authors have been mindful that this region has made significant progress in recent years which needs to be acknowledged and celebrated. Thus, this section attempts to provide a qualitative overview on key initiatives which can act as a point of reference for future reporting purposes.

Guidelines for developing National Reports for WCDR, 2005

Box 2.1 Extracts from Guidelines sent out by the UN/ISDR for National Reports at the WCDR

The following are the guiding questions provided to countries by the UN/ISDR for developing the National Report for WCDR, 2005.

Component 1: Political Commitment and Institutional Aspects

1.1 Are there national policy, strategy and legislation addressing DRR?

1.2 Is there a national body for multi-sectoral coordination and collaboration in DRR, which includes ministries in charge of water resource management, agriculture/land use and planning, health, environment, education, development planning and finance?

1.3 Are there sectoral plans or initiatives that incorporate risk reduction concepts into each respective department area (such as water resource management, poverty alleviation, climate change adaptation, education and development planning?

1.4 Is DRR incorporated into your national plan for the implementation of the UN Millennium Development Goals (MDGs), Poverty Reduction Strategy Paper (PRSP), National Adaptation Plan of Action, National Environmental Action Plans and World Summit on Sustainable Development, Johannesburg Plan of Action?

1.5 Does your country have building codes of practice and standards in place, which take into account seismic risk?

1.6 Do you have an annual budget for DRR?

1.7 Are the private sector, civil society, NGOs, academia and media participating in DRR efforts?

Component 2: Risk Identification

2.1 Has your country carried out hazard mapping/assessment?

2.2 Has your country carried out vulnerability and capacity assessments?

2.3 Does your country have any mechanisms for risk monitoring and risk mapping?

2.4 Is there a systematic socio-economic and environmental impact and loss analysis in your country after each major disaster?

2.5 Are there early warning systems in place?

Component 3: Knowledge Management

3.1 Does your country have disaster risk information management systems (governmental and/or non-governmental)?

3.2 Are the academic and research communities in the country linked to the national or local institutions dealing with disaster reduction?

3.3 Are there educational programmes related to DRR in your public school system?

3.4 Are there any training programmes available?

3.5 What kind of traditional, indigenous knowledge and wisdom is used in disaster-related practices or training programmes on DRR in your country?

3.6 Do you have any national public awareness programmes or campaigns on DRR?

Component 4: Risk Management Applications/Instruments

4.1 Are there any good examples of linking environmental management and risk reduction practices in your country?

4.2 Are financial instruments utilized in your country as a measure to reduce the impact of disasters?

4.3 Please identify specific examples of technical measures or programmes on DRR that have been carried out in your country.

Component 5: Preparedness and Contingency Planning

5.1 Do you have disaster contingency plans in place? Are they prepared for both national and community levels?

5.2 Has your government established emergency funds for disaster response and are there national or community storage facilities for emergency relief items mainly food, medicine, tents/shelters?

5.3 Who is responsible for the coordination of disaster response preparedness and is the coordination body equipped with enough human and financial resources for the job?

Component 6: Call for good practices in DRR

Component 7: Priorities you want addressed at the WCDR

Box 2.2 Indicators for monitoring progress on implementation of HFA

Following have been developed by UN/ISDR as core indicators for monitoring progress on each Priority for Action of the HFA. The HFA Monitor Tool available on www.preventionweb.net, provides the entire list of the Indicators and the guidance on their usage.

Core Indicators for HFA Priority for Action 1

1. National policy and legal framework for DRR exists with decentralised responsibilities and capacities at all levels.
2. Dedicated and adequate resources are available to implement DRR activities at all administrative levels
3. Community participation and decentralization are ensured through the delegation of authority and resources to local levels
4. A national multi sectoral platform for DRR is functioning

Core Indicators for HFA Priority for Action 2

1. National and local risk assessments based on hazard data and vulnerability information are available and include risk assessments for key sectors
2. Systems are in place to monitor, archive and disseminate data on key hazards and vulnerabilities
3. Early warning systems are in place for all major hazards, with outreach to communities
4. National and local risk assessments take account of regional / trans boundary risks, with a view to regional cooperation on risk reduction.

Core Indicators for HFA Priority for Action 3

1. Relevant information on disasters is available and accessible at all levels, to all stakeholders (through networks, development of information sharing systems etc)
2. School curricula, education material and relevant trainings include DRR and recovery concepts and practices.
3. Research methods and tools for multi-risk assessments and cost benefit analysis are developed and strengthened
4. Countrywide public awareness strategy exists to stimulate a culture of disaster resilience, with outreach to urban and rural communities

Core Indicators for HFA Priority for Action 4

1. DRR is an integral objective of environment related policies and plans, including for land use natural resource management and adaptation to climate change.
2. Social development policies and plans are being implemented to reduce the vulnerability of populations most at risk
3. Economic and productive sectorial policies and plans have been implemented to reduce the vulnerability of economic activities
4. Planning and management of human settlements incorporate DRR elements, including enforcement of building codes
5. DRR measures are integrated into post disaster recovery and rehabilitation processes
6. Procedures are in place to assess the disaster risk impacts of major development projects, especially infrastructure

Core Indicators for HFA Priority for Action 5

1. Strong policy, technical and institutional capacities and mechanisms for DRM, with a DRR perspective are in place.
2. 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
3. Financial reserves and contingency mechanisms are in place to support effective response and recovery when required
4. Procedures are in place to exchange relevant information during hazard events and disasters, and to undertake post-event reviews

Section 6

Approach and Framework: **Section 6** provides an **overview of regional initiatives on DRR** in Asia and the Pacific with brief details on regional organisations and their major regional programmes. This section largely focuses on the initiatives of inter-governmental sub regional organisations such as ASEAN, SAARC and SOPAC (as well as work done by ADPC and ADRC). The description is provided as 'before' and 'since' 2005 and aims to bring out some of the regional challenges in implementing DRR. It is recognised that a large number of UN agencies, bi-lateral agencies, technical institutes and civil society networks have been supporting various regional initiatives on DRR in the region primarily through their regional offices and networks. A list of these organisations and mechanisms is provided in ***Annex 4***; however, time and resource constraints did not permit an analytical overview of their work.

Section 7

Approach and Framework: The analysis presented in Section 4, 5, and 6 helps to identify the **continuing challenges for DRR** in the region and articulates possible **priorities to meet some of the challenges in the immediate three years**. These challenges are described in **Section 7**. It is anticipated that by identifying these today can provide guidance to Asia and the Pacific Island countries and all stakeholders as they plan for the future at the national, sub regional and regional levels to prioritise various elements of DRR and HFA for action. However, the basis has been the priorities articulated by the countries in the National Reports, in recent forums in Asia and globally, and through their programme frameworks. Given the long term nature of some of these challenges, the authors also looked back at how such challenges were formulated at earlier occasions; the start (1990), midpoint (1994), and end (1999) of the International Decade for Natural Disaster Reduction (IDNDR). These indicate the difficulties in articulating these challenges, of sweeping problem statements and vague motherhood generalisations, and of not pointing to solutions. On the other hand, this telescopic summary of such experiences over the last 17 years does point to change and progress. The section points tentatively and prescriptively to possible solutions and specific ways ahead.

This Report is mindful of the diversity of nations, the different geographic, social and economic contexts in which they operate and the differences in hazard and risk exposure from place to place and country to country. This variability across the region has led the overview to focus on qualitative and descriptive approaches gained by knowledge and expertise, and not to focus on quantitative methods. It is recognised that data on activities within nations varies given that different countries may have recorded information in different ways or used different criteria in selecting and evaluating information. Nonetheless, some consistency has been achieved through the use of certain common datasets, information sources and reporting mechanisms as described above. The Report also recognises that nations and others undertake a large amount of DRR work which is not specifically labelled as risk reduction but may come under headings of environmental management, education, social development, and health care. This information is difficult to collect and categorise and has been used only where specifically referred to by countries or others.

Box 2.3 Extracts from Guidelines sent out by the UN/ISDR for Reporting on Progress on the Implementation of the HFA, 2007

Guidelines for Reporting on Progress on the Implementation of the HFA, 2007

These guidelines have been prepared by the ISDR Secretariat to assist countries and organisations to respond to the reporting requirements that are set out in the HFA

HOW TO REPORT: The requested report consists of three parts:
Part A: Cover note This note identifies the reporting organisation, its reporting responsibility and the scope of the reporting provided.

Part B: Summary Analysis A short overview of around three (3) pages on progress toward implementing the HFA, highlighting national and regional context (risk), impact on people and economy, good practices and lessons learned. The summary is requested to be structured as follows:

- Brief description highlighting national and regional context;
- Summary on impact of initiatives on people and economy: - progress towards achieving the HFA strategic goals and priority areas;
- Recommendations if any, and updates in terms of planning and project including in changes in policies, rules and regulations.

Part C: Compilation of information This more detailed description of initiatives on DRR is requested to be reported in the format, which is structured on the five priority areas of the Hyogo Framework for Action. The format seeks information on objectives, main activities, results and achievements made, major challenges and lessons in implementing the initiative or programme and lastly, the next steps planned.

This Report has been extensively peer reviewed by selected experts from within the region and from the rest of the world. Their comments have been gratefully received and have been taken into consideration in redrafting this report.

2.4 Scope and boundaries of this report

Effective DRR involves broad ranging, and long-term programmes and activities that are embedded in policy, government programmes, private sector activities, and the work of NGOs and civil society organisations. These may run individually or conjointly over extended periods of time, perhaps many years and decades. Hence, though this Report's central element is one of describing the status of DRR at January 2005, it is recognised that this status is built upon work and effort that began a number of years prior to the WCDR. This is reflected in some of the commentary on progress made since the start of IDNDR in 1990; and the adoption of the Yokohama Strategy for a Safer World in 1994.

At the same time, given the short time frame in which DRR has been undertaken after the HFA, attributing 'cause and effect' relationships is problematic. The short time frame also does not permit a definitive statement of progress in all its wide range of activities and detail. Nor does it allow a confident attribution of why, or why not, progress has been made. Thus, although this Report's principal function is to present the state of play rather than to pass judgment and explain causes, it includes a degree of affectionate commentary and critical evaluation.

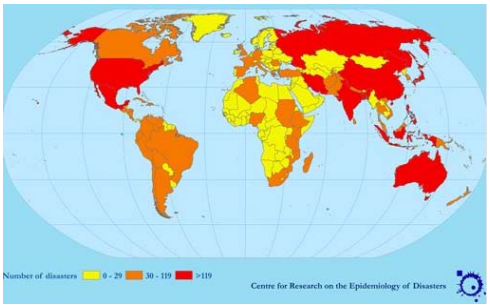
Section 3:
Risk Profile Overview of Asia and the Pacific

Section 3: Risk Profile Overview of Asia and the Pacific

3.1 Introduction

Globally, the number of recorded natural hazard-related disasters[2] has followed an increasing trend in recent years; from 272 in 1991, to 489 in 2005. Asia and the Pacific Region is no exception to this trend, with 107 disasters identified in 1991, increasing to 177 in 2005, according to data in the Emergency Events Database (EM-DAT), maintained by the Centre for Research on the Epidemiology of Disasters (CRED).

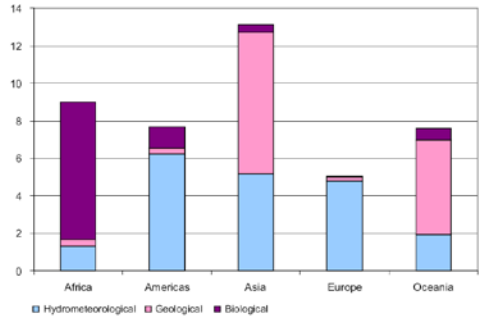
Box 3.1 Number of Natural Disasters by Country: 1976-2005



Source: OFDA/CRED

In fact, the figure in **Box 3.1** shows that in the last three decades, **countries in Asia and the Pacific Region experienced the highest number of natural disasters** registered, according to EM-DAT disaster classification.

Box 3.2 Average number of people reported killed, per million inhabitants, by continent and disaster origin: 1991-2005



Source: UN/ISDR, 2006

This also applies to the average number of reported deaths per million inhabitants being the highest in Asia for the period of 1991 to 2005, compared to the other continents during the same period **(Box 3.2)**.

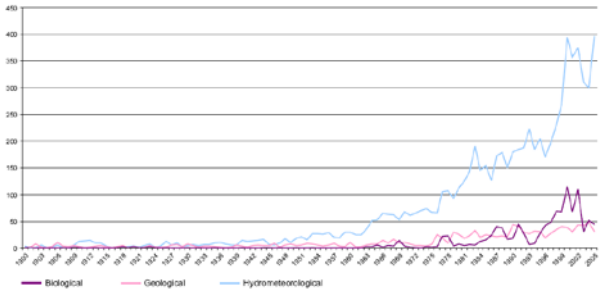
Average number of reported deaths per million inhabitants, by disasters is highest in Asia for the period of 1991-2005

The figure also highlights that the hazards associated with most deaths in Asia are of geological and hydro meteorological origin, with biological hazards linked to fewer mortalities.

[2] The entrance criteria for an event to be recorded as a 'disaster' in the EM-DAT database are at least one of the following: Ten or more people reported killed, a hundred people reported affected, declaration of a state of emergency, or call for international assistance. Unless otherwise stated, all statistics in this section originate from EM-DAT's database.

From 1900 to 2005, the **most significant increase in global hydro meteorological disasters has been evident in the past 50 years**, as well as considerable increases in biological disasters in more recent years **(Box 3.3)**. The trend in this increase in hydro meteorological disasters appears to be continuing, and is most likely related to climate change. Asia and the Pacific Region currently experience many losses from hydro meteorological disasters, and as these hazards increase in frequency and magnitude, the impact is likely to follow an increasing trend of associated disasters.

Box 3.3: Number of Natural Disasters Registered in EM-DAT Globally: 1900-2005



Source: UN/ISDR, 2006

3.2 Hazard Profile

As expressed in a hazard risk map prepared by OCHA (2006), **Asia and the Pacific Region are exposed to a wide variety of natural hazards.** These hazards range from tropical storms in the north western Pacific and Bay of Bengal, to intense geomorphologic activity in the Himalaya region and many areas of Indonesia, and to biological hazards in Southeast Asia.

In the period 1991-2005, the largest number of events in Asia and the Pacific by disaster type was flood, storm and earthquake

EM-DAT data indicate that during the period of 1991-2005, China experienced the largest number of natural disaster events in the region; namely, 335, (17% of the total); India experienced 220 (11%); followed by Indonesia with 160 (8%). The countries that experienced the fewest disasters during this same period were Brunei Darussalam (1 event), Turkmenistan (2 events), the Maldives (2 events), and East Timor (4 events).

Box 3.4 Number of Deaths and People Affected in Asia: 1991-2005

	Deaths per Million Inhabitants	People Affected per Million Inhabitants
Hydro meteorological	5.19	56486
Geological	7.54	793
Biological	0.39	63

Source: OFDA/CRED

From the data of natural hazard events in the region whose consequences met the criteria of 'disaster' between 1991 and 2005, **the largest number of events by disaster type was flood (661), storm (552), and earthquake or seismic activity (224).**

Box 3.4 highlights the number of deaths and people affected per million in the population of Asia, each year from 1991 to 1995. Significantly, **for hydro meteorological and geological events, the Asia Region was**

ranked highest, among five other global regions, for people affected by disaster. This indicates that to differing degrees, more people's lives and livelihoods were disrupted in this region by these disasters than in any other region.

3.3 Vulnerability Profile

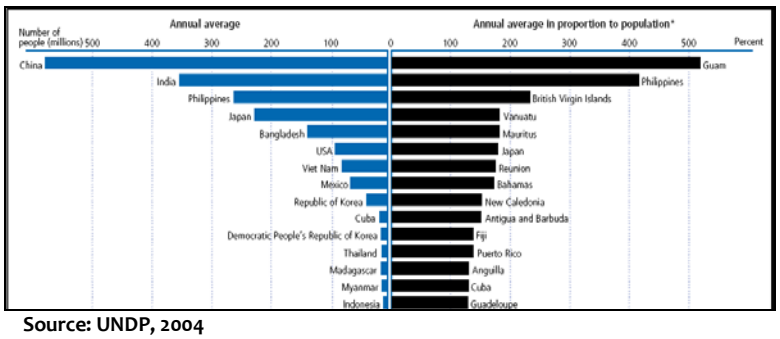
Contemporary thinking in DRR rejects the notion that the presence of a hazard alone is sufficient to generate disaster risk. To produce the risk, one requirement is that the area of the hazard has a vulnerable population; there are significant vulnerable elements in Asia and the Pacific. The huge populace combined with increasing population growth contributes in itself to higher vulnerability. Similarly, with a large number of developing countries in the region, significant structural vulnerability is evident. High levels of poverty, lack of infrastructure and resources, remoteness and civil conflict all contribute to the high levels of exposure to risk.

In this context, it can be noted that the region also has some of the fastest growing economies, which is leading to rapid change and development. **The transition to developed, market-based economies will bring a period when traditional coping mechanisms may no longer be adequate, along with erosions of social capital.** At the same time, new arrangements may not be sufficiently developed, robust, or embedded in society to provide the final intended level of social protection. Hence, it is essential to view disaster risk from an angle of both vulnerability, and hazard.

As an example (Box 3.5) of high exposure to hazards, of the 15 countries with the highest exposure to tropical cyclone hazards between 1980 and 2000, 11 of these were situated in the Asia and Pacific Region. The large (and highly concentrated) populations of China, India, the Philippines, Japan, and Bangladesh result in high numbers of people exposed to these cyclones. **High levels of exposure to the hazards, combined with vulnerable segments of the population, increase disaster risk in the region.** Also of significance is the high physical exposure, in proportion to the population, of small-island developing states in the Pacific.

Of the 15 countries with the highest exposure to tropical cyclone hazards between 1980 and 2000, 11 of these were situated in the Asian and the Pacific Region

Box 3.5: Physical Exposure to Tropical Cyclones: 1980- 2000



Source: UNDP, 2004

3.4 Disaster Risk Profile

The combination of a wide variety of hazards and vulnerability factors in Asia and the Pacific Region gives rise to a significant disaster risk in many geographical areas. As a reflection of rapid development in the region, assets and infrastructure are increasing (and are often concentrated in hazard-prone locations); therefore, economic losses following disaster events are likely to increase. However, the hugely varying degrees of development and diversities between countries in the region contribute to large variations in disaster risk.

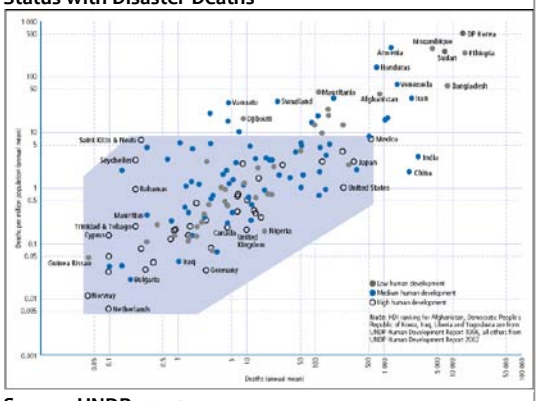
Box 3.6: Asian countries at Relatively High Economic Risk from Multiple Hazards (3 or more hazards), ranked by % of GDP at risk

	% of Total Area at Risk	% of Population in Areas at Risk	% of GDP in Areas at Risk
Taiwan, China	97.0	96.6	96.5
Japan	51.3	75.8	80.2
Philippines	35.8	72.5	78.7
Bangladesh	41.9	55.6	62.7
Republic of Korea	24.7	61.6	61.6
Guam	53.2	59.7	51.6
Uzbekistan	5.0	51.4	51.4
Islamic Republic of Iran	15.4	45.2	39.8
Indonesia	3.0	30.5	34.2
Hong Kong, China	51.4	29.5	28.2
Tajikistan	1.2	27.1	27.1
Syrian Arab Republic	7.5	24.3	21.2

Source: The World Bank, 2005

Based on the Global Hotspots studies[3], **12 of the 33 countries at relatively high *economic* risk from three or more hazards are in the Asia and Pacific Region.**

Box 3.7: Disaster Risk Index: Linking Development Status with Disaster Deaths



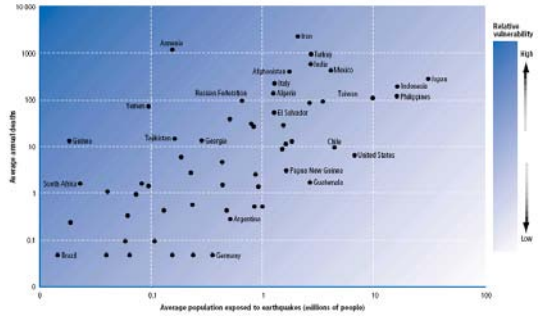
Source: UNDP, 2004

The data **(Box 3.6)** indicates that in these countries, large segments of population are located in areas that are at risk from disaster. Moreover,

[3] The Hotspots initiative, beginning in 2001 with the support of The World Bank, aims to provide a tool to get ahead of the disaster trend by highlighting areas that are most vulnerable to a number of hazards. With this information, it is hoped that development agencies and policy-makers will plan ahead for disasters and minimize their impacts.

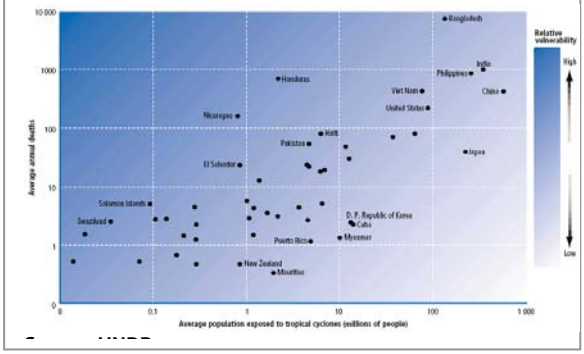
the location of GDP-generation in areas of disaster risk means that the economies of these countries risk serious damage as a consequence of natural-hazard related disasters. This also leads to the potential for significant set-backs to development.

Box 3.8: Relative Vulnerability for Earthquakes: 1980-2000

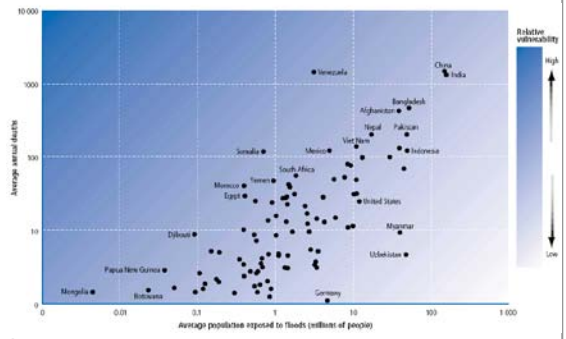


Source: UNDP, 2004

Box 3.9: Relative Vulnerability for Tropical Cyclones: 1980-2000



Box 3.10: Relative Vulnerability for Floods: 1980-2000



Source: UNDP, 2004

The Disaster Risk Index (DRI) developed by UNDP measures the risk of death in disaster, based on annual deaths per million and total annual deaths, attributed to earthquake, tropical cyclone, flood, and drought. Disaster risk is linked to the Human Development Index (HDI), and indicates synergies between low/medium HDI and high DRI. According to this table, **both DRI and HDI vary greatly in the countries of Asia and the Pacific Region – these range from low (Kyrgyzstan) to high (Armenia) values of disaster risk (Box 3.7).** The vast and dynamic variations in HDI in these regions are reflected in DRI differentiation.

Countries in the Asian and Pacific Region identified as experiencing relative high vulnerability to earthquake hazard **(Box 3.8)** are Armenia, Yemen, and Iran.

High vulnerability to tropical cyclone hazard **(Box 3.9)** is evident in Bangladesh, Vietnam, and India.

High vulnerability to flood hazard **(Box 3.10)** is apparent in Afghanistan, Nepal, and Pakistan.

Section 4:
DRR Status at the start of 2005: Decade of the implementation of HFA

Section 4: DRR Status at the start of 2005: Decade of the implementation of HFA

4.1 Introduction

In January 2005, the WCDR was held in Kobe-Hyogo, Japan to conclude the review of the Yokohama Strategy[4] and its Plan of Action and to update the guiding framework on disaster reduction for the 21st century. The WCDR adopted the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters; with its expected outcome, strategic goals and priorities as a guiding framework on disaster reduction for the next decade. This section of the Report uses the beginning of 2005 as the base year for providing the overview of DRR in Asia and the Pacific Region, as it is a useful reference point to represent the start of the ten year period for implementing the HFA. However, the status in 2005 is *de facto* an interpretative summary of initiatives undertaken in the 15 years since the start of the IDNDR decade in 1990, and in some cases even before.

The primary sources of reference are the National Reports submitted by Asian countries to the WCDR. Status is presented and organised under the Five Priorities for Action of the HFA and indicators under the HFA Monitor (For further detail see Section 2: Methodology)

4.2 HFA Priority for Action 1
Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation

One of the three strategic goals of the HFA is the 'development and strengthening of institutions, mechanisms and capacities to build resilience to disasters' and the first priority for action is to 'ensure that DRR is a national and local priority with a strong institutional basis for implementation'. Successfully implementing this priority requires fostering political commitment, community participation and developing or strengthening institutional, legislative and operational mechanisms for DRR. It involves integrating DRR into development planning and decentralising responsibilities where necessary. It also calls for assessing human and financial needs and allocating the necessary actions.

[4] The Yokohama Strategy for Safer World: Guidelines for Natural Disaster Prevention, Preparedness and Mitigation was adopted at the World Conference on Natural Disaster Reduction held in Yokohama, Japan in 1994 which was held as the mid-term review of the International Decade for Natural Disaster Reduction (IDNDR). Based on the adoption of 10 key principles, the strategy called for an accelerated implementation of a plan of action specific to community, national, regional, sub regional and international level. This served as the international blueprint in the field of disaster reduction

The following indicators have been used for providing an overview of this priority:

- Policy, plans and legal frameworks for DRR
- Institutional arrangements for DRR
- Decentralisation of DRR
- Funding for DRR.

4.2.1 Policy, Plans and Legal Frameworks for DRR

Core Indicator 1 under HFA Priority for Action 1: National policy and legal framework for DRR exists with decentralised responsibilities and capacities at all levels

By the beginning of 2005, a number of countries in the region had established, or were in the process of establishing, national **legal frameworks**. These took the form of laws, consolidated acts and series of decrees or orders that were oriented primarily towards disaster management, and in a few cases to the reduction of disaster risk. These countries included Afghanistan, Armenia, Bangladesh, China, Fiji, Iran, Japan, Jordan, Kazakhstan, Korea, Mongolia, Nepal, Pakistan, Papua New Guinea, Philippines, Russian Federation, Sri Lanka, Tajikistan and Vanuatu. ***Box 4.1*** provides a list of laws and acts from some of the countries in the region.

Disaster Management Legislations in 2005

Box 4.1 Selected List of National Disaster Management Legislations in 2005

Countries	National DM Legislation	Year of Enactment
Fiji	National Disaster Management Act	1998
Japan	Disaster Countermeasures Act	1961
Jordan	Civil Defence Law 18	1999
Malaysia	National Security Council Directive No. 20; Policy and Mechanism on Disaster and Relief Management	1997
Mongolia	Law on Disaster Protection	2003
Nepal	Disaster Relief Act	1982
Vanuatu	National Disaster Management Act No 31	2000

Source: National Reports submitted to WCDR, January 2005

While countries such as Afghanistan, Nepal and Pakistan, reported having disaster related laws and acts, Bangladesh, the Philippines and Sri Lanka were in the process of preparing and approving new legislations. In ***Afghanistan***, the *Disaster Preparedness Law* developed in the 1970s was recognised as needing revision. In ***Mongolia***, the newly enacted law, the *Law on Disaster Protection* of 2003, served as an overarching legal framework for disaster prevention, in ***Japan***, the *Disaster Countermeasures Act* ***(Box 4.2)*** of 1961 served as the basis to reduce disaster risk.

However, the existence of disaster related legislations did not always indicate that appropriate attention was being given by the countries towards DRR and as evident from several of the above-mentioned

examples, they primarily looked into disaster response and the management of emergencies. For example, the *National Disaster Relief Act* of ***Nepal*** (1982) acted as the national policy and strategy for all kinds of natural disasters but primarily addressed disaster response and not risk reduction. Similarly, ***Pakistan*** has had the *National Calamities (Prevention and Relief) Act* since 1958, which only provided the basis for maintenance and restoration of order in areas affected by certain calamities and for prevention, control and relief against such calamities. In ***Jordan*** and ***Tajikistan***, the civil defence related laws or decrees were relied upon to guide the management of emergencies and to govern the protection of the population from impacts of disaster.

On the other hand, countries such as ***China*** have had more than 30 laws and regulations related to disasters which covered elements of response, preparedness and mitigation. Such examples are the *Law on Water and Soil Conservation*, *Law on Earthquake Prevention and Disaster Reduction*, *Law on Fire-Fighting*, and *Law on Meteorology*, amongst others. The *Law on Earthquake Preparedness and Disaster Reduction* of 1998 was among a few which provided a holistic base and looked into all aspects of DRR with emphasis on prevention and links to China's State Plan for national economy and social development. Leadership responsibility was ascribed to various levels of government, and agencies at each level were charged with carrying out earthquake disaster preparedness and reduction work in accordance with their own assigned function. There were specific provisions for earthquake monitoring and predicting, seismic resistant construction, and developing citizen awareness and capabilities for rescue. In addition,

Box 4.2 Disaster Countermeasures Basic Act, Japan

Japan's policy and legal arrangements for DRR are given in the *Disaster Countermeasures Basic Act* passed in 1961 and revised in 1997 based on lessons learned from the Great Hanshin-Awaji Earthquake. The revised Act aims to remedy inadequacies in the old disaster reduction framework and promote comprehensive and systematic efforts to reduce disasters. The Act has five main foci:

- Provide public financial resources to cope with disaster
- Clarify disaster reduction responsibilities and implement programmes to prepare for, provide emergency response to, and recover from disaster;
- Promote comprehensive administrative efforts towards disaster reduction;
- Promote systematic administrative efforts towards disaster management; and
- Set out procedures for proclaiming disaster emergencies

Approximately 5% of the national budget was allocated in fiscal year 2001. Although not yet a provision, Japan categorises the use of funds for disaster management in four categories: research and development, disaster preparedness, and conservation, disaster recovery and reconstruction

For before, during and after disasters, the Act defined roles and responsibilities for

- The Prime Minister
- The State and the Central Disaster Prevention Council
- The Prefecture and the Prefecture Disaster Prevention Council
- A city, town or village and their disaster prevention council
- National and local public corporations
- Residents and others.

Source: ADRC 2002

Disaster Countermeasures Basic Act, Japan

there were requirements for national, local and agency emergency plans, and guidelines for post earthquake relief and reconstruction.

In ***Sri Lanka***, the *National Disaster Management Bill* was drafted and submitted to parliament in 2003 to obtain legal approval. In ***Bangladesh***, the legislation was in the drafting process and was to be placed before parliament to address the issue with a more holistic and comprehensive approach. This entailed planning and undertaking all processes within a risk management context. These processes include hazards identification, vulnerability analysis, prevention, mitigation, preparedness, and response and recovery efforts.

In ***India***, each state had been advised to enact Disaster Management Acts. Two states, Gujarat and Orissa, had already enacted such a law; the *Gujarat State Disaster Management Act* and *Orissa Disaster Management Act* of 2003, and other states were in the process. These Acts provided adequate power for authorities coordinating response as well as for required mitigation and prevention measures. The states' governments had also been advised to convert their *Relief Codes* into Disaster Management Codes by including aspects of prevention, mitigation and preparedness.

In some countries, aspects of disasters were addressed in other laws on a sectional basis but without a formal overarching legal framework. But again, this applied mainly to disaster response. For mitigation and planning purposes, laws in many countries were still the sole responsibility of individual ministries. An example was reported by ***Pakistan,*** which addressed disaster management in legislations such as the *Pakistan Environmental Protection Act* of 1997. Similarly, ***Vietnam*** reported addressing risk reduction through sectoral laws, such as the *Land Use Law* which regulated residential development to avoid construction in disaster prone areas, and the *Law on Forest Protection* which included policy on afforestation, forest protection, and fire prevention. However, the formal responses to this issue may not represent the real situation. This is because the responses understate regional status, partly since legislation that is relevant to DRR, such as laws governing development, civil protection, environmental management and social welfare, is not seen as being a formal part of the DRR system and therefore is not reported.

Although there was some inconsistency in the understanding of policy and strategy, several countries reported their **policy, framework or strategy**. At the beginning of 2005, countries such as India and ***Lao PDR***, had a defined National Strategy/Framework on Disaster Management or National Strategies for particular disasters, as in ***Vietnam***. The *First National Strategy and Action Plan for Mitigating Water Related Disasters* was prepared by Vietnam in 1994 and though it identified the need for a holistic approach to disaster management with engineering, institutional and social measures to reduce vulnerability and increase capacity, it addressed only water related hazards. ***India*** too had developed the *National Disaster Framework* (a roadmap) in 2003, which acted as a strategy for the development of institutional mechanisms, disaster prevention, early warning systems, disaster mitigation, preparedness, response and human resources development. Based on this, the State Governments/Union Territories Administrations were expected to develop their respective arrangements.

Countries such as Armenia, Cambodia, Indonesia, Pakistan, Philippines and Uzbekistan reported an existing National Policy on Disaster Management; and countries such as Bangladesh and India were in the process of formulating national policy documents. However, the focus of these policies differed. While the ***Pakistan*** *National Disaster Management Policy* revolved around a two pronged flood management strategy, which looked at both structural and non-structural measures, ***Indonesia***'s *National Policy on Disaster Management* regulated by the government in its National Development Plan looked into aspects of disaster preparedness and response. In ***Armenia***, the national policy gave special emphasis to the integration of efforts and the promotion of international cooperation on disaster management. Similarly, although the ***Philippines'*** *State Policy on Disaster Management*; *Presidential Decree No 1566*, promulgated in 1978, primarily dealt with emergency response, it was supported by additional laws on disaster preparedness, mitigation and response. In addition, ***Uzbekistan*** reported developing its state policy on forecasting, prevention, and actions for emergencies.

In some cases where there was no policy, there was, however, recognition among the countries for the need to initiate a process of developing a policy framework. For example, ***India*** had decided to enunciate a *National Policy on Disaster Management* and accordingly a draft policy had been formulated and was, at the time of the WCDR in 2005, shortly expected to be put in place. The policy intended to inform all spheres of central government activity and take precedence over all existing sector policies. Similarly, in ***Bangladesh*** the draft *National Policy on Disaster Management* emphasised a group of broad based strategies which includes management of both risk and the consequences of disasters as well as prevention, emergency response and recovery, involvement of the community in preparedness and the importance of non-structural mitigation measures.

Vietnam reported not having a National Policy on Disaster Management and reported that it addressed DRR through sector policies, such as the *Land Policy*, *Policy on Environmental Protection* and more importantly the *Policy on Water Resource Management*. The state also has separate recovery policies; namely, *Policies for Living with Floods*, for the aftermath of natural disasters and in flood prone areas where there were no dykes.

However, it is observed that the formulation of policies has often been triggered by disasters themselves and they have become turning points for improvements in disaster management and DRR. ***Box 4.3*** provides a few examples of such policies.

National governments typically undertook implementation of their disaster related policies through **disaster management plans**. Only a few countries in the region had such a plan to cover both national and sub national levels. ***Box 4.4*** provides examples of some of these countries.

Box 4.3 Significant disasters that led to new laws and policies on disaster management

- 1990/91 The eruption of Mt. Pinatubo and Baguio Earthquake saw consolidation of NDCC in Philippines
- Cyclone in Bangladesh in 1991 gave birth to a separate Disaster Management Bureau in 1993
- Kobe earthquake led to fundamental review of Japanese building controls as well as national and regional disaster management arrangements
- Typhoon Linda and the 1998 and 2000 floods in Vietnam led to better implementation of the 1994 Water Disaster Management Plan and Development 2001 NDM partnership
- El Nino induced forest fires showed the regional scale of disaster and regional response (ASEAN Haze Task Force) and led to adoption of ASEAN Agreement on Trans Boundary Haze Pollution Control
- After the 1996 and 1998 Anhui and Yangste Floods, China adopted a Natural Disaster Reduction Plan (1998-2010)
- In India, between 1998 and 2000, a series of disasters, floods, earthquakes and the Orissa super cyclone, expedited the formation of a high power committee (HPC) for disaster management policy and plans. The way the disasters were managed raised expectations for wide ranging institutional reform.
- Mekong Floods in Cambodia and Vietnam led to regional river basin approach to Flood Management and Mitigation (FMM) led by the Mekong River Commission (MRC)
- Gujarat Earthquake in 2001 shook India and accelerated the HPC report and the shift of responsibility in disaster management from the Ministry of Agriculture to Home Affairs.

Source: Rego, 2002-updated

National Disaster Management Plans

Box 4.4 Selected List of countries with National Disaster Management Plans

Country	National Disaster Management Plan
China	National Natural Disaster Reduction Plan (1998-2010)
Fiji	National Disaster Management Plan
Kazakhstan	National Natural Disaster Preparedness Action Plan of 2001
Tajikistan	National Disaster Preparedness Plan (under preparation)
Thailand	National Civil Defense Plan (1989)
Uzbekistan	Disaster Management Plan
Vanuatu	National Disaster Management Plan of 2001

Source: National Reports submitted to WCDR, January 2005

The Government of the People's Republic of ***China*** was one of the first to promulgate its *National Natural Disaster Reduction Plan* (1998-2010). It was also the first plan formulated in accordance with the Ninth Five-Year National Economic and Social Development Plan and the long-term objective of 2010. The Plan identified guiding principles for disaster reduction contributing to socio-economic development and disaster prevention and relief. Likewise, the Government of the Republic of ***Kazakhstan*** developed its *National Natural Disaster Preparedness Action Plan* and, as evident in its name, it primarily focused on disaster preparedness and response.

Certain countries reported national and sectoral development plans which incorporated disaster related elements. ***Nepal***'s *Tenth Year Plan* makes it mandatory to include environmental impact and natural disaster appraisal studies for each infrastructure project. Similarly, in ***Bangladesh*** the *National Water Management Plan* recognised the importance of implementing effective non-structural measures to reduce the impact of floods and erosion. In addition, the *National Environment Management Action Plan* took into account disaster management and risk reduction as vital components.

4.2.2 Institutional arrangements for DRR

Core Indicator 4 under HFA Priority for Action 1: A national multi-sectoral platform for DRR is functional

Most countries in the region such as Armenia, Bangladesh, Cambodia, India, Iran, Japan, Jordan, Kazakhstan, Korea, Kyrgyzstan, Mongolia, Papua New Guinea, Philippines, Tajikistan, Thailand and Uzbekistan had institutional arrangements for disaster management (DM), with a set of defined protocols which assigned roles and responsibilities and which identified lines of communication and accountability. These arrangements were multilayered and provided for inter-ministerial, interdepartmental working arrangements.

The nature of the mechanisms tasked with disaster management differed from country to country with most focusing on emergency management and very few looking holistically at DRR. For example, ***Jordan*** had the *Higher Council of Civil Defense* as the main government authority for emergency management and ***Armenia*** had the *Emergency Management Administration*. Similarly, in the Central Asia Republics of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan, interagency coordinating bodies for disaster response have existed since the early 1990s and some of them had been inherited from the former Soviet Union. In an emergency, all relevant ministries and government institutions automatically became subordinate to the inter-agency committees for implementing their direct functions and providing assistance.

However, some countries such as ***Iran*** reported having a *National Disaster Task Force* as a coordinating inter-organisational body whose tasks included coordinating relief operations during disasters and coordinating with research organisations in non-disaster situations. Similarly, in ***Japan***, the *Central Disaster Management Council* ensured comprehensive disaster risk management actions and in ***South Korea*** the *National Emergency Management Authority* managed overall measures to counter natural disasters.

Similarly, the ***Philippines***, ***Indonesia*** and ***Bangladesh*** had the *National Disaster Coordinating Council*, the *National Natural Disaster Management Coordinating Board* (BAKORNAS), and the ***Inter-Ministerial Committee of Disaster Management*** since 1978, 1967 and 1972 respectively. In comparison, ***Cambodia*** and ***Lao PDR*** established National Committees years later in 1995.

While most of these institutions adopted a multi-hazard approach, in some countries the institutions focused on a single hazard, usually the one that was perceived to have the highest national risk. Such was the case in Pakistan and Vietnam where the focus was on floods. In ***Vietnam***, the *Central Committee for Flood and Storm Control* established in 1955 was responsible for assisting the government in floods and storms, including mitigation, preparedness, response and recovery. In ***Pakistan***, the central responsibility lay with the *Federal Flood Commission*, which was responsible for policy making, planning and coordinating with different provinces and agencies to implement the policy. The networks, resources and skills that applied to flood and storm management were also applied to other disasters when required.

In cases where a strong institutionalised base was formally lacking, as in ***Bhutan***, it was acknowledged in its National Report that this was a weakness and that plans were in place at the start of the decade to formally institutionalise DRR. Bhutan recognised that the existing arrangements for interagency co-operation had been sufficient to manage events to date, and although it did not have a set of structured arrangements in place, it was planning to develop and implement a comprehensive set of arrangements. Nevertheless, the *Ministry of Home and Cultural Affairs* coordinated operational activities. This can be characterised as an *ad hoc* set of arrangements that had previously worked adequately but which now needed improvement.

Box 4.5 shows a list of national focal points related to disasters across the region and the diversity across ministries.

Box 4.5 Selected List of Focal Agencies for Disaster Management in January 2005

Country	Focal agency for Disaster Management
Bangladesh	Ministry of **Food and Disaster Management**
Bhutan	Department of Local Governance, Ministry of **Home and Cultural Affairs**
Iran	Ministry of **Interior**
Kyrgyzstan	Ministry of **Emergency Situations**
Korea	National Emergency Management Authority, Ministry of **Government Administration and Home Affairs**
Lao PDR	National Disaster Management Office, Ministry of **Labour and Social Welfare**
Philippines	National Disaster Coordinating Council, Department of **National Defense**
Singapore	Ministry of **Home Affairs**
Sri Lanka	National Disaster Management Center, Ministry of **Women's Empowerment and Social Welfare**
Tajikistan	Ministry or **Emergency Situations and Civil Defense**
Vietnam	Central Committee for Flood and Storm Control, Ministry of **Agriculture and Rural Development**

Source: National Reports submitted to WCDR, January 2005

This diversity of focal points, which in most countries are the Secretariat of the National Councils, is in four clusters: Defence (armed forces response role), home/interior (involvement of response agencies and local governments), agriculture/food (major hazards, floods, drought and impact on agriculture and food security), and social welfare (relief distribution). These clusters reflect an administrative structure and orientation, location of response resources, types of disasters and sectoral impacts, as well as the importance of the distribution of relief.

In this context, it is worth noting that with the evolving understanding of the concept of DRR, the institutional structures in many countries have also undergone dramatic change over the years. This is seen with the functions related to disasters moving from the responsibility of different ministries at different points of time to an approach that is more planned and comprehensive. For example, up to 1988 disaster management in ***Sri Lanka*** was the responsibility of the Ministry of Social Services. From 1989 to 1994 the Ministry of Rehabilitation, Reconstruction and Social Welfare became responsible, and then from 1994-1995 it passed to the Ministry of Health and Social Services. The following year accountability was returned to the Ministry of Social Services and the *National Disaster Management Centre* was set up under the Department of Social Services. Likewise, in India, disaster management responsibilities for all disasters, except drought, moved from the Ministry of Agriculture to Home Affairs.

The establishment of National Platforms was identified as a priority to be pursued in all countries. It was agreed that these platforms were suitable institutional mechanisms and multi-stakeholder partnership bodies for achieving broader disaster reduction goals. During the IDNDR, several countries established national IDNDR committees which served as important (and in some cases the only) mechanisms for inter-ministerial cooperation, consultation and coordination on disaster reduction. The work of the national committees of China, Iran and Vietnam are noteworthy. However, in the decade after the IDNDR, these committees became inactive due to the absence of formally assigned roles in the institutional arrangements.

In their reports, countries confirmed the need to have National Platforms which would work on implementing specific programmes, similar to the manner of IDNDR committees. ***Bangladesh*** reported initiating this consultation and participation between government departments, NGOs and the Bangladesh Red Crescent Society. Similarly, ***Kazakhstan*** reported making progress in the creation of an effective and efficient National Platform with the involvement of civil society organisations and scientific institutions. This was combined with the government's strong commitment and support to enhance the capacity and efficiency of the platform to prepare and respond to disasters.

4.2.3 Decentralisation of DRR

Core Indicator 3 under HFA Priority for Action 1: Community participation and decentralisation are ensured through the delegation of authority and resources to local levels

Since disasters directly affect communities, effective DRR arrangements need to look into decentralising responsibility and executive capacity. In order to have impact and to be effective, there need to be mechanisms at sub national levels to coordinate disaster management. The importance and existence of such mechanisms was reported by a few countries such as India, Indonesia, Nepal and the Philippines, where relevant institutional arrangements extend from national to provincial and local levels. For instance, in the ***Philippines***, the *National Disaster Coordinating Council* acted as the high level coordinator of disaster management activities and allocated resources to support disaster coordinating councils which are at the regional, provincial, city, municipal and barangay[5] level. With the Secretary of National Defence as Chairman, the *National Disaster Coordinating Council* included members from almost all department secretaries (ministerial levels) as well as the Philippines National Red Cross Society.

Another example is in ***India***, where at the national level, the *Ministry of Home Affairs* had the responsibility for disaster management and the Ministry's Central Relief Commissioner coordinated relief operations for natural disasters. However, the basic responsibility for undertaking rescue, relief and rehabilitation was that of the *Department of Relief & Rehabilitation* of the respective state governments. The states had also been advised to set up disaster management authorities under the Chief Minister comprising of ministers of relevant departments. Such authorities had already been set up in two states; namely, the *Gujarat State Disaster Management Authority* and the *Orissa State Disaster Management Authority*. The objective of these authorities was to ensure that mitigation and preparedness are seen as the joint responsibility of all departments concerned and that disaster management concerns were mainstreamed into their programmes. At the district level, the District Magistrate was the chief coordinator and focal point for coordinating all activities related to prevention, mitigation and preparedness, apart from existing responsibilities pertaining to response and relief. The District Coordination and Relief Committee were reconstituted into Disaster Management Committees with officers from relevant departments being included.

Besides responsibility on national levels, involvement of communities in disaster related activities was reported by other countries; namely, Afghanistan, Bangladesh, India, Indonesia, the Philippines, Thailand and Vietnam. ***Afghanistan*** reported the involvement of the Afghan Red Cross Society, NGOs, and communities in local hazard mapping exercises. In the ***Philippines*** NGOs took the lead in training communities on citizen based development oriented disaster response.

[5] *Barangay* (Tagalog: *barangay*) also known by its former name, the *barrio*, is the smallest local government unit in the Philippines and is the native Filipino term for a village, district or ward.

4.2.4 Funding for DRR

Core Indicator 2 under HFA Priority for Action 1: Dedicated and adequate resources are available to implement disaster risk reduction at all administrative levels

National governments earmarked or provided funds for disaster related activities through various means and at various levels. Most of these were allocated for disaster response and recovery as well as for the operations of national disaster coordinating agencies [This is also discussed under HFA Priority for Action 5 *(Section 4.6.3)*]. Again, very few countries reported using these funds for DRR initiatives. For instance, the ***Philippines*** reported having a budget specifically for preparedness and mitigation with 5% of the budget of each local government unit earmarked for calamity relief and response operations. The Philippines' national government's annual appropriations did provide specific budgets for risk identification, preparedness and structural mitigation and these were in addition to budgets for emergency response and rehabilitation. These specific budgets were allocated to specific agencies like Philippines Atmospheric, Geophysical and Astronomical Services, Philippines Institute of Volcanology and Seismology, Mines and Geo Science Bureau and Environmental Management Bureau for risk identification, Office of Civil Defense for preparedness and Department of Public Works and Highways for structural mitigation.

Likewise, in ***Bangladesh***, the Ministry of Food and Disaster Management received an annual budget to operate a Secretariat, the Disaster Management Bureau and the Department of Relief and Rehabilitation. The national budget provided for block allocation in order for the Ministry to deal with disaster related activities. In addition, the government allocated funds specifically for projects to contribute to initiatives for donor-supported disaster management and risk reduction. The country also reported having a number of financial instruments in place, such as agricultural credit, micro-credit finance and community funds; namely, the Vulnerability Group Development, Food for Work and Cash for Work. Micro-credit was being used in Bangladesh at community level, for risk reduction, construction and reinforcement of houses, raising the level of plinths of houses in low-lying areas, and other retrofitting measures as well as for post-disaster reconstruction and rehabilitation measures.

The ***Russian Federation*** and ***Tajikistan*** also allocated funds specifically for prevention, mitigation and rehabilitation, although the level and amount of funding of the latter two were incompatible due to the economic situation in these countries and to the lack of political will.

Financial resources from other countries (bilateral donors and neighbours) and international organisations, including loans and assistance, were also reported by the countries as sources of funding for their DRR projects.

4.2.5 Summary of HFA Priority for Action 1; start of 2005

- Many countries in the region had **legislations** related to disasters, but most of these focused primarily on disaster response and management of emergencies and rarely on risk reduction. A similar pattern is observed in the **policies** and strategies. In many cases, the formulation of policies was triggered by disasters themselves.

- Only a few countries in the region had a **National Disaster Management Plan** covering both national and sub national levels, and some countries incorporated disaster related issues in sector development plans.

- Disaster related **institutional** set ups in these countries were mostly multilayered and provided inter-ministerial, inter-departmental working arrangements. Diversity of national focal points, which were mostly the secretariat of the National Councils, was observed typically in four clusters; namely, defence, home/interior, agriculture and social welfare.

- In most countries in the region, **national funds** were allocated for disaster response and recovery and for the operations of national disaster coordinating agencies but rarely for measures related to DRR.

4.3 HFA Priority for Action 2
Identify, assess and monitor disaster risks and enhance early warning

The HFA identifies that 'the starting point for reducing disaster risk and for promoting a culture of disaster resilience lies in the knowledge of the hazards, and the physical, social, economic and environmental vulnerabilities to disasters that most societies face, and of the ways in which hazards and vulnerabilities are changing in the short and long term, followed by action taken on the basis of that knowledge.' *(HFA, Paragraph 17)*. This forms the second priority for action of the HFA. It calls for a thorough understanding of the risk and its parameters; namely, hazards, vulnerabilities, and capacities. It also highlights the importance of availability of data, information, and above all a comprehensive process, which would allow this understanding to be reflected in policies and decisions at a national or local level. The following are used as indicators to provide an overview of this priority:

- Assessments for DRR
- End to end early warning systems
- Trans-boundary risks featured in national and local risk assessments.

4.3.1 Assessments of DRR

Core Indicator 1 under HFA Priority for Action 2: National and local risk assessments based on hazard data and vulnerability information are available and include risk assessment for key sectors
Core Indicator 2 under HFA Priority for Action 2: Systems are in place to monitor, archive and disseminate data on key hazards and vulnerabilities

One of the key principles adopted by the Yokohama Strategy and Plan of Action was that 'risk assessment is a required step for the adoption of adequate and successful disaster risk reduction policies and measures'. The importance of maintaining hazard related information, in terms of a historical database of disasters, and hazard profiles was recognized by many countries of the region. Accordingly, these countries had undertaken or had access to hazard relevant information, usually about the most serious hazards to which they were exposed. However, the information collected was irregular in quality and totality, especially for vulnerability assessment. Furthermore, the information was rarely interpreted from a risk assessment angle, which requires a perspective of the three parameters of risk; namely hazard, vulnerability and capacity.

Hazard mapping had been carried out by many of the countries of the region at various scales and for various disasters. While in India, earthquake, wind, storm and flood hazard maps were developed for each state and union territory, in the Philippines mapping for geo hazards was done at a regional level only. In Papua New Guinea, hazard mapping was undertaken in some provinces focusing on areas prone to volcanic eruptions. Comprehensive geophysical atlases existed for several of the countries in central Asia. Countries were increasingly using Geographic Information Systems for carrying out hazard mapping; for example, Iran and Korea were specifically using it for analysing areas susceptible to landslides. With the rapid growth in urbanisation and the risk it poses, hazard mapping was also being carried out for urban centres; for example, the detailed seismic hazard map for Metro Manila in the Philippines, the landslide hazard maps for Gangneung City in South Korea, and seismic hazard micro-zonation map for Yerevan City in Armenia. In most cases the maps were developed by technical agencies at the national level or other concerned line agencies responsible for managing the hazards. In some cases, such as in Ward No 34 of Kathmandu Metropolitan City, Nepal, the citizens took the initiative to develop ward level maps for flood, fire and environmental degradation. Though these maps of Ward No 34 of Kathmandu Metropolitan City required further technical improvement for designing and structural intervention works, they were useful for identifying problems and raising awareness.

One of the earliest initiatives in the region on a national scale using a multi-hazard approach has been in ***India.*** Here, as a follow up to the Yokohama Strategy for a Safer World during the midterm review of the IDNDR, the then Ministry of Urban Development formed an Expert Group to prepare the first ever *Vulnerability Atlas of India*. This Atlas, issued in 1997 by the Building Materials and Technology Promotion Council, contains hazard maps drawn at a scale of 1: 2.5 million for earthquakes, cyclones and floods and district risk tables of housing stock. Since its publication, the Atlas has proved to be an effective initial tool for prevention, preparedness and mitigation, particularly for housing and related infrastructures. It aims to help the state

governments and local authorities to strengthen regulatory frameworks by incorporating DRR measures in the building by-laws, master plans and land-use planning regulations. It is also to be used as a baseline to enable appropriate objectives to be set for recovery programmes; it has already been used in specific instances for each objective.

Another early example of national level mapping has been the *Atlas of Natural Disasters in* ***China***; published in 1992 and jointly compiled by the People's Insurance Company of China and Beijing Normal University in collaboration with professors and experts from Chinese universities and scientific research institutions. The Atlas provides the temporal and spatial patterns of the distribution of natural disasters in China. Thus, it not only provides a base for the authorities at different levels in charge of the reduction and prevention of disasters to make strategic decisions, but it is a useful informative material for scientific research institutions and educational units to carry out further research on the laws of occurrence and evolution of natural disasters. The Atlas includes five parts: the hazard formative environments and hazard-affected bodies, the hazard formative factors, disaster effects, monitoring and warning systems, and countermeasures for natural disaster reduction. The Atlas was subsequently updated and printed in 2003.

Similarly, ***Japan*** had carried out hazard mapping with regard to tsunamis, tidal waves, flooding, volcanic eruptions and earthquakes. The country had also made progress in the development of dynamic flood maps that predict how flooding would spread over time. These maps with scales varying from 1: 2,500 to 1: 25,000 have been developed by local public bodies and respective line agencies and many of them have been made available to the public on the Internet and elsewhere.

Hazard mapping was often regularly carried out by the line agencies responsible for managing the hazard, such as water authorities and public works agencies. Often these maps formed the basis for consolidated national exercises of multi-hazard mapping by National Mapping Authorities or Disaster Management Agencies. For example, in ***Indonesia*** the Ministry of Public Works was responsible for flood mapping and the Ministry of Mining and Energy for landslide mapping. The Government of Indonesia prepared maps every year depicting degrees of forest and land fires and the proneness to flooding in order to prevent and control the impacts. The BAKOSURTANAL, Coordinating Board for Land Use Survey, coordinated mapping activities in the country and integrated various hazard maps into single standardised maps for easier analysis.

In the ***Philippines***, The Mines and Geosciences Bureau was responsible for the mapping of geo hazards, except those that are related to earthquakes and volcanoes, which are handled by the Philippines Institute of Volcanology and Seismology. The geo hazard mapping was done at a scale of 1: 250,000 and only for regional planning. For seismic hazards, regional susceptibility maps at a scale of 1: 250,000 were available for ground rupture, ground shaking, liquefaction, earthquake-induced landslide and tsunamis. A detailed seismic hazards map for Metro Manila was completed and similar maps for other cities were in the pipeline. For hydro meteorological hazards, countrywide maps were developed by the Philippines Atmospheric, Geophysical and Astronomical Services for extreme wind, rainfall, thunderstorm, storm surge and tropical cyclone paths. Flood hazard and vulnerability

mapping was undertaken on a very limited scale. These maps were primarily used by the national and sub-national Disaster Coordinating Councils but were also distributed to numerous other departments, including the Regional Development Councils for their development planning activities, Department of Interior and Local Government for land use planning, Department of Public Works and Highways for infrastructure development and planning, Department of Environment and Natural Resources for environmental and development regulations and National Housing Authority for housing and land development.

Similarly, in ***Armenia***, the National Survey for Seismic Protection was responsible for developing hazard maps for the country. These maps were at the disposal of the Emergency Management Administration and used by its subdivisions. They were also made available to the territorial management bodies and local authorities.

In ***Sri Lanka***, landslide-hazard zone mapping was initiated by the National Building Research Organisation in partnership with other agencies, such as the Urban Development Authority and the Centre for Housing Planning and Building. These maps had been used to prepare the development plans of cities like the Ratnapura Municipal Council in Ratnapura district, to help land-use policy planning in Mahaweli upper watershed area, and to develop the disaster mitigation action plan for Nawalapitiya Urban Council in Kandy district.

In order to understand the underlying causes of loss exposure there had been various initiatives in the countries on **vulnerability analysis**; however, most of them were carried out in various geographical areas with specific hazard exposure and rarely on a national scale. ***Bangladesh*** reported that many NGOs carried out vulnerability and capacity assessments in selected geographical locations as part of their developmental programme but a complete country level assessment was yet to be embarked on. Similarly, the government of the Republic of ***Tajikistan*** supported and participated in a range of vulnerability assessments in particular geographic areas and the work focused on specific categories of social and economic infrastructure.

Afghanistan reported carrying out a vulnerability assessment in 2002 using four proxy indicators: access to food, health facilities, district centres to provincial centres, and the presence of unexploded ordnances. In 2003, the *National Risk and Vulnerability Assessment* was carried out and led by the Vulnerability Analysis Unit of the Ministry of Rural Rehabilitation and Development; it was later updated in 2004. Nevertheless, this assessment had a drawback in that it did not look into the capacity of the communities.

There were also ongoing initiatives at a sub-national level, for instance, in Gujarat, ***India,*** where the Gujarat State Disaster Management Authority was developing a *Composite Risk Atlas for the Gujarat State*. Derived from one of the largest and most detailed digital GIS databases prepared in India, the Atlas aimed to cover all this state's 226 talukas[6], and 25 districts, its six natural and man-made hazards, and also the physical, social and economic vulnerability of its people and their assets at sub district level.

[6] Sub district

Disaster impacts and needs assessments were carried out by the countries immediately after disasters. However, no standardised methodology was used for carrying out these assessments. There had been efforts at the regional level to standardise these methodologies, such as the *Post Disaster Damage and Needs Assessment* of ADPC in 2000, which was tested in the Philippines and Thailand. In addition, there is also an ongoing initiative by the Gujarat State Disaster Management Authority to develop a *Methodology for Damage and Loss Assessment* for the State of Gujarat.

4.3.2 End-to-End Early Warning Systems

Core Indicator 3 under HFA Priority for Action 2: Early warning systems are in place for all major hazards, with outreach to communities

The IDNDR had encouraged all countries to have ready access to warning systems at global, regional, national and local levels by the year 2000. It was highlighted in the Yokohama Review that since 1994, the technological capacities of early warning systems have steadily improved and almost all countries have maintained services to monitor weather hazards and provided warnings of adverse conditions. However, the limitation was that it was often seen in the narrow technical sense of prediction service, with resulting weakness in knowledge of the risks faced, inadequate communication of warnings, and lack of preparedness and capacity to act on warnings.

Although early warning systems were in place, they only focused on the most severe hazards the countries faced and were often not end-to-end systems; they did not link international data through to national and local level. Countries such as China reported strengthening their early warning and forecasting system for a variety of hazards including earthquake, flood, forest fire and even pest infestation, and Japan reported having a nationwide network of early warning systems for storms, blizzards, torrential rains, heavy snow, landslides, tsunamis and floods. On the other hand, countries such as Bangladesh, focused more on cyclones and floods, and Armenia focused on earthquake hazard monitoring.

Similarly, countries such as India, Indonesia and Pakistan reported that established forecast and monitoring systems for the most common hazards were in place. However, little has been reported on the systems having been established for communicating the warning at various levels and to the communities, even though the importance of warning communication was recognised by most of the countries in their reports. However, ***Bangladesh*** did have a well-established system through the government's Cyclone Preparedness Programme and the Bangladesh Red Crescent Society to disseminate cyclone warnings to the population residing in the low-lying coastal areas of the Bay of Bengal. Likewise, the ***Philippines*** had a partnership between the government and the community for sending out an early warning on volcanic eruption through the village heads. Similarly a state-of-the-art system (***Box 4.6***) of monitoring and early warning has been installed in the Republic of ***Tajikistan***, at Lake Sarez, which is a great threat to four countries; namely, Tajikistan, Afghanistan, Uzbekistan and Turkmenistan along the river Amu-Darya.

Although capacity enhancement for early warning and forecasting was also reported to be underway in China and Tajikistan, more needed to be done to increase its effectiveness. In Tajikistan, there is an ongoing initiative to look into reinforcing the seismic network and to strengthen the capacity of the Seismologic Service of the Republic of Tajikistan to monitor seismic events closely.

Thus, in most of the countries of the region specific capacities and institutions were in place with mandates and responsibilities for monitoring and forecasting. These agencies had capabilities but there were also gaps and needs, and often they were victims of a complex architecture with different agencies responsible for different hazards.

Box 4.6 Lake Sarez Risk Mitigation Project, Tajikistan

Lake Sarez has been a threat since the 1911 earthquake in Tajikistan. The building of the Usoy Dam has increased the fear of a catastrophic flood because of the unstable dam construction. In 1999, the European Community Humanitarian Office allocated funds for a number of measures to assess the nature of the hazard and to develop an emergency communication system for settlements in close proximity to the lake. The project resulted in, among others, the design and establishment of a two-way emergency communication system. The system consists of 11 HF radio stations located at Usoy Dam, Dushanbe, Khorog, the regional centre of Rushan. Radios were installed in the homes of local residents, which were at a higher elevation, to ensure they were accessible for emergency use and monitoring for warning. The houses hosting the radios were carefully selected by local leaders to ensure their careful use. In most villages, both the host household and its neighbours were trained to operate and maintain the radios and the solar systems powering them. For several years, this chain of communication had been the local residents' only link with the outside world. It has immensely changed their lives, and has been helpful in a number of emergencies caused by local hazards, traffic and other accidents. The Lake Sarez Mitigation Project, launched in 2000 under the auspices of the World Bank and the Ministry of Emergency and Civil Defence of the Republic of Tajikistan, built on the existing warning system and expanded it into a fully automatic monitoring and early warning system that has no analogue in central Asia. Two years after being fully installed in 2004, it began contributing to the main project goal of ensuring the safety of the population who are vulnerable to the potential outburst of Lake Sarez.

Lake Sarez Risk Mitigation Project, Tajikistan

4.3.3 Trans Boundary Risks Featured in National and Local Risk Assessment

Core Indicator 4 under HFA Priority for Action 2: National and local risk assessments take account of regional/trans boundary risks, with a view to regional cooperation on risk reduction

With no specific information requested in the *Guidelines for preparing National Reports* (Box 2.1) on this indicator, no information was provided by the countries on this indicator in the WCDR National Reports.

In Southeast Asia Region the Trans boundary impact of smoke, fire and haze arising from forest and land fires, led to concerted action including the development in 1998 of the Regional Haze Action Plan and the adoption of the 2002 ASEAN Agreement on Trans boundary Haze and Pollution Control. The agreement covers assessment, prevention, mitigation and regional response. The agreement has identified national agencies to undertake national assessments. The ASEAN Specialised Meteorological Center in Singapore undertakes regional monitoring of

hotspots and supports national agencies in undertaking their assessments.

So too the Mekong River Commission and its Regional Flood Management Programme issues regional flood forecast which are used by national flood forecasting and warning centres of riparian countries; Cambodia, Lao PDR, Vietnam and Thailand in issuing their national flood forecasts.

4.3.4 Summary of HFA Priority for Action 2; start of 2005

- **Risk assessments** were not a common feature in the countries of the region. Although in many countries hazard assessments were being carried out at various scales and for various disasters, vulnerability assessments were more often than not rare, especially at a national level. More importantly, it remains unknown how far the results of these assessments were used in shaping the policies.

- The technological capacities for **early warning systems** have steadily improved and most countries have maintained services to monitor weather hazards and have provided warnings of adverse conditions. However, much improvement was required to ensure this scientific knowledge reaches the community and increases their capacity to act on warnings.

4.4 HFA Priority for Action 3
Use knowledge, innovation and education to build a culture of safety and resilience at all levels

Education and capacity building on DRR leads to sharing information and raising awareness and ultimately to communities who are well informed, and who are motivated towards a culture of disaster resilience. The following have been used as indicators to provide an overview of the priority:

- Information sharing systems on DRR
- DRR elements taught in school curricula
- Risk assessment tools and cost benefit analysis of DRR
- National public awareness strategy for DRR.

4.4.1 Information sharing systems on DRR

Core Indicator 1 under HFA Priority for Action 3: Relevant information on disasters is available and accessible at all levels, to all stakeholders (through networks and development of information sharing systems)

Various networks existed in all the countries for collecting and disseminating information. For example in China, the *National Disaster Reduction Center*, served as the focal point for sharing and analysing disaster information, among other functions, and India reported that each of its national agencies were developing their own information system on risk management in line with their own function and mandate. Kazakhstan reported that it had established an automated information managing system for DRR, which included geo-information systems and the Internet. In Tajikistan, the *Information and Analytical Center*, established with the support from UNDP, developed a

sustainable scientific technological infrastructure at local and national levels that was used for research, mapping, and data base development. Moreover, the provision of information bulletins, local databases, accessible risk reduction technologies, and loss reduction measures were established within the local networks of state authorities.

Bangladesh provided an example of a diverse but wide-ranging disaster information disseminating framework and was in the process of developing a disaster risk information management system. The Ministry of Food and Disaster Management had programmes, developed in cooperation with donor and non-governmental agencies, which disseminated public information on disaster preparedness and response to specific hazards. The *Network for Information, Response and Preparedness Activities on Disaster* (NIRAPAD) was developed to provide rapid information on major and localised disasters. A newsletter on disaster management events developed by the Disaster Management Bureau, in cooperation with UNICEF was another source of shared information. As was the *Disaster Emergency Response Group*, which is a forum chaired by the World Food Programme and composed of representatives of the government, donor agencies and the NGO community to provide timely information on major and localised disasters and to undertake joint field level needs assessments after an event.

Many countries possessed the scientific capacity necessary to generate such information in government agencies and scientific and technical institutions as well as benefiting from the activities of research institutes and universities. ***Indonesia*** reported the involvement of institutes in disaster management, such as the Indonesian Science Institute, the Geological Research Centre, the Settlement Research Centre, the Water Resources Research Centre, Gadjah Mada University of Yogyakarta, Bandung Institute of Technology and the Surabaya Institute of Technology. In Bangladesh, although institutional links had been established between the academic and research community, such as the Institute of Water Modelling, Center for Environmental and Geographic Information Services, Department of Geography and Environment at Dhaka University with the Ministry of Food and Disaster Management, and other relevant government ministries addressing risk reduction, it needed further strengthening. However, countries like Cambodia acknowledged that it needed to enhance its scientific capacity.

4.4.2 DRR elements in school curricula

Core Indicator 2 under HFA Priority for Action 3: School curricula, education material and relevant training include disaster risk reduction and recovery concepts and practices

A number of countries such as Armenia, Bangladesh, Indonesia, Iran, Japan, Lao PDR, Nepal, Philippines and the Russian Federation reported including concepts on disaster preparedness, response and awareness in school curricula and other education arrangements, though in different ways and in different grades. While in ***Japan***, such concepts are taught in all levels of school starting from kindergarten. In ***Bangladesh***, the study of disaster management was initiated from grades six to eight and in ***Lao PDR*** for elementary grades of three, four and five.

In some countries, disaster preparedness and public safety were independent subjects, but often these subjects were taught as part of a broader subject, such as Environmental Studies or Geography. Thus, the content of these curricula modules varied largely. In the ***Russian Federation***, the subject of *Life Protection Science* teaches the theory and practice of protecting human life from hazardous events and emergencies, and in the ***Philippines*** disaster awareness is part of a learning core competency under the subject of Science in public elementary and high schools. In addition, in Indonesia disaster management had been inserted into the introduction of the school subject of Environment. In many countries, such as Japan and the Philippines, a portion of the curriculum also included conducting earthquake drills, which is a part of disaster preparedness and response. Similarly, ***Iran*** had nationwide earthquake safety education in its schools, supported by a wide range of textbooks, and reinforced by posters, public awareness, and annual school earthquake drills. Thus, the content consists of the basics of science related to hazards, preparedness measures and enhancement of skills for saving lives in emergencies, but barely on issues related to risk reduction.

Although, countries such as Armenia, Japan and the Philippines reported providing support in developing teaching aids and instruction materials, all the initiatives reported were limited only to public schools.

In several countries, efforts had been initiated to include disaster management into the curriculum of the university education system. Indonesia and Iran reported initiating postgraduate degrees; Master Degree in *Natural Disaster Management* at Gadja Mada University and a Master Degree in *Crisis Management and Seismology,* respectively.

4.4.3 Risk assessment tools and cost benefit analysis of DRR

Core Indicator 3 under HFA Priority for Action 3: Research methods and tools for multi-risk assessments and cost benefit analysis are developed and strengthened

No specific information was reported by the countries under this Indicator in the National Reports submitted to WCDR.

4.4.4 National public awareness strategy for DRR

Core Indicator 4 under HFA Priority for Action 3; Countrywide public awareness strategy exists to stimulate a culture of disaster resilience, with outreach to urban and rural communities

Many countries such as Armenia, Bangladesh, Korea, Nepal, Papua New Guinea and the Philippines reported carrying out public awareness campaigns for DRR through annual events, mass media campaigns, information dissemination, and public seminars. The awareness programmes were carried out by the respective governments, NGOs and the National Red Cross Societies.

Countries such as Armenia, Bangladesh, Iran, Korea, Nepal, Philippines and Sri Lanka also reported celebrating National Disaster Management Days. Some of these are *National Disaster Prevention Day of Korea*, which is celebrated yearly in May to promote public awareness on DRR, and the *National Day for Natural Disaster Reduction* of Iran, which is

commemorated yearly in the second week of October with programmes on television and radio featuring disaster related topics. However, in countries such as Armenia, disaster awareness was addressed through the *International Day of Civil Protection*, observed nationwide to promote awareness on public safety, and in Nepal, the focus was on earthquake safety in January to commemorate the anniversary of the Great Nepal Earthquake of 1934. In the Philippines, there are two laws to enhance disaster awareness, namely Proclamation No 296 of 1988, which has declared the first week of every July as *Natural Disaster Consciousness Week* and the Executive Order No. 137 of 1999, which has declared every July as *National Disaster Consciousness Month*. Earthquake drills were mentioned by a few countries.

Bangladesh reported having a national public awareness programme on risk reduction in which *National Disaster Preparedness Day* and *International Disaster Reduction Day* were observed each year. Several institutions were engaged in the development of materials to raise awareness of natural and human induced hazards. For example, government sponsored agencies, such as Bangladesh National Cadet Corps and voluntary associations, such as the Bangladesh Scouts and Girls' Guides were active in creating awareness, particularly among the students and the public in general. These campaigns represent significant efforts to heighten public awareness at a time of the year when the hazard is likely to occur or on an anniversary of a major disaster event. Although a wide range of strategies were employed, including public events like rallies, exhibitions and awards, there was potential for increased geographical coverage and greater participation. Not many countries reported a fully-fledged national programme on public awareness with formal institutional arrangements to support it. Bangladesh reported plans to establish a formal advocacy group, chaired by the head of the Ministry of Food and Disaster Management, and composed of parliamentarians, senior government officials, media representatives and disaster management stakeholders from the NGO and private sectors. The aim of the advocacy group would be to educate and support public representatives and policy-making officials to develop further a culture of DRR as a basis to enhance policy development.

4.4.5 Summary of HFA Priority for Action 3; start of 2005

- **School curricula** were recognised as windows for raising awareness on disasters in many countries; however, the content was largely restricted to the basics of science related to hazards, preparedness measures and enhancement of skills for saving lives in emergencies, with minimal emphasis on knowledge for the reduction of underlying disaster risk factors.

- National programmes on **public awareness on DRR** were not a common feature in these countries. Public awareness was largely restricted to the commemoration of National Disaster Reduction days and thus needed to be up scaled.

4.5 HFA Priority for Action 4
Reduce the underlying risk factors

With the growing risk of disasters, it is essential to understand the root cause of vulnerabilities that lead to increased risk. Often these are causal factors such as land management, natural resource management, economic and social development, and building construction. Based on this knowledge, policies, measures and management tools need to be developed and capacities and partnerships built. The following have been used as benchmarks to provide the overview of this priority:

- Environmental policies and plans include DRR
- Social development policies and plans include DRR
- Economic development policies include DRR
- DRR incorporated into land use plans and building codes
- Post disaster recovery and rehabilitation process include DRR
- Disaster risk impact assessments of development projects.

4.5.1 Environmental policies and plans include DRR

Core Indicator 1 under HFA Priority for Action 4: DRR is an integral objective of environment related policies and plans; including for land use, natural resource management and adaptation to climate change

A growing commitment to sustainable ecosystem management was seen in many countries in the region, with an improved understanding of the link between environmental degradation and disaster risk, particularly between coastal degradation, storm surge and cyclone damage, and between deforestation, increased flood and drought potential. This was particularly reflected in the environmental management action plans and programmes being implemented in countries across the region. As reported in ***Bangladesh***, the *National Environmental Management Action Plan* had incorporated DRR as an important issue and the ongoing *Coastal Afforestation Project* in cyclone-prone areas contributed greatly not only to environmental management, but also to the reduction of disaster risks. Similarly, the *Char Livelihood Programme,* which aimed to improve and secure the livelihoods of the very poorest in the riverine areas of North West Bangladesh, has contributed to reducing risks from disasters as well as preserving the environment. Similar examples were reported in ***Vietnam*** where the mangrove-planting programme implemented by the Vietnam Red Cross Society in eight provinces, provided protection to coastal inhabitants from typhoons and storms and has even contributed to livelihood opportunities. As documented by the International Federation of the Red Cross and Red Crescent Society, the planning and protection of the 12,000 hectares of mangroves cost around US$1.1 million, but it helped to reduce the cost of dyke maintenance by US$7.3 million a year.

In ***India***, long-term programmes were being implemented to reduce the potential of drought as well as to manage the environment in a better way. These included the *Watershed Development Programme for Shifting Cultivation, Drought Prone Area Programme* and the *Desert Development Programme*. ***Pakistan*** had a multi faceted programme over 10 years with

key areas on environmental protection, resource conservation, watershed management, social forestry and fuel efficiency. Similarly, ***Japan*** had addressed the issue through the *Forestry Maintenance and Conservation Projects Plan,* which aims to maintain and conserve forests to reduce the risks of landslides. This plan had a specific target to increase the number of communities whose surrounding forests have been subjected to mountain disaster proofing by 10% by 2008, relative to fiscal year 2003. ***Armenia*** also reported developing the *National Environmental Action Programme,* which promulgated government policies on environmental protection and the use of water and land resources. In addition, it developed the *Plan for National Action to Combat Desertification* with the support of UN agencies.

Climate change was not reported as an issue apart from in a few countries, such as Bangladesh and Bhutan. ***Bhutan*** recognised that its environmental changes due to climate change posed a threat through melting glaciers, increased flood potential and the risk of glacial lake outburst floods (GLOF). Similarly, Bangladesh reported examining its vulnerability to climate change as part of the NAPA process and recognised the need to increase initiatives on adapting to climate change. However, this lack of reporting on climate change is a result of the different institutional systems responsible for dealing with disasters and climate change, and the gaps in the exchange of communication and information.

4.5.2 Social development policies and plans include DRR

Core Indicator 2 under HFA Priority for Action 4: Social development policies and plans are being implemented to reduce the vulnerability of populations most at risk

Although many countries, particularly Bangladesh, Pakistan, and Philippines recognised that reducing poverty was a strategic and necessary approach to reducing hazard and risk exposure, and vice versa, it was only ***Bangladesh*** that had incorporated DRR into the *Interim Poverty Reduction Strategy Paper* (PRSP) as '*Annex 9 Disaster Vulnerability and Risk Management*'. This strategy acknowledges that disaster management should involve the management of both the risks and the consequences of disasters. The country had plans to include DRR as an integral strategy in the final PRSP along with a plan of action. Though the PRSP of ***Vietnam*** did not have a separate section on DRR, it did state the aim to reduce by half the number of poor people falling back into poverty due to disasters and other risks by 2010.

In terms of addressing issues of food security, public health, protection of critical infrastructure and improved hazard resilience on heath facilities and schools, little was reported in the National Reports. This is perhaps, despite the Ministry of Agriculture, Health, and Education being members of the National Disaster Management Office, their involvement was largely focused on response to disasters and emergency management. However, in some cases, such as in ***India***, learning from past experience, the government had taken proactive measures and accordingly reported on the finalisation of the Earthquake Mitigation Initiative which would include detailed evaluation and retrofitting of lifeline buildings, hospitals and schools. Thus, all states had been advised to have these buildings assessed and where necessary retrofitted. The Ministry of Finance had also been requested

to advise the financial institutions to provide loans on easy terms for retrofitting.

4.5.3 Economic development policies include DRR

Core Indicator 3 under HFA Priority for Action 4: Economic and productive sector policies and plans have been implemented to reduce the vulnerability of economic activities

No specific information was reported by the countries under this Indicator in the National Reports submitted to the WCDR. Some countries had begun incorporating specific sections and reference on disaster management in their multi year economic development plan. India in its 10th Five Year Plan (2002-2007) included a chapter on Disaster Management; The Development Perspective. Similarly; the Philippines Medium Term Development Plan (2004-2010) made several references to disaster management.

4.5.4 DRR incorporated in Land Use Plans and Building codes

Core Indicator 4 under HFA Priority for Action 4: Planning and management of human settlements incorporate DRR elements, including enforcement of building codes

Implementing initiatives under this theme depended on the progress made by the countries under Priority for Action 1 and 2. The result of the risk assessment should form the base for developing the Land Use Plans and hence guide the process of development, which is resilient from hazards. At the same time the extent to which the national DRR policies and plans build on the sector policies and prescribed inter-sectoral cooperation, would determine the effectiveness of the policies. With this complex contour, countries of the region were at various levels in incorporating DRR in developing planning processes and much more needed to be done. At the national level in Japan, the *Comprehensive National Development Plan,* based on the *Comprehensive National Development Act*, had as one of the five fundamental objectives of national development, the strategy to improve the country's safety with regard to large-scale earthquakes and other natural disasters. This was implemented by incorporating information on hazards in local development and land use planning. At a sectoral level, the *Long-Term Plan for Land Improvement* aimed to mitigate flood-related damage to the agricultural industry, with a specific target to reduce such areas impacted by floods by 75% by 2007, relative to fiscal year 2002.

The need for DRR-sensitive land use planning and the improvement of building codes by incorporating hazard resilient features were recognised and in some countries such as India, Japan, Nepal and Vietnam, were being carried out for new construction. However, problems remained in enforcing the codes in new construction as well as meeting the resources required to address the large stock of existing structures, which did not meet the standards. While in countries such as ***Vietnam,*** the *Law on Land Use* included regulations on managing land for residential construction in disaster-prone areas and of land use for flood and storm prevention works. However, the success of this enforcement was not reported. Similarly, ***Japan*** reported that buildings constructed under the revised *Building Standard Law*, known as the *New Seismic Design Method* enacted in 1981, had adequate earthquake resistant features, but the problem remained with buildings built before 1981 and

little progress was being made to improve the earthquake resistance of these buildings.

Similar to legislative and institutional reforms, often disasters themselves led to the adoption of new initiatives in developing building codes and planning land use. Such was the case in Nepal, where after the 1988 Udayapur Earthquake, the Ministry of Housing and Physical Planning implemented a project on *National Building Code Development* which included seismic hazard mapping and risk assessment for the entire country. However, its use in the physical planning process was not reported. Also in India, both after the Latur Earthquake of 1993 and Gujarat Earthquake of 2001, building codes were reviewed and building standards upgraded ***(Box 4.7)***.

There is one key aspect in trying to enforce these codes. There are a large number of structures, especially housing in rural and peri-urban areas, which followed non-engineered construction, and in most countries, such as Indonesia, it was not mandatory to follow the building code in rural areas. Similarly, in the central Asian countries, the construction standards and regulations, which were developed in the former Soviet Union, did not include seismic resistant construction standards for non-engineered buildings.

Despite this, some initiatives in this area were reported by ***India***, where the Ministry of Rural Development was in the process of revising its guidelines for construction of rural housing by incorporating appropriate earthquake/cyclone resistant features. This effort was expected to benefit a large proportion of the population as approximately 250,000 housing units were constructed every year as well as community assets, under the various Rural Development Programmes.

Box 4.7 Disasters triggering new initiatives on building codes and land use planning in India

During the period of 1990 to 2006, more than 23,000 lives were lost due to six major earthquakes (Uttarkashi in 1991, Latur in 1993, Jabalpur in 1997, Chamoli in 1999, Bhuj in 2001 and Jammu & Kashmir in 2005) in India. These also caused enormous damage to property and public infrastructure. After a large extent of damage and loss of life, it was prudent to have a re-look on the seismic codes of the country. Specialists got together and reformulated the following codes and guidelines:

- Micro zoning studies were undertaken in Ahmedabad
- Seismic zoning map of India was redrawn
- Seismic code was modified
- Guidelines for construction of infrastructure depending upon specified magnitude of earthquake in different regions were rewritten
- Strict provision of adherence of bylaws was reinforced
- Enforcement agencies were given adequate rights to punish the culprits

Source Central Road Research Institute, India

Building codes and Land use planning, India

4.5.5 Post disaster recovery and rehabilitation process includes DRR

Core Indicator 5 under HFA Priority for Action 4: DRR measures are integrated into post disaster recovery and rehabilitation process

The National Reports do not mention incorporating DRR in post disaster recovery and rehabilitation processes. However, as explained in detail under Priority for Action 1, the shift to adopt a holistic approach of DRR was relatively new in the region. The lack of countries reporting on DRR in response and recovery is reflective of a lack of understanding of the need, approaches and tools on how to conduct this integration.

In practice, some initiatives were already being taken especially in the aftermath of big disasters. The establishment of the Gujarat State Disaster Management Authority within two weeks after the 2001 Gujarat Earthquake and with a mandate to not only coordinate the earthquake recovery programme but also to look into long term risk reduction, deserves special mention. Reconstruction opportunities were also taken to rebuild the Bhuj District Hospital, which had collapsed during the earthquake, with earthquake resistant techniques, using base isolation technology. The government of this state also took the opportunity after the 2001 earthquake to adopt a multi-hazard approach by assessing and then repairing the water conservation check dams so that the risk of droughts, which are more common in Gujarat, could be minimised. Similar initiatives were taken by ***Bangladesh*** after the 1991 cyclone, to reassess the cyclone shelters, which were constructed after the devastating cyclone of 1970. The shelters were redesigned with a higher structural resilience and with more space in order to accommodate family and livestock.

Similarly, in ***Vietnam***, after a devastating flood and the high death toll of children due to drowning, the government set up 'flood kindergartens' where parents could leave their children while they struggled to save their houses, belongings and livelihoods during the time of the floods. During the 2002 floods, 918 flood kindergartens were organised to keep 20,000 children safe in flood prone areas and information about them was widely communicated to the public. This initiative has not only resulted in a decrease in the number of child deaths but also provided rural children access to kindergarten education for the first time.

Furthermore, in ***Japan***, building on the lessons learned after the Great Hanshin-Awaji Earthquake in 1995, the basics of disaster countermeasures were comprehensively revised in 1995 and 1997 to make the plans more specific and practical. This was accomplished by having separate plans for each type of disaster, time priority of different elements of response, clearer responsibilities of the state, local public bodies, and residents.

4.5.6 Disaster risk impact assessments of development projects

Core Indicator 6 under HFA Priority for Action 4: Procedures are in place to assess the disaster risk impacts of major development especially infrastructure

The National Reports of most of the countries identify Environmental Impact Assessments in major development projects as the primary way for carrying out assessments on the impact of the risks of disaster.

Tajikistan reported carrying out such assessments for development projects, especially those related to hydropower, dam construction and major infrastructure works, but it is not known how much these assessments incorporated DRR concerns. ***Korea*** reported eliminating potential causes of disasters inherent in development projects by carrying out a Disaster Impact Assessment regulated by a combined law, namely the *Comprehensive Impact Assessment Act for Environment, Disaster and Traffic*. However, this was applicable to only a few sectors like urban, industrial, tourism and mountain area development.

4.5.7 Summary of HFA Priority for Action 4; start of 2005

- With DRR being a relatively new concept, countries in the region were at the initial stages of understanding the importance to reduce the underlying risk factors.
- Although programmes and projects related to DRR were being implemented in many countries, the scope of these was often limited in time and geographical area. Incorporating DRR in national and sector **development planning processes** was being initiated in a few countries and there remains a long road ahead.
- The importance of DRR in **physical planning** was recognised by most of the hazard prone countries; however, the challenges were felt in enforcing such hazard resilient measures in new designs and constructions as well as improving the resilience of the large number of already existing structures, particularly non-engineered structures.

4.6 Hyogo Framework for Action Priority 5 Strengthen disaster preparedness for effective response at all levels

This is one of the priorities that received equal attention from all the countries. Activities under this priority, which includes preparedness for response, and building capacity for preparedness and response, are important in easing disaster losses. The following are indicators to provide the overview:

- Capacities for disaster preparedness
- Disaster preparedness and contingency plans
- Financial reserve for disaster response
- Procedures for information exchange during hazard events.

4.6.1 Capacities for disaster preparedness

Core Indicator 1 under HFA Priority for Action 5: Strong policy, technical and institutional capacities and mechanisms for disaster risk management, with a DRR perspective are in place

Capacity building for preparedness and for effective disaster response was carried out by training officials, administrators and staff to be proficient and skilled. Furthermore, emergency preparedness systems were enhanced. This is evident in ***Afghanistan***, where for two years the

UNAMA and the Asian Development Bank worked closely with the government to build the competence and ability of the Department of Disaster Preparedness, which was responsible to coordinate all disaster response. Also in ***Bangladesh***, the Disaster Management Bureau was the public agency entrusted to provide training courses for members of disaster management committees at the district, sub-district, union and grassroot levels. The bureau also trained representatives of civil society, namely teachers, religious leaders, and youth volunteers. In **Japan**, administrators participated in disaster reduction training in order to improve their performance, and in the Russian Federation and Mongolia, government officials participated in emergency management training. An active role was played by the National Societies of the Red Cross and Red Crescent and various NGOs, seen especially in **Armenia** where the Armenian Red Cross Society trained staff and volunteers in the skills needed for search and rescue, emergency life support, disaster operations, and rapid assessment. However, an institutionalised system for building the ability to reduce risk was not reported in most of the countries in the region. Furthermore, there was a large disparity between the response capacities at the national level and those at the sub-national level. This was recognised in the reports of Bangladesh and Nepal. Moreover, in Bangladesh, the *Comprehensive Disaster Management Program* has as one of its planned activities, a training programme that incorporates DRR into the development of local disaster action plans as well as into the local development plan.

Although countries such as Japan and Vietnam had a mechanism in place to mobilise voluntary participation and support, including military, police and communities, this investment in volunteerism was characteristically limited to the disaster response phase with no formal roles for volunteers in actual risk reduction

4.6.2 Disaster Preparedness Plans and Contingency Plans

Core Indicator 2 under HFA Priority for Action 5: Disaster preparedness plans and contingency plans are in place at all administrative levels, and regular training drills and rehearsals are held to test and to develop disaster response programmes

Several countries reported having the systems for national disaster preparedness plans and the requirements for sub-national authorities to prepare such plans. In ***Vietnam***, each district and province threatened by storms and floods was required to prepare an Annual Storm and Flood Control Plan prior to the start of the season. This has been done regularly for over two decades and these plans are submitted to the Provincial and Central Committee of Storm and Flood Control. ***Bangladesh*** reported on the ongoing preparation of contingency plans with local disaster preparedness committees preparing *Local Disaster Action Plans*. Over 700 union parishads developed the plans through a participatory process of learning and sharing.

4.6.3 Financial reserve for disaster response

Core Indicator 3 under HFA Priority for Action 5: Financial reserves and contingency mechanisms are in place to support effective response and recovery when required

As mentioned in Section 4.2.4 of this Report (under Priority for Action 1), most of the funds earmarked for disaster-related activities were primarily for disaster response purposes. The *Central Disaster Relief Fund* of Nepal, the *National Calamity Contingency Fund* in India, and the *President's Fund* in Sri Lanka, were examples of specific budgetary

allocations for disaster response and recovery. The *Central Disaster Relief Fund* of ***Nepal,*** established under the Disaster Relief Act of 1982, was used only for relief and not for prevention or alleviation measures. Similarly, in the case of ***India***, the *Calamity Relief Fund* was set up by states to provide relief assistance to all people affected by disasters. In Indonesia, the fund was allocated for agencies, which had a direct role in emergency response; namely Health, Social Welfare, Settlement and Regional Infrastructure. In ***Pakistan,*** funds were allocated on an annual basis for emergencies and disasters. The Emergency Relief Cell nationally administered the *Prime Ministers Disaster Relief Fund* and an annual *Risk Mitigation Fund* of $US5 million assisted people who had lost income or earnings. In Japan, local governments were required to set aside disaster countermeasure funds for emergency expenditures. Similarly, in Cambodia, the Department of Budget and Management was mandated to make funds available after a disaster from normal sources, for emergency relief operations, medical assistance and immediate repairs to infrastructure. These limited funds were released on receipt of a damage and impact assessment. In a typical budgetary process, agencies were expected to first use their existing operational budgets by adjusting agency work programmes. As previously mentioned, the ***Philippines*** had a budget specifically for preparedness and mitigation; 5% of each local government unit's budget earmarked for calamity relief and response operations.

4.6.4 Procedures for information exchange during hazard events

Core Indicator 4 under HFA Priority for Action: Procedures are in place to exchange relevant information during hazard events and disasters, and to undertake post-event reviews

Active information sharing and procedures for information sharing during hazard events as reported by countries are already described in section 4.4.1. Several countries held post event lessons learned workshops after major disasters. In some countries such as Vietnam particularly in the context of provincial and district level plans, lessons learned meeting is held in each affected districts and province after all flood season, and a section on this issue is incorporated in the fist section of the Storm and Flood Control Plan prepared for the subsequent year.

4.6.5 Summary of HFA Priority for Action 5; start of 2005

- **Preparedness planning** was considered important by most of the countries; however, the level of preparedness differed from country to country, and often within each country at national and sub national levels. Institutionalised systems for building capability and competence on disaster related issues were recognised as being essential in most of the countries.

- Investing in **volunteerism** was typically limited to the disaster response phase with no formal roles for volunteers in risk reduction.

Section 5:
New DRR initiatives and progress made in 2005-2006

Section 5: New DRR initiatives and progress made in 2005-2006

5.1 Introduction

This section of the report endeavours to present an overview of the progress made in the years 2005–2006. The devastating impact of the Indian Ocean Tsunami in December 2004 followed by the Kashmir Earthquake in October 2005 contributed to increased political will, heightened public awareness and concern, and expectations that led to definitive actions in these countries to revisit existing DRR systems. Significant progress over the short period of these two years since the WCDR is evident in the passage of new legislation and policies, institutional arrangements and programmes on DRR at national, sub national and community levels. Such impact was seen not only in the affected countries, but also in their neighbours and at the sub regional level in ASEAN, SAARC and Pacific regions. This momentum certainly contributed to reinforcing the message of HFA, and is a major factor behind the progress.

The primary sources of reference for this section are the reports submitted by countries to the First Session of the GPDRR in Geneva, June 2007, covering the period 2005–2006 and in some cases the first few months of 2007. Presentation is made under the Five Priorities for Action of the HFA and Indicators from the HFA Monitor, as in Section 4, to facilitate easy comparison. For more details on Methodology, see Section 2 of this Report.

5.2 HFA Priority for Action 1

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

5.2.1 Policy, Plans and Legal Frameworks for DRR

Core Indicator 1 under HFA Priority for Action 1: National policy and legal framework for DRR exists with decentralised responsibilities and capacities at all levels

In a number of countries, over the last two years, ***new legislation*** was passed or was being crafted to strengthen national systems with a more holistic approach towards DRR. For example, the *National Disaster Management Bill* of ***Indonesia*** enacted in April 2007, put emphasis on risk reduction and decentralised action for disaster management. Similarly, in the ***Maldives***, the *Disaster Management Bill*, was drafted and is currently awaiting parliamentary approval. This Bill considers a multi-hazard and all-agencies approach, delegating roles and responsibilities to various ministries for preparedness, mitigation, response and recovery. In addition, the proposed legislation in ***Fiji*** takes an all-hazard focus for the National Disaster Management Office and empowers the machinery for disaster risk management to facilitate improved DRR

initiatives at national, local and community levels. ***Box 5.1*** shows examples of National DRR legislations developed in the last two years.

Similarly, in ***Bangladesh***, although disaster management had been practised for the last three decades, the HFA framework and the recent disasters have ushered in the development of a *Disaster Management Regulative Framework* under which both DRR and emergency management are anticipated to be managed and implemented. The framework includes revision of the Allocation of Business of the Ministry of Food and Disaster Management and its agencies to incorporate a more comprehensive DRR approach. It is also enacting a Disaster Management Act, formulating the National Disaster Management Policy, and revising the Standing Orders on Disasters. The country is also developing specific guidelines for governments and stakeholders to implement DRR and establishing a learning and professional development strategy to strengthen the disaster management capacity of the Ministry of Food and Disaster Management and its agency staff.

Box 5.1 List of National Disaster Management Legislations since 2005

Countries	National DM Legislation	Year
India	*Disaster Management Act*	2005
Indonesia	*National Disaster Management Bill*	2007
Maldives	*Disaster Management Bill (awaiting approval)*	2006
Sri Lanka	*Disaster Management Act, No 13*	2005
Samoa	Disaster and Emergency Management Act	2006
Tonga	Emergency Management Act *(awaiting approval)*	2006

Source: HFA Progress Reports submitted to the first Session of GPDRR, June 2007

In the case of the *National Disaster Management Bill* of ***Indonesia***, the *Disaster Management Act* of 2005 of ***India,*** and the ***Sri Lanka*** *Disaster Management Act, No 13 of 2005*, the passage of these new laws can be attributed to the new national mood and impetus created by the Indian Ocean Tsunami in December 2004. In fact, in both Sri Lanka and India new legislation had been on the anvil and drafted for some years prior to the tsunami, and the laws were passed with unprecedented speed by May and December 2005, respectively. In the case of Indonesia, although the law took more time, there was widespread and unprecedented parliamentary and civil society discussion and debate. As a result, the law has several innovative features permitting greater civil society engagement. Similarly, in ***Pakistan***, following the earthquake, the *National Disaster Management Ordinance* was passed in December 2006. Under the Ordinance, the *National Disaster Management Commission* and the *National Disaster Management Authority* have been established. According to the Ordinance, the *National Disaster Management Commission* headed by the Prime Minister, acts as the chief policy-making body while the *National Disaster Management Authority* is the main executing agency at national level.

Despite the many initiatives, including the development of legislation, it is obvious that DRR has not yet become a priority for all the countries prone to numerous hazards, especially earthquakes. In some countries, like ***Samoa*** and ***Tonga***, the *Disaster Management Act 2006* and proposed *Bill for Emergency Management Act 2006*, respectively, continue to look primarily into emergency management. In addition, experience shows that the most needed and important steps continue to be undertaken after, and not before, the disaster. For example, the poor economic situation in countries like ***Tajikistan*** has brought other social priorities to the forefront and has resulted in the Ministry of Emergency Situations being transferred into a committee with less authority, staff and funding.

Thus, development of regulatory frameworks requires a lengthy period and commitment at all levels so that it can compete with other pressing priorities. In this regard, a typical challenge faced by many countries is the frequent change of key government personnel. This delays the whole process and necessitates additional effort on training and orientation.

Developing ***National Disaster Management Plans*** had been in progress over the last two years with a more comprehensive approach, including broad risk reduction and linking DRR to the larger issue of socio economic development and multi-stakeholder participation. Examples include the *National Plan for Comprehensive Disaster Reduction* during the "Eleventh Five-Year Plan" Period of ***China***, the *National Action Plan for Disaster Reduction* (2006-2009) of ***Indonesia (Box 5.2)***, and *National Disaster Risk Management Plan for the* ***Cook Islands,*** *2006*. Similarly, ***Thailand***, ***Cambodia***, and the ***Philippines*** are in the process of developing the *Strategic National Action Plan* (SNAP) for DRR. Of note in several of these countries is the active engagement of the National Planning Agencies, and in some cases, the joint preparation of these plans with the National Disaster Management Offices.

Box 5.2 National Action Plan for Disaster Reduction (2006-2009), Indonesia

- The Plan was developed as a joint undertaking of the National Development Planning Agency (BAPPENAS) and the National Coordinating Body for Disaster Management (BAKORNAS PB).
- The plan maps the planned programmes of the different stakeholders to allow easier coordination.
- The five priorities of the National Action Plan are aligned to the Priorities for Action of the HFA.
- It is planned that in the immediate future BAPPENAS will continue to refine the plan and ensure that all priority actions are included in the agenda and implemented accordingly to make an appropriate disaster risk reduction programme.
- It is also expected that local governments, as a follow up to this national action plan, will develop their own local action plans for disaster risk reduction, at the provincial and district/city levels.

National Action Plan for Disaster Reduction, Indonesia

In ***Sri Lanka***, consequent to the enactment of the Disaster Management Act of 2005, the need was felt to complement the ongoing policy efforts with risk identification and reduction strategies. In acknowledging these needs, in 2005 the '*Road Map Towards Building a Safer Sri Lanka*' was developed in coordination with multiple stakeholders to cover the following ten years, to identify specific priority projects. Further to this, Sri Lanka is in the process of developing its *National Disaster Management Plan* and *National Emergency Operation Plan*. The former is aimed at detailing the processes and periods to establish systems for disaster risk management in the country. It is a multi-sectoral, inter-ministerial, and inter-agency activity, identifying and assessing the capacities of existing agencies and improving their capacities and mandates in order to implement the identified task. A period of five years has been considered for formulating this plan.

Bangladesh has drafted the *National Plan for Disaster Management 2007-2015,* which provides guidance for the relevant sectors and disaster management committees at all levels to prepare and implement their prescribed roles. The country also has plans to develop hazard specific management plans: Flood Management Plan, Cyclone and Storm Surge and Tsunami Management Plan, Earthquake Management Plan, Drought Management Plan, River Erosion Management Plan and others. There are also intentions to develop detailed Disaster Management Plans for each district, upazila[7], and union of the country. Nevertheless, it is recognised that the development and compilation of local level plans will require substantial time and resources as well as a high level of commitment and inter-agency collaboration to ensure the implementation of these local plans.

In the ***Maldives***, the National Disaster Management Centre has prepared a draft *National Disaster Management Plan* and a few other ministries, such as the Ministry of Health and the Ministry of Tourism and Civil Aviation, have too initiated the development of respective disaster management plans. Similarly, ***Pakistan*** has developed its *National Disaster Risk Management Framework*, which prioritised areas for action in the next five years. A strategic plan has been put in place for DRR in

[7] Sub district

Mongolia, Kazakhstan and Uzbekistan although the latter two primarily focus on emergency preparedness. The plan adopted in ***Mongolia*** provides for policies for the assessment of disaster reduction activities. In ***Kazakhstan***, the *Disaster Preparedness Plan* provides guidelines to implement measures on DRR, and in ***Uzbekistan***, the framework, which was adopted with the help of the U.S. Federal Emergency Situations, serves as a reference for various programmes of emergency preparedness and disaster mitigation cooperation.

5.2.2 Institutional Arrangements for DRR

Core Indicator 4 under HFA Priority for Action 1: A national multi sectoral platform for DRR is functional

Since 2005, a number of new ***institutions*** have been created to act as leading government agencies or bodies to implement DRR initiatives at the national and sub national levels. These include, among others, the *National Disaster Management Commission* in ***Pakistan***, which has the *National Disaster Management Authority* as its implementing arm, the *National Disaster Management Authority* in ***India***, the *National Council for Disaster Management* in ***Sri Lanka***, which has the *Disaster Management Centre* as its executing agency, and the *National Disaster Management Centre* in the ***Maldives***. These agencies facilitate the formulation of DRR policies, strategies, and programmes, coordinate multi-stakeholder involvement in training, capacity development of stakeholders, and develop information bases and research on DRR.

In endorsing the need of a multi-stakeholder National Platform for DRR, countries of the region, such as ***China,*** have already formed a DRR National Platform, the *National Committee for Disaster Risk Reduction.* ***Thailand*** is also in the process of forming such a platform. Other countries, such as ***Indonesia*** and ***Vietnam,*** have been strengthening existing partnerships and forums to act as a stronger National Platform for DRR. Indonesia has formed the *National Forum for DRR* to serve as the national platform. It involves 35 agencies, local governments, NGOs as well as international organisations working in Indonesia and is lead by the new National Disaster Management Agency (BNPB) with support provided by the National Agency for Planning (BAPPENAS). Similarly, Vietnam is strengthening its existing *Natural Disaster Management Partnership* among government, donors, and NGOs, to serve as a platform for coordinating and promoting DRR.

However, the challenge remains to develop and maintain the effectiveness of these institutions at all levels and this depends on a large number of factors. These include the position of the authority/agency in the overall structure of the national government, the composition of the institution and its level of engagement of multiple stakeholders, which leads indirectly to the political support the agency receives and to its ability to establish policy frameworks and revise legislations. Some of the typical constraints that the established National Platforms have been facing, include insufficient political support due to a lack of understanding of the subject, constant political changes and changes of governments, lack of human resources and technical expertise, lack of tools and national risk assessments, and institutional resistance towards focusing on DRR and not only on disaster response.

5.2.3 Decentralisation of DRR

Core Indicator 3 under HFA Priority for Action 1: Community participation and decentralisation are ensured through the delegation of authority and resources to local levels

Decentralising responsibilities, programmes and resources to local authorities is necessary to achieve a more coherent and effective approach for risk reduction; this is realised by all countries of the region. In ***Cambodia***, although the National Committee for Disaster Management set up in 1995, decentralised authority to provincial and district committees for disaster management, it was only in 2006 that Commune Committees for Disaster Management were established. By emphasising the significance of local governance in disaster reduction, it is envisioned that these committees will provide opportunities for members of the Commune Councils (which are elected), for vulnerable communities, and NGOs to create local plans and mechanisms for implementing DRR at the community level. Similarly, in ***China***, the current institutional structure for disaster risk management extends down from the provincial level, to prefectures, districts and counties; with each county having a disaster risk management committee and a secretariat – although the roles are restricted to preparedness and response.

Typically, these sub national institutions for disaster risk management are comprised of members from various sectoral agencies and are chaired by the head of the local government. Although there is an acting secretariat for this committee, there is usually no full time focal point. Moreover, the roles and responsibilities of such committees are largely restricted to disaster response and rarely consider mainstreaming DRR into the development process. For example, in ***Indonesia***, SATKORLAK PB (the Coordinating and Implementation Unit for Disaster Management) and SATLAK (the Implementation Unit for Disaster Management) have standard operating procedures, but they reflect neither the current capacities nor a more holistic approach towards DRR. However, the new Disaster Management Law with an emphasis on DRR now provides an opportunity to develop regional, provincial and specific district guidelines or regulations.

Likewise, the new laws in India, Pakistan and Sri Lanka provide for the establishment of a sub national mechanism with specific mandates, that is, provincial, district and local authorities/committees.

Hence, the establishment of an institutional system is not in fact sufficient to ensure that the sub national level is able to undertake DRR in a holistic manner. Furthermore, for these systems to be truly effective depends on devolution of power, delegation of responsibilities, clear definition of tasks, allocation of budget, and partnerships with stakeholders, and integration with cross-sector development plans.

5.2.4 Funding for DRR

Core Indicator 2 under HFA Priority for Action 1: Dedicated and adequate resources are available to implement disaster risk reduction at all administrative levels

Having a dedicated line of funds for DRR in national and local budgets remains a challenge in most of the countries of the region, although some, such as ***India*** and ***Indonesia,*** report the provision of a specific budget from the national budget for DRR initiatives. In Indonesia, the Annual Plan (RKP) for 2007–2008 identified Disaster Mitigation and Management as one of the nine development priorities. The Pan sets out a programme for each sector on a calendar year basis. In ***Vietnam*** too, there is an allocated budget, although it is primarily for developing and implementing structural measures for flood risk reduction.

Some countries have developed innovative schemes to ensure that funds and resources are available for DRR related projects. For example, in ***Bangladesh***, the *Local Disaster Risk Reduction Fund* is designed to support small-scale innovative interventions that foster policy development and capacity building at grassroots level. It funds local demonstration projects in high-risk zones, research dissemination, advocacy and capacity building programmes. Similarly, the disaster management fund in ***Kyrgyzstan***, which is still deemed inadequate in overall size, comes from the automatic contribution of businesses and amounts to 1.5% of their profit. In ***Tajikistan***, businesses are required to contribute to the *Fund for Mitigation of Emergency Situations*. In addition to this, the central and local governments allocate special funds from their budgets to implement various DRR activities.

This challenge of inadequate resources is recognised by most countries, and some, such as ***Nepal,*** report of possible increases in government budgetary allocation for DRR. However, access to information on resources invested for risk reduction measures, remains difficult, especially since investment by sectoral agencies in protecting their own infrastructure (though directly contributing to DRR) is not captured under typical DRR interventions. Currently, a large amount of DRR intervention at the national and local level is funded by development cooperation by bilateral and multilateral donors through the financing of grants and loans to national governments, or through UN agencies and NGOs. Although these represent significant resources, they are not reported in National Reports.

5.2.5 Summary of HFA Priority for Action 1; progress in 2005-2006

- New ***legislations*** encompassing a holistic approach towards DRR is certainly an emerging characteristic observed in many countries of Asia and the Pacific in the last two years. Although most of the initiatives are a result of large-scale disasters, such as the Indian Ocean Tsunami, the trend has been to adopt a multi-stakeholder approach and to move away from disaster management to wider issues of DRR.

- Many of the countries have or are in the process of developing the National Disaster Management ***Plan***; a road map to chart out the

priorities for DRR in the coming years, identify stakeholders and the resources required for its implementation. However, implementing the Plan would require time and resources and has thus, been realised in only a few countries to date.

- Establishing an ***institutional*** set up that is responsible for undertaking DRR measures is being observed in many of the countries in the region. National Platforms for DRR are also being established or existing partnerships strengthened to act as one. However, formation of these set ups is an initial step towards institutionalisation and there still remains a long way ahead before they are effectively implemented.

- Having a dedicated ***budget line for DRR*** in national and local budgets continues to be a challenge for the majority of countries in the region.

5.3 HFA Priority for Action 2
Identify, assess and monitor disaster risks and enhance early warning

5.3.1 Assessments of DRR

Core Indicator 1 under HFA Priority for Action 2: National and local risk assessments based on hazard data and vulnerability information are available and include risk assessment for key sectors
Core Indicator 2 under HFA Priority for Action 2: Systems are in place to monitor, archive and disseminate data on key hazards and vulnerabilities

The large-scale disasters since 2004 have definitely led to a growing acknowledgement by all countries of the risks to which they are exposed. However, the initiatives are at various levels with countries such as the ***Maldives*** already having developed a basic national risk profile and initiated a more detailed disaster risk profile of selected islands. However, in Armenia and Tajikistan the collection of data for risk analysis has only started. Moreover, the focus and scale of these assessments also varies.

In the ***Philippines,*** there is an ongoing initiative to produce multi-hazard maps under the project on *Hazard Mapping and Assessment for Effective Community-Based Disaster Risk Management,* better known as the *READY* project. The project also aims to develop a manual on standard hazard mapping that will serve as a guide for local geologists throughout the country.

Similarly, ***Bangladesh*** has developed the *National Tool for Community-based Risk Assessment and Management*. The Tool adopts a holistic perspective, involving the full interaction of a top down policy, planning and institutional reform, and with bottom up community driven risk analysis. It recognises the eight essential tools for community risk assessment and management; namely, models and frameworks, policy reforms, advocacy, institutional reform and capacity building, guidelines and planning frameworks, collaborative partnerships, funding mechanisms and coordinating measures ***(Box 5.3)***. The tool has already been used to conduct community risk assessments and prepare risk

reduction action plans for all of the 548 unions under the seven pilot districts. Its use is currently being expanded to other districts.

Box 5.3 National Tools for Community Risk Assessment, Bangladesh

The following are identified as essential tools for Community Risk Assessment (CRA) in Bangladesh:

Models and Frameworks: All stakeholders should understand risk assessment from a more holistic perspective. The framework should have a vision, a common conceptual understanding on risk reduction and a guide to policy reform.

Policy Reforms: Although risk assessment takes place at the community and local government levels, it is realised that without high-level policy support it is difficult to engage the mechanisms and resources of government in support of community risk assessment and management on a sustainable basis. Policy reforms in Bangladesh have started to operate institutional mechanisms and government programmes in support of community risk management. They have also opened the door to greater levels of mainstreaming across the key sectors.

Advocacy: An elaborate advocacy strategy has been adopted that targets multiple levels of stakeholders, including the media and education system.

Institutional Reform and Capacity Building: It has been realised that in order to mainstream and increase the involvement of government agencies in achieving risk reduction, the roles and responsibilities of the key institutions should be amended to reflect risk reduction responsibilities and that an extensive capacity-building programme be implemented. One immediate aim is to engage local government in managing and supporting efforts to reduce community risk.

Guidelines and Planning Frameworks: The uniform CRA Guideline provides a mechanism for mainstreaming government resources and programmes in support of community risk reduction. This mechanism is comprehensive, facilitates the incorporation of scientific prediction models, guidance for the design of uniform training material and ensures community participation.

Collaborative partnerships: Having established partnerships with over 70 agencies, the government is providing capacity building and follow-up refresher training for partners, in addition to monitoring processes.

Funding mechanism: Funding for projects to reduce community risk is a major motivator to both communities and disaster management committees. Bangladesh has a number of government and project grants, funding options, and other support mechanisms such as the Food for Work, Cash for Work and Vulnerable Group Feeding programmes, to support community and local government involvement in smaller scale projects on risk reduction.

Coordination measures: In 2007, a National CRA Working Group was established to be responsible for undertaking quality assurance and coordination functions. It comprises members from the UN, other international agencies, and government, academics, research, and NGO communities. Its task is to oversee the implementation of CRA activities, continue the improvement of the CRA processes.

Source: Ministry of Food and Disaster Management, Bangladesh

Community Risk Assessment, Bangladesh

There has also been a shift in focus on risk assessment as a single hazard to multi-hazard approach in recent years. As mentioned above in the ***Maldives***, a national risk profile with a multi-hazard risk index for each island has been prepared, followed by an ongoing detailed risk

assessment of nine islands selected for population consolidation. Similarly, Vietnam recognises this multi-hazard approach for risk assessment as a high priority to be undertaken by the country in the coming years.

The single hazard approach, like the Tsunami Hazard Assessment in ***PNG***, flood modelling and mapping of Vaisigano catchments in ***Samoa***, and the Landslide Risk Assessment in ***Fiji*** and ***Sri Lanka*** described in the earlier section, continues. However, in Sri Lanka this approach is being strengthened, along with ongoing nationwide development of a disaster database, which would provide a comprehensive picture of disaster occurrence and loss based on the Des Inventar methodology. The governments of ***India, Indonesia, Iran,*** the ***Maldives*** and ***Thailand*** are also developing disaster databases by using data over three decades by means of the same Des Inventar methodology. In addition, databases like *Disaster Resource Network* have been initiated in the Maldives and other countries to assist policy makers to access resources, but such a network requires advocacy on a large scale and involves wider stakeholders, especially the private sector.

In spite of these initiatives, there is still a gap between undertaking risk assessment and having its results reach policy makers or actually influencing development planning. To fill this gap, there is a strong need to view risk assessment not only from a hazard lens but also more importantly from the community, the area and the sector that is being exposed. This has resulted in some success in Bangladesh where the policy reforms have started operating institutional mechanisms and government programmes in support of community risk management. Moreover, they have also opened the door to greater levels of mainstreaming across the key sectors. An example of this is the October 2007 decision by the Executive Committee of the National Economic Council of Bangladesh, which requires all development project proposals to contain risk assessment and risk mitigation. This decision alone will have an enormous impact on development and community risk reduction efforts in the country.

5.3.2 End-to-End Early Warning Systems

Core Indicator 3 under HFA Priority for Action 2: Early warning systems are in place for all major hazards, with outreach to communities

The importance of Early Warning Systems was underscored by the Indian Ocean Tsunami in 2004, which reinforced the need to bring countries of the region together to establish an Indian Ocean Tsunami Early Warning System. There has been considerable effort in developing this system under UNESCO's Intergovernmental Oceanographic Commission (UNESCO/IOC) as well as in developing national systems. A major review of the status of Early Warning Systems in the region's countries was undertaken in 2005. Simultaneously, there is a growing realisation that technology need not necessarily be the only basis of the Early Warning System, and equal emphasis should be given to the pre-emptive and protective behaviour of the population at risk. A major focus of various initiatives in the region over the last years has been to establish an End-to-End Early Warning System that not only reaches the last mile, but is also in a form that is understood by the communities and leads to necessary action. Most countries in the region, like ***China***, ***India*** and ***Japan***, have an Early Warning System in place, and some like the Maldives report developing a National Early Warning Plan. However,

the focus of the systems and the capacities in each country are at various levels. While the systems in China and Japan look into various hazards like earthquake, cyclone, tsunami, and floods, the one in ***Malaysia*** and ***Singapore*** is specifically for tsunami. Some countries also report addressing the need to build early warning systems for more frequent hazards, such as floods and mudslides in ***Thailand***, and flash floods in ***Bangladesh. Fiji*** has developed an End-to-End Early Warning System for residents within the Navua River Basin.

Building the capacity for early warnings and response is also a priority recognised by many of the countries, both at the technical end of hydrology, meteorology and seismology as well as from the angle of risk communication. ***Pakistan*** has developed a National Plan for strengthening the capacity of its early warning and in ***Thailand*** the Department of Disaster Prevention and Mitigation has designed a training course, *Mr. Disaster Warning*. The course, developed in collaboration with other line agencies and the National Disaster Warning Centre, identifies a village volunteer to be trained to become the focal point for disaster warning; hence, Mr. Disaster Warning. The course aims to create disaster-warning networks, particularly in flash flood and mudslide prone villages. Since the inception of the programme, approximately 6,500 villagers have been trained and assigned as "Mr. Disaster Warning".

Commensurate with enhancing Early Warning Systems, there is demonstrated commitment to improving the dissemination of warnings to the public through the media and to exploring new technologies, as is seen in Uzbekistan and in Sri Lanka. In ***Sri Lanka***, in February 2006, Lirne Asia, in collaboration with a local NGO Sarvodaya, launched the first phase of a project providing disaster mitigation training and last mile connectivity to tsunami-affected villages. Villages are trained and provided with information and communication technology including VSATs, fixed and mobile telephones, hand radios and new Disaster Warning and Response Recovery Units based on addressable satellite radio. In fact, Sri Lanka is the first location to field-test satellite radio for specialised disaster warning, response and recovery.

With the growing commitment to establish an effective End-to-End Early Warning System, countries such as the ***Maldives*** and ***Vietnam*** also recognise the necessity to have strong partnerships among various stakeholders' line agencies, national Red Cross and Red Crescent Societies and the NGOs. The challenges remain in adopting a comprehensive approach of linking hazard monitoring and risk assessing with disaster preparedness and response.

5.3.3 Trans-boundary Risks in National and Local Risk Assessment

Core Indicator 4 under HFA Priority for Action 2: National and local risk assessments take account of regional/trans boundary risks, with a view to regional cooperation on risk reduction

No information was reported by the countries on this indicator in the HFA Progress Reports.

5.3.4 Summary of Priority for Action 2; progress in 2005-2006

- The need for a comprehensive nationwide ***risk assessment*** is realised by most of the countries and accordingly has been identified as a priority of the National Disaster Management Plans; however, very few countries have completed a risk assessment on a national scale.

- ***Early Warning Systems*** are being established in most of the countries. The focus of these systems varies, as do the capacities, which require expertise at both ends; technical capacity to monitor hazards as well as to communicate probable risks from the hazard to the community and thus prepare them to act on the warnings.

5.4 HFA Priority for Action 3
Use knowledge, innovation and education to build a culture of safety and resilience at all levels

5.4.1 Information sharing systems on DRR

Core Indicator 1 under HFA Priority for Action 3; Relevant information on disasters is available and accessible at all levels, to all stakeholders (through networks, development of information sharing systems etc)

As described in Section 4.4.1, information sharing was recognized by the countries as an important component and accordingly networks, information sharing systems etc were developed in the countries. No specific progress was reported by the countries on this indicator in the HFA Progress Reports.

5.4.2 DRR Elements Taught in School Curricula

Core Indicator 2 under HFA Priority for Action 3: School curricula, education material and relevant trainings include disaster risk reduction and recovery concepts and practices

The last two years have seen steady progress in integrating DRR into the primary and secondary school curricula in countries in the region. Despite this, the process has been completed with full integration of disaster related concepts in the national curricula in very few countries, for instance ***India***. In others like ***Cambodia, Lao PDR, Pakistan, Philippines, Sri Lanka*** and ***Tajikistan*** the process is underway with partnerships between the Ministry of Education and the respective disaster management offices. In larger countries like India, where several systems of school education exist, the central government has directed the states to introduce disaster management concepts in their school curriculum too.

Where as in India, disaster management is being taught as part of the curricula for grades 8, 9 and 10, in Cambodia, Lao PDR and the Philippines, it is being developed in an incremental manner with one grade at a time. Modules for grade 8 in Cambodia and grade 7 for Lao PDR and the Philippines have been developed. However, the countries realise that complete integration of DRR elements into the school curricula is a long process. They also acknowledge that sustainability requires strong collaboration with national agencies for pedagogy, teacher training institutes and support from various development

partners in the education sector. ***Box 5.4*** provides an example from ***Sri Lanka*** where building the capacity of teachers is considered an essential pillar for success, and hence, an important component of the education and DRR programme.

The subjects in which DRR elements are incorporated vary in each country, and depend on the existing educational structure. India has integrated DRR into Social Science; Cambodia in Geography and Earth Science; Lao PDR in Natural Science and Social Science; the Philippines in the Science and Social Studies and Sri Lanka in Social Science. The Maldives is currently looking into various options on integrating DRR into the school health curriculum. Depending on the subject, the content of the module also varies and ranges from the role of science and technology in disaster management, to preparedness measures, mitigation concepts and volunteerism. While the content developed in recent years looks at emerging concepts like climate change and environmental management, much still needs to be done to instill the concept of risk and its underlying factors of hazard prone construction, improper land use planning and others.

Box 5.4 Making DRR part of teacher education, Sri Lanka

In Sri Lanka, DRM was not part of school or teacher education. However, the 2004 tsunami and the landslides in 2003 and 2006 have had a dramatic impact on the education sector. The Ministry of Education together with the National Institute of Education, the National Science Foundation and the GTZ embarked on a project to integrate DRM into teacher training and school curricula. In this endeavour, new syllabi and teacher information guides were prepared by the Social Sciences Faculty of the National Institute of Education. The GTZ supported the training on the new DRM topics of Training the Teachers and In-Service Advisors and the development and production of input kits containing all materials and supplementary aids for use by the teachers. At present, education staff, teachers and a sizeable portion of teacher trainers have undergone disaster safety education. The integration of disaster risk management in junior and senior secondary education has already started and is expected to be completed by 2010. Regarding the Science syllabi, a spiral curricular reform has started and has already been integrated into the grade 6 and grade 7 syllabi.

The major objective of the syllabus being integrated is to provide basic competencies to ensure the safety and well being of children in a disaster emergency. To achieve the above objective, the syllabus is divided into five modules: basic concepts of disaster safety education, school based disaster safety management, disaster safety practices, disaster psycho-social care services, and post-disaster health care practices. The module on disaster safety practices includes topics such as village hazard mapping, identification of evacuation routes, school vulnerability assessment, mitigation processes and traditional disaster safety practices conducted as co-curricula activity.

Source: Chandrapala, Asian Disaster Management News, 2007

DRR in Education, Sri Lanka

Along with the integration in the formal curricula, there is also substantial progress in the countries in raising awareness on disaster preparedness and response through non-formal curricula, like extra curricular activities, mock drills and school emergency preparedness. Since the extra curricular component of the curricula is decided by the concerned school authorities, this has resulted in partnerships between

school authorities, NGOs and local branches of the Red Cross and Red Crescent Societies. Together they work closely with the children to inculcate preparedness, particularly for local hazards. A similar example is seen in the ***Philippines'*** five-year programme on *Disaster Preparedness through Education Multi Media,* which is being implemented by the National Disaster Coordinating Council, the Department of Education and partner agencies, and aims at instilling a culture of preparedness among the youth.

To increase the scope of integration, many countries such as Bangladesh, Kazakhstan, Nepal, Sri Lanka and Tajikistan report developing new courses on disaster management for higher education in universities. Whereas, technical universities in ***Kazakhstan*** and ***Tajikistan*** are already working on the introduction of basic information on natural and man made disasters in their regular programmes, ***Bangladesh*** has introduced a Diploma course on DRR with BRAC University, and Nepal has launched a Master's level course on disaster management at the Institute of Engineering.

Although the emphasis of integrating DRR continues to be in public schools, in countries such as ***Pakistan***, the National Disaster Management Authority is collaborating with the Ministry of Education to include elements of DRR in the education system and to mobilise all stakeholders, including government, communities and the private sector, to ensure that DRR is fully integrated into school curricula.

5.4.3 Tools for risk assessments and cost benefit analysis of DRR

Core Indicator 3 under HFA Priority for Action 3; Research methods and tools for multi-risk assessments and cost benefit analysis are developed and strengthened

No specific information was reported by the countries on cost benefit analysis of DRR. However, tools for risk assessments have been developed in countries such as Bangladesh and described in detail in section 5.3.1.

5.4.4 National Public Awareness Strategy for DRR

Core Indicator 4 under HFA Priority for Action 3: Countrywide public awareness strategy exists to stimulate a culture of disaster resilience, with outreach to urban and rural communities

Increasing the awareness of governments and decision makers, the media, the private sector, civil society, and the community is an important component of effective DRR. The recent disasters have only highlighted its need and thus many countries in Central Asia and Southeast Asia report having various strategies for public awareness. The ***Philippines*** reports promoting awareness though nationwide periodic drills for tsunamis and earthquakes, and these also test the Building Emergency Evacuation Plans, the airing of Disaster Management School-on-Air, dubbed *Safe Ka Ba*? (Are you safe?), and the production and distribution of posters and flyers on natural hazards. Similarly, in ***Kazakhstan***, local communities participate in early warning drills and preparedness and response activities. In ***Kyrgyzstan*** and ***Tajikistan***, all-day radio highlights, interviews with experts, printed colour inserts in newspapers, and essay-writing contests were carried out on the International Day for Disaster Reduction. In Southeast Asia,

the ASEAN Committee on Disaster Management complements the efforts of member countries with the annual observance of DRR and public information campaigns on disaster preparedness.

5.4.5 Summary of Priority for Action 3; progress in 2005-2006

- The importance for ***education and DRR*** has been recognised by most of the countries in the region and, accordingly, the countries in collaboration with their Ministry of Education are at various levels of integrating DRR in their national school and university curricula. However, the content of the curricula continues to focus primarily on aspects related to disaster management and not on issues related to risk reduction.

5.5 HFA Priority for Action 4 Reduce the underlying risk factors

5.5.1 Environmental Policies and Plans include DRR

Core Indicator 1 under HFA Priority for Action 4; DRR is an integral objective of environment related policies and plans, including for land use natural resource management and adaptation to climate change

The important role that natural resources could play in reducing the impact of disasters was well demonstrated in the case of mangroves acting as a 'bio-shield' during the 2004 Indian Ocean Tsunami. This growing realisation has led to many countries initiating programmes on protecting coastal ecosystems. For example, ***Sri Lanka*** is undertaking a programme on planting trees along the 17km long coast of Colombo, Gampaha and Matara Districts. In this initiative, it also plans to involve children and schools in the local area in reducing underlying risks, which would raise awareness on DRR among the local communities. Similarly, the ***Maldives*** reports undertaking composite risk assessments that take into account environmental impacts of natural disasters and understand how the impacts of climate change can trigger higher and more extensive disaster events. National Adaptation Programmes of Action (NAPA) have been developed for the Maldives, which identify adaptation needs and options for protection of the natural ecosystems, beaches, human settlements and water resources, and key economic sectors; namely fisheries, tourism and agriculture. However, the challenge remains in meeting the required expenses and advocating for the adapting measures. ***Bangladesh*** reports establishing the *Climate Change Cell* in the Department of Environment through the Comprehensive Disaster Management Programme, with a vision to incorporate climate risk management in the development process of the country to ensure the safety of human lives and properties.

5.5.2 Social Development Policies and Plans include DRR

Core Indicator 2 under HFA Priority for Action 4: Social development policies and plans are being implemented to reduce the vulnerability of populations most at risk

A large number of countries in the region are trying to address DRR as part of their poverty reduction strategies. Such is the case in Bangladesh, Cambodia, Nepal and Vietnam, and other countries. However, ***Bangladesh*** has taken a few steps forward by identifying DRR

as one of the key policy issues in the Poverty Reduction Strategy Paper. It has included a separate policy matrix on "Comprehensive Disaster Management towards Poverty Reduction and Growth". Public-private partnerships are recognised as the key to ensure implementation of the policy's strategy being adopted in the Poverty Reduction Strategy Paper. Accordingly, the Ministry of Food and Disaster Management is closely working with both government and private sector organisations, and donors to establish a planning and implementation mechanism for the policy.

With regard to critical infrastructure, progress is reported only by the ***Philippines*** on its ongoing initiative by the Department of Education on designing hazard-resilient school buildings, *School Buildings for Learning and Public Use*. This design will allow school buildings to be converted and to function efficiently as evacuation centres in times of disaster. Also the National Disaster Coordinating Council, in partnership with My Shelter Foundation, United Architects of the Philippines, and Private Sector Disaster Management Network is taking the lead in planning and organising the implementation of the *Be Better, Build Better Program*. This programme envisions the construction of innovative school buildings that are not only conducive for learning but also safe from disasters. The primary component of the programme is the holding of a Millennium Schools Competition that will solicit the involvement of architects from around the world to creatively design and construct a prototype of the next generation low cost and disaster resistant school building for developing countries. Similarly in the Gujarat State of India, the Gujarat State Disaster Management Authority, with the assistance of The World Bank, initiated the programme for promoting a culture of disaster safety in schools; *Gujarat School Safety Initiative,* after the Gujarat Earthquake in 2001. The programme has gradually been scaled up over two phases, and in the third phase, the programme intends to make all schools in the State safe from disasters.

5.5.3 Economic development policies include Disaster Risk Reduction

Core Indicator 3 under HFA Priority for Action 4; Economic and productive sector policies and plans have been implemented to reduce the vulnerability of economic activities

No specific information was reported by the countries under this Indicator in the HFA Progress Reports submitted to the GPDRR.

5.5.4 DRR Incorporated in Land Use Plans and Building Codes

Core Indicator 4 under HFA Priority for Action 4: Planning and management of human settlements incorporate DRR elements, including enforcement of building codes

Though progress under this theme continues to be at different levels in different countries, the last two years have definitely seen a more comprehensive approach being adopted towards risk assessment, development planning and hazard resilient building codes in many countries, including Bangladesh, Indonesia, the Maldives, Pakistan, Philippines, Sri Lanka, Vanuatu and Vietnam. Examples include the ***Philippines*** and ***Indonesia*** where the respective National Planning Agencies; namely, National Economic and Development Authority in the

Philippines and BAPPENAS in Indonesia, have taken the lead along with the NDMOs to initiate the process of integrating DRR into the national development planning process. ***Box 5.5*** provides a brief description of initiatives being carried out in the Philippines. In ***Vanuatu,*** disaster risk management has been incorporated as a priority into the national development plan. In Indonesia, although the current medium-term development plan does not specifically address DRR, risk reduction is incorporated in the areas of social welfare, natural resources and environment. Similarly, in ***Malaysia***, the *National Urbanisation Policy; NUP No. 23,* has incorporated the need to ensure the planning and developing of urban areas by considering disaster mitigation aspects in line with the HFA.

In the ***Maldives***, this approach is evident in the *Safe Islands Program,* which focuses on the development of the larger islands with better economic opportunities, high environmental resilience, and incentives for voluntary migration to these islands. To allay future risk from disasters, land use plans of the *Safer Islands Program* have been developed incorporating features of high resilience with wider environmental protection zones, elevated areas for vertical evacuation

Box 5.5 Mainstreaming DRR into Land Use Planning, The Philippines

In the Philippines, an assessment of the country's existing plans was carried out by the National Economic Development Authority (NEDA). The assessment revealed that although the Medium Term Philippines Development Plan 2004-2010 included DRR policies and strategies in several chapters of the Plan, they presented a fragmented picture of DRR in the country. The assessment also identified the inclusion of DRR concerns in the National Framework for Physical Planning 2001-2030 and the Regional Physical Framework Plans. As an overall recommendation, the assessment asserted that there remains a need to integrate properly disaster risk and vulnerability assessments as well as more specific DRR strategies and measures, in the country's socio-economic and development plans.

To take action on the suggested steps, NEDA in partnership with NDCC has been implementing the project on Mainstreaming Disaster Risk Management in Sub-national Development and Physical Planning. As an output of the project, NEDA has been developing Guidelines for Mainstreaming DRR into development and physical planning. This would adopt a three directional approach to mainstreaming DRR: First, mainstreaming in national development processes (e.g., poverty reduction strategies and socio-economic plans); second, in sectoral plans (e.g., agriculture and housing); and third, in different planning levels (i.e., national, regional and local). The project would also conduct training sessions for regional NEDA Staff, land use planners and Regional and Provincial Land Use Committees on the utilisation of the Guidelines and the formulation of eight DRR enhanced Regional and Provincial Physical Framework Plans. However, the following challenges/issues have been put forward by NEDA for successful implementation and sustainability of the initiative:

- Need to i) generate sets of data that are compatible with planning requirements, ii) standardise maps, and iii) develop protocol for sharing of data/maps among agencies.
- Need to build the capacity of Local Government Units.
- Securing the commitment and support of Local Government Units, especially their local chief executives.
- Financing for DRR programmes, projects and activities (PPAs).

Source: National Disaster Coordinating Council, Philippines

DRR in Land Use Planning, The Philippines

in case of floods, establishment of alternative modes of communication and energy, and detailed disaster management plans. Currently five islands have been identified for the programme and development plans are being prepared in consultation with communities.

Progress is also underway in countries of the region to develop, update or revise national building codes by incorporating hazard resilient features. In ***Sri Lanka***, the Mitigation and Technology Division of the Disaster Management Centre has initiated activities in developing building guidelines. A technical committee has been established to develop or enforce codes or guidelines for planning and construction activities in disaster prone areas. The committee focuses its attention on guidelines for construction in areas prone to land slides, high winds and cyclones, coastal flooding, tsunamis and earthquakes. The ultimate objective would be to make the adoption of guidelines for planning and construction in hazard prone areas mandatory by incorporating them in the regulations of the Urban Development Authority.

Similarly, in ***Pakistan***, the National Engineering Services and Geological Survey of Pakistan has been entrusted with the task of updating the Pakistani Building Code. Work began with the development of a geological fault map of the earthquake at-risk areas. The map provides guidance to avoid planning and construction within the fault zone. This will also benefit the 400,000 rural houses estimated to be reconstructed with earthquake resistant technology by the Earthquake Reconstruction and Rehabilitation Authority. This demonstrates the comprehensive approach of addressing risk reduction from a holistic point of view.

At the same time, countries such as ***Bangladesh*** realise that developing codes and guidelines alone is not enough to integrate DRR into development. It is the strict enforcement of building codes and by laws that is equally important. It was reported that the National Building Code was brought under the gazette notification of the Bangladesh Government in November 2006, but the major challenge remains to motivate people to follow it.

5.5.5 Post Disaster Recovery and Rehabilitation Process includes DRR

Core Indicator 5 under HFA Priority for Action 4: DRR measures are integrated into post disaster recovery and rehabilitation process

As mentioned under Priority 1, with substantial progress made in the last two years in legal framework and adoption of a more holistic approach to DRR policy, the countries in the region have been adopting the concept of '*build back better*' in the recovery phase after a major disaster. An example can be seen in ***Sri Lanka***, where the *National Disaster Management Policy* highlights among others, 'medium and longer term reconstruction and rehabilitation to a higher standard than before'. 'Build back better' has also been the defining theme in post tsunami and post earthquake reconstruction in the region. Examples were seen in the post tsunami recovery in ***Indonesia*** where particular emphasis was given to the inclusion of risk reduction measures in housing and livelihood recovery processes, and in the ***Maldives*** where the 'build back better' recovery approach emphasised stronger and safer construction methods.

5.5.6 Disaster Risk Impact Assessment in Development Projects

Core Indicator 6 under HFA Priority for Action 4: Procedures are in place to assess the disaster risk impacts of major development especially infrastructure

Little information has been reported by the countries on this topic, apart from the ***Philippines***, which reported the initiation of mainstreaming DRR into the road sector with a partnership project between the National Disaster Coordinating Council and Department of Public Works and Highways. This activity looked into the need to incorporate risk impact assessments in the planning phase of both nationally and locally funded new road projects in the country.

5.5.7 Summary of Priority for Action 4; progress in 2005-2006

- Countries in Asia and the Pacific Region have made the least amount of progress under this Priority for Action. Although recent disasters have helped to raise awareness on the importance of ***risk reduction***, implementation is at an initial stage in most of the countries.

- Some of the specific areas for integration of DRR where momentum has been gathered include: adoption of ***ecosystem based measures*** for risk reduction, especially in the context of coastal ecosystems, ***poverty reduction strategies***, ***land use planning*** and ***building codes***. However, the progress is largely at a policy and institutional level and not yet translated into ground implementation.

5.6 HFA Priority for Action 5
Strengthen disaster preparedness for effective response at all levels

5.6.1 Capacities for Disaster Preparedness

Core Indicator 1 under HFA Priority for Action 5: Strong policy, technical and institutional capacities and mechanisms for disaster risk management, with a DRR perspective are in place

The countries in the region have endeavoured to strengthen their local capacities for disaster preparedness and response. Related activities include reinforcing search and rescue committees, promoting community volunteerism, formulating or updating national and local disaster response plans, establishing emergency operation centres and standard operation procedures for emergency response. As a capacity building activity, the staff of relevant agencies from most of the countries underwent skills training on disaster management. For example, in the ***Maldives***, more than 200 government officials and staff were trained in basic concepts and principles of disaster risk management. Specific training related to first-aid was provided to the Boy Scouts and Girl Guide volunteers. In the ***Philippines***, the chief executives of local disaster coordinating councils acquired training in effective leadership in all phases of disaster risk management. They have been encouraged to develop a culture of preparedness and prevention rather than a culture of response alone. This leadership

training has been conducted in 95% of the most vulnerable cities and municipalities of the Philippines. Similarly, in ***Thailand***, the Department of Disaster Prevention and Mitigation recognised the immediate need to enhance search and rescue capacities at national, provincial, and most importantly, at local levels. Thus, it launched the *One Tambon One Search and Rescue Team (OTOS)* programme intended to be established in every tambon's[8] community-trained search and rescue team.

5.6.2 Disaster Preparedness Plans and Contingency Plans

Core Indicator 2 under HFA Priority for Action 5: Disaster preparedness plans and contingency plans are in place at all administrative levels, and regular training drills and rehearsals are held to test and to develop disaster response programmes

The need for disaster preparedness and effective response continues to be the priority, along with other initiatives on broader risk reduction. Nationwide disaster preparedness programmes at both national and sub national levels are seen in countries like Bangladesh, India, the Maldives, Sri Lanka and Vietnam. In ***Sri Lanka*** the Disaster Management Centre has initiated action to set up preparedness plans for disaster prone areas with the tsunami affected districts as a priority. Eventually, these plans will be prepared for each government administrative unit at different levels, provincial, district, divisional and gram niladari. It is reported that out of 25 districts, draft plans for five districts have been completed. At least 26 divisional plans are in progress from Kalutara, Galle, Matara and Hambantota Districts, and 174 grama niladari divisions have been selected from the same districts based on vulnerability. Similarly, in the Maldives, community preparedness plans have been developed for 13 islands and disaster management task forces are provided with training on basic emergency response. In ***Vietnam,*** there is an established practice of developing contingency plans in disaster prone areas. In India, local level disaster preparedness programmes in most hazard prone districts in the country demonstrate the potential to up-scale local level disaster reduction to a national scale; and thus achieve a broad based advancement in preparedness and response capabilities.

5.6.3 Financial reserve for disaster response

Core Indicator 3 under HFA Priority for Action 5: Financial reserves and contingency mechanisms are in place to support effective response and recovery when required

No specific information has been reported in the National HFA Progress Reports on this indicator.

5.6.4 Procedures information exchange during hazard events

Core Indicator 4 under HFA Priority for Action 5: Procedures are in place to exchange relevant information during hazard events and disasters, and to undertake post-event reviews

No specific information was reported by the countries under this Indicator in the HFA Progress Reports.

[8] Sub district

5.6.5 Summary of Priority for Action 5; progress in 2005-2006

- **Preparedness planning** continues to be important to most of the countries in the region, as is the need to increase capacity, particularly at the sub national level. However, an institutionalised system for capacity building and regular multi hazard contingency planning at all levels remains an ongoing process in most of the countries.

Section 6:
Regional DRR initiatives and programmes

Section 6: Regional DRR initiatives and programmes

6.1 Introduction

Asia and the Pacific Region experienced a large number of disasters in the 1990s; many of which crossed political boundaries and impacted on the region as a whole. Some examples include El Niño-induced drought, forest fires in Southeast Asia, and flood waters from the Himalayan region. The impact of these regional scale disasters led to the growing realisation among countries during the IDNDR on the need to share real-time information on disaster induced causes, as well as an increased impetus for disaster response for neighbouring countries and to exchange experiences and lessons learned among countries. A review of lessons learned during the IDNDR; Reflecting Deliberations of the IDNDR Bangkok Forum, February 1999, highlighted the following reasons for focusing on regional cooperation:

- Hazards do not follow political boundaries
- Countries within the sub region, face similar risks and can share lessons learned
- Sharing of real-time information can reduce the impacts and provide early warning to communities and nations at risk, and
- Sharing of resources and technical knowledge can reduce the costs to individual countries.

This growing commitment on regional cooperation for disaster reduction was reflected across the region and more importantly in the sub regions among the member countries of ASEAN, SAARC, BIMSTEC and SOPAC. It was also evident in the initiatives of the regional offices of UN agencies, bilateral agencies and development banks, such as The Asian Development Bank and The World Bank, as well as in regional organisations such as ADPC, ADRC, MRC and ICIMOD.

Regional programmes around common themes, methodologies and shared hazards have proved their benefit and cost effectiveness in catalysing action in participating countries through shared learning, healthy competition and peer pressure.

This section focuses on the actions for regional cooperation and the initiatives taken on a regional scale, particularly those undertaken by the above mentioned organisations.

6.2 Regional DRR Initiatives and Programmes from 1990-2005

Regional cooperation for disaster reduction was a priority in most of the sub regions of Asia and the Pacific with the formation of focal agencies for disasters as well as implementation of programmes. In **Southeast Asia**, regional cooperation was noticeable in the numerous discussions and forums. These included: the ASEAN joint regional intervention against haze which was outlined in a regional action plan in 1997; the four annual ASEAN regional forum inter-sessional meetings from 1997 to 2000 on the need for coordination in disaster relief; the meetings of the ASEAN Expert Group on Disaster Management; and in the ASEAN Concord II of 2003, which called for intensifying cooperation in disaster management.

At its 12th meeting in Hanoi in 2002, the ASEAN Expert Group on Disaster Management, which had met every two years to discuss and share experiences on the region's disaster management activities, endorsed the formation of the *ASEAN Committee on Disaster Management*. This was to enable members to meet annually and closely monitor projects on disaster management. To guide this ASEAN cooperation in disaster management, the *ASEAN Regional Program on Disaster Management* (ARPDM) was developed to serve as an integrated programme framework for the period 2004-2010. The programme identified five major components: establishment of ASEAN Regional Disaster Management Framework, capacity building, sharing of information and resources, promoting collaboration and strengthening partnership and public education, awareness and advocacy. The framework was also used as a platform for collaboration with ASEAN partners and international organisations. Moreover, ASEAN environment ministers and senior environmental officials established a Haze Technical Task Force to implement their Regional Haze Action Plan. In 2002, the path-breaking ASEAN Agreement on Trans-Boundary Haze Pollution Control was signed by all ten ASEAN countries.

Similarly, in **South Asia**, disaster management was recognised by the SAARC as a priority, but linked as a component of environmental management. The third SAARC Summit in 1987, recognising the susceptibility of the region to various natural disasters, decided on regional cooperation with a view to strengthen disaster management capacities. Thus, a study was commissioned for the protection and preservation of the environment and on the consequences of natural disasters in a well-planned and comprehensive framework. The results were endorsed in the Sixth SAARC Summit in 1991. This is a landmark study in reviewing the impact and challenges of natural disasters and their links to environmental degradation, and identifying ways forward for joint action. With the threat from rising global sea levels and the effects on South Asian countries, in 1992 another study was undertaken on the Greenhouse effect and its impact on the region. In addition, a workshop on natural disaster reduction was held in 1994 to prepare a regional approach and report for the Yokohama Conference on Natural Disaster Reduction. With this high on the environmental agenda, the *SAARC Meteorological Research Center* was set up in Dhaka in 1995 and the *Coastal Zone Management Center* was set up in Male in 2004.

In the **Pacific Region**, the need for regional cooperation for disaster risk management was felt more strongly because of the similarity in hazards that the Pacific Island countries faced and the shared problems they experienced. This was reflected in the *South Pacific Disaster Reduction Programme,* which was implemented in two phases over 1994–2000. It aimed to strengthen human resources and institutional capacity, establish a management information system, empower communities and strengthen regional coordination on disaster risk management. Drawing upon the accomplishments of this programme, all the Heads of State through the Pacific Forum, made a decision to establish a *Disaster Management Unit* within the South Pacific Applied Geoscience Commission (SOPAC). This was to provide an institutionalised regional approach to disaster risk management by implementing the *Comprehensive Hazard and Risk Management Programme*.

Similarly, regional cooperation was being further promoted by regional centres like **ADPC** and ADRC. Since its establishment in 1986, ADPC has worked closely with governments to improve their capacities for disaster preparedness. It has also acted as a regional focal point for managing knowledge and sharing information. In 2000, it established the Regional Consultative Committee (RCC) on Disaster Management with members being the heads of National Disaster Management Offices of the 26 countries of the Asian region. ADPC convened annual meetings in collaboration with the host country. The second meeting of the RCC held in October 2001, concluded with the *Bangkok RCC 2 Declaration of 2001*, which called on all member countries to adopt a comprehensive risk management approach and identified the importance of regional initiatives to create awareness and political will. The fourth RCC meeting in Dhaka, March 2004, acted as a preparatory event in Asia for the WCDR, and saw the launch of the *RCC Program on Mainstreaming DRR into Development Policy, Planning and Implementation in Asia*.

ADRC, established in 1998, has contributed to regional cooperation through managing an information database on natural disaster reduction, undertaking research in international cooperation in disaster reduction and facilitating the exchange of disaster reduction experts within the region. It has also organised international meetings and conferences to discuss the status of disaster reduction activities. The fifth ADRC International Meeting was convened in Kobe, Japan in 2003 where emphasis was given to reviewing the achievements and challenges in DRR in Asia. This was used as a basis to further develop the paradigm of related regional and international cooperation.

Apart from the regional programmes of the ASEAN and the Pacific Island countries, **other stakeholders** were also involved in developing and implementing regional programmes and capacity building initiatives, which often focused on specific themes. Notable examples are The *Asian Urban Disaster Mitigation Program,* implemented in ten countries in the region over 1995–2004 by ADPC with support from the United States Agency for International Development's Office of Foreign Disaster Assistance **(USAID/OFDA)**, and focused on secondary cities, and also the *Flood Management and Mitigation Program* of the Mekong River Commission in Cambodia, Lao PDR, Thailand and Vietnam from 2004–2010. Similarly, since the mid 1990s community-based disaster management has been a major focus area for the International

Federation of Red Cross and Red Crescent Societies and also in the efforts of ADPC and Duryog Nivaran.

Initiatives also included regional training courses. ADPC, which served as a regional focal point for the IDNDR strategy for the region, provided training courses to over 2000 disaster management professional over the 1990s. At the national and sub national levels, the *Asian Disaster Mitigation Training Network* established a network of regional and national training institutions to deliver courses on a national level on various aspects of disaster mitigation. The *Asian Urban Disaster Mitigation Program* and the IDNDR's *Risk Assessment Tools for Diagnosis of Urban Areas against Seismic Disaster (RADIUS)* also made significant contributions in assisting governments at the province and city level in assessing risk and enhancing their capacity for disaster preparedness and mitigation.

The **Duryog Nivaran Network** was established in South Asia in the mid 1990s. Its aim was to fill a void in cross border dialogue and to share experience among NGOs and disaster management practitioners (governmental and others), working in the most disaster prone region. Over the years it has been promoting an alternative perspective towards disasters: people affected by disasters are more than mere victims but they are partners in their future development and well-being. This network has been carrying out activities related to sharing information, building a concerned media, and employing research and grassroots community action.

Similarly, the ***Asian Disaster Reduction and Response Network*** (ADRRN) was formed in December 2003. Its objectives included developing an interactive network of NGOs committed to achieving excellence in the field of disaster reduction and response, to raise the relevant concerns of NGOs in Asia and the Pacific Region to the larger community of NGOs globally, to promote best practices and standards in disaster reduction and response. The Network also aimed to be a mechanism for sharing reliable information and facilitating capacity building among network members and other stakeholders.

There was also a growing involvement among the **UN agencies** to support regional cooperation. In 2003, the UN/ISDR Asian Partnership was established comprising of ADPC, ADRC, UNESCAP, UNDP and UNOCHA to strengthen regional cooperation in taking forward the agenda of DRR. The UNDP, UNESCO, UNHABITAT, UNCRD, UNESCAP, FAO and other UN agencies undertook regional projects for disaster mitigation.

Many bilateral agencies supported regional capacity building for disaster reduction through core funding to regional programmes and facilities. These include the European Commission's Humanitarian Aid Department with its programme on Disaster Preparedness (DIPECHO), the British Department of International Development, the **USAID/OFDA**, the Australia Agency for International Development and the Japan International Cooperation Agency. The **Asian Development Bank** made a significant shift from rehabilitation assistance to the adoption of the *Disaster and Emergency Assistance Policy* in 2004. This was part of its Long Term Strategic Framework and it included a broader objective to strengthen its effectiveness in supporting member countries to manage

disaster risk, and to facilitate rapid and adequate assistance in response to disasters and post conflict situations in order to revitalise development efforts.

Information on the regional initiatives was shared in several regional forums, meetings and workshops. These included the UNESCAP, IDNDR and ADPC jointly organised Regional Meeting for Asia: *Risk Reduction and Society in the 21st Century*, February 1999; consultative meeting involving regional organisations organised by ADPC, ADRC and UNOCHA in Kathmandu, 2001, and in Bangkok, 2002; Regional Workshop organised by ADPC with support from ECHO, USAID/OFDA and ADB in April 2002; *Regional Workshop on Best Practices under the AUDMP* in Bali, October 2002; *Regional Workshop on Networking and Collaboration among NGOs of Asian Countries* organised by ADRC and UNOCHA in Kobe, Japan in 2002. Each of these identified the accomplishments and the concerns for necessary action for regional co-operation on disaster reduction (highlighted in ***Box 6.1***).

Box 6.1 Achievements and necessary action for regional cooperation on DRR

Regional achievements on disaster reduction identified by the *IDNDR Asian Survey of accomplishments for Northeast, South and Southeast Asia* conducted by UNESCAP:

- Substantial sub regional collaboration in forecasting tropical cyclones, floods, and tsunamis, and training in disaster preparedness and management.
- Committed work of the UNESCAP/WMO Panel on Tropical Cyclones and WMO/UNESCAP Typhoon Committee, the UNESCO Tsunami Warning System, ADPC and the establishment of the ASEAN Haze Technical Task Force, ADRC and the East Asia Natural Hazards Mapping Project.

Recommendations for regional cooperation of the *Regional Meeting for Asia: Risk Reduction and Society in the 21st Century*, 1999:

- Technical assistance, financial support and technology transfer
- Early warning systems, communication networks and disaster preparedness
- Political commitment, proper institutional frameworks for coordination and resources

Areas of action for regional initiatives as identified by the RCC 1 and RCC 2 meetings:

- Creating awareness, political will and support for disaster management and mitigation
- Organising an Asian regional multi-stakeholder conference on disaster reduction and give support to national conferences
- Asian regional report on disaster reduction
- Vulnerability Atlas for Asia: development of risk maps and local level referencing for countries in the Asian region
- Promoting cooperation and enhancing the mutual effectiveness of programmes of sub regional organisations, such as those of the ASEAN, SAARC, SOPAC, MRC, ICIMOD and others.

6.3 Regional DRR Initiatives and Programmes since 2005

The WCDR called for regional organisations and institutions to undertake the following tasks to advance DRR within their mandates, priorities and resources:

- Promote regional programmes
- Undertake and publish regional and sub regional baseline assessments of DRR
- Coordinate and publish period reviews on progress in the region and on impediments and support needs and assist countries in preparing periodic national summaries of their programmes as well as progress
- Establish or strengthen existing specialised regional collaborative centres, to undertake research, training, education and capacity building
- Support the development of regional mechanisms and capacities for disasters.

Rapid progress on regional cooperation on DRR is observed in Asia and the Pacific in the initiatives of ASEAN, SAARC, SOPAC and other regional organisations as noted in Section 6.2. Besides the call for action in the HFA, the momentum generated by the Indian Ocean tsunami had a catalytic effect on regional action. Following the resolutions made at the inaugural meeting of the ASEAN Ministerial on Disaster Management in December 2004, and the commitment made at the Special ASEAN Leaders' Meeting on the aftermath of the tsunami in January 2005, ASEAN member countries signed the *ASEAN Agreement on Disaster Management and Emergency Response* (AADMER) in July 2005. The AADMER was initiated in 2004 and is one of the fastest negotiated ASEAN agreements as it was negotiated within only four months. The AADMER provides a regional and comprehensive framework to strengthen preventive, monitoring and mitigation measures to reduce disaster losses in the region. It also provides for the set up of an ASEAN Coordinating Centre for Humanitarian Assistance on disaster management, and an ASEAN Disaster Management and Emergency Relief Fund. While the ratification of the Agreement is underway, ASEAN member countries have begun to implement many of the agreement's provisions, like formulating standard operating procedures for the region, standby arrangements, coordination of disaster relief and emergency response operations known as SASOP (to put ARPDM sub component 1.1 into operation), and a regional inventory of assets and capacities, titled the ASEAN Standby Arrangements for Disaster Relief and Emergency Response (to support ARPDM sub component 3.1d) is being compiled based on earmarked assets and capacities of ASEAN member countries. In addition, the countries are conducting an annual ASEAN Regional Disaster Emergency Response Simulation Exercise.

Similarly, in South Asia, the Male Declaration was adopted at the special session of the SAARC Environment Ministers in June 2005. This reiterated the need to formulate a Comprehensive Framework on early warning, disaster management and disaster prevention followed by the establishment of the SAARC Disaster Management Centre in 2005 and the adoption of the *SAARC Framework for Regional Cooperation in Disaster Management* in 2006. Aligned with the HFA, the framework provides a platform for South Asian countries to establish and strengthen the regional disaster management system. This would include the need to identify and elaborate on country and regional priorities for action, share best practices and lessons learned, establish a regional system to develop and implement regional programmes, create a regional response mechanism and a mechanism to facilitate monitoring and evaluating achievements towards goals and strategies. Tasked with a challenging mandate of the member countries, the SAARC Disaster Management Centre was established in a remarkably short period with a good foundation. With its effective structure and institutional arrangement in place, although at its nascent stage, the Centre is committed to being a vibrant institution of regional cooperation of DRR in South Asia.

In response to the global call for the implementation of the HFA, the governments of the Pacific Island countries developed the *Pacific Regional Framework* which was endorsed by the leaders at the 36th Pacific Island Forum in PNG in October 2005. With a mission to build capacity in order to accelerate implementing DRR and disaster management policies, planning and programme, this framework has

Box 6.2 Pacific Regional Framework for Action 2005-2015

The Framework contributes to the implementation of the Mauritius Strategy and the HFA; underscore the extreme vulnerability of small developing states to disasters. It also complements other relevant regional frameworks, declarations and policies including those relating to climate change, ocean resources, freshwater, health, HIV/AIDS and agriculture. The Framework has identified six themes and for each has identified expected outcomes by 2015, key national and regional activities. The six themes are as follows:

- Governance: Organisational, institutional, policy and decision-making frameworks
- Knowledge, information, public awareness and education
- Analysis and evaluation of hazards, vulnerabilities and elements at risk
- Planning for effective preparedness, response and recovery
- Effective, integrated and people-focused early warning systems
- Reduction of underlying risk factors

It is recognised that the successful implementation of the framework is dependent on the ownership and combined efforts of governments and all other stakeholders working in partnership to ensure a multi-disciplinary multi-sectoral, integrated approach at regional, national and community levels.

Pacific Regional Framework for Action 2005-2015

adopted six themes each having guiding principles, expected outcomes by 2015 and identified key national and regional activities. ***Box 6.2*** provides a brief description of this framework. To implement this regional framework at the national level, SOPAC under the Pacific Plan, coordinated the formation of a *Pacific Disaster Risk Management Partnership,* which comprises of approximately 30 regional and international organisations. This partnership is committed to assist and support Pacific Island countries to develop and implement Disaster Risk Management National Action Plans, which will seek to identify and address national priorities.

Over the years, all these meetings have acted as important regional mechanisms to facilitate the sharing of information and accelerating regional cooperation. The ISDR Asia Partnership was expanded in 2007 to more than 25 members including the inter-governmental sub-regional organisations, UN agencies, the International Federation of Red Cross and Red Crescent and regional non-governmental organisation networks such as Duryog Nivaran and ADRRN and donors.

The years 2005-2006 also witnessed significant regional initiatives in strengthening early warning systems. The Special ASEAN Leaders' Meeting on the Aftermath of the Earthquake and Tsunami in January 2005, in Jakarta, and the Ministerial Meeting on Regional Cooperation on Tsunami Early Warning Arrangements in January 2005, in Phuket, expressed commitments to establish an early warning system for the Indian Ocean and the Southeast Asian regions. Coordinating efforts to establish a tsunami warning and mitigation system in the Indian Ocean rests with UNESCO's Intergovernmental Oceanographic Commission (UNESCO/IOC). The first International Coordination Meeting for the Development of the Indian Ocean Tsunami Warning and Mitigation System (IOTWS) was held in Paris, March 2005, followed a month later by a second meeting in Mauritius. At these meetings it was agreed that a framework for the IOTWS was to consist of a coordinated network of national systems and capacities, with Member States being responsible for issuing and disseminating warnings within their respective territories, utilising or building on existing institutions and complementing existing warning frameworks, within a multi-hazard approach.

Furthermore, the last two years have seen a significant expansion in the Regional Offices of UN agencies and in their programmes to support the HFA, and DRR in countries in the region. The ADB has increased its commitment to the implementation of its *Disaster and Emergency Assistance Policy* and it has increased its support to member countries in national programmes for DRR and its integration into the Country Partnership Strategies. The programmes of MRC, ICIMOD, ADPC and ADRC have also strengthened. A list of regional organisations and mechanisms is provided in the Annex 4.

Finally, a major step forward has been the hosting of regular ministerial conferences to harness political commitment for DRR. The First Asian Ministerial Conference on DRR was held in Beijing, China, September 2005 and hosted by the Government of China. The Second Asian Ministerial Conference on DRR in New Delhi, India, November 2007 was hosted by the Government of India. The adoption of the Beijing Action for DRR and the Delhi Declaration on DRR both serve as guides for action in Asia focusing on regional priorities for implementing the HFA. The Delhi Declaration established the Ministerial Conferences as the Regional Platform for DRR for Asia to serve as an effective link between the National and Global Platform for DRR. The ACDR meetings; organised by ADRC in Seoul, South Korea, 2006, and in Astana, Kazakhstan, 2007, provided momentum and guidance for the implementation of the HFA in Asia as did the 5th and 6th RCC meetings in Hanoi, Vietnam in 2005 and Kunming, China in 2006.

Section 7:
Key challenges and strategic priorities to 2010

Section 7: Key challenges and strategic priorities to 2010

7.1 Introduction

In the National Reports submitted to the WCDR in 2005, countries made a number of statements on the priorities that lay ahead for them as individual nations, for the region and for DRR globally. These priorities revolved around the following issues:

- Strengthening institutional capacity and policy for DRR;
- Provide special funds for disaster prone nations that seek technical and financial support to initiate risk reduction programmes;
- Carry out hazard mapping;
- Ensure systems for sharing and disseminating information on disasters;
- Strengthen the capacity for better recovery and reconstruction; and
- Strengthen cooperation and collaboration with NGOs, regional and international organisations.

Although progress has been achieved in Asia and the Pacific Region on DRR in the two years post WCDR, there continue to be many challenges ahead, which are mainly of the same nature as those encountered before the WCDR. Some additional broad challenges expressed by the countries in the National HFA Progress Report submitted to the First Session of the GPDRR are as follows:

- A lack of involvement of sectoral agencies and other stakeholders to implement DRR programmes. This is partly due to lack of awareness and advocacy on the importance of hazard resilient development for each of the sectors. Besides this, there is a lack of legislation, hence there is no obligation for any sectoral ministry to evaluate their plans and programmes with a disaster risk focus and to integrate risk reduction into their regular development programmes;
- Resource constraints to implement DRR programmes; and
- Strengthen capacities at all levels, including communities, for disaster preparedness and response.

These broad challenges are articulated periodically. However, some of the specific challenges to implement the various priorities of the HFA, faced by the countries in Asia and the Pacific, are identified in the following section.

7.2 Challenges at the National Level

HFA Priority 1: DRR Legislation, Institutions, Plans and Budgets

- Development of ***legislation*** is a time consuming process and requires support from the highest level of the system. As observed in the case of Sri Lanka and Indonesia, an occurrence of a large-scale disaster can accelerate the process of shaping the legislation. However, in usual situations as in the case of Tajikistan, this depends on numerous factors, such as the political, socio economic conditions of the country, and the importance of DRR in relation to other competing development priorities. Drafting legislation is also influenced by frequent changes of government officials in the system, which not only delays the process but also often calls for fresh needs to influence high level policy makers and fresh efforts to orientate new officials on the importance of DRR.

- Though in the recent years, the ***institutions*** that have been established, such as the National Disaster Management Authority of Pakistan and India, have had a broader mandate of DRR (not only disaster response), the challenge remains in how effective these institutions are. This largely depends on the position of the institution within the national government's administrative structure, composition, and the level of engagement with various stakeholders. For example, in the case of Cambodia, even though the National Committee for Disaster Management with the Prime Minister as its Chair, receives strong political support, the secretariat of the committee is poorly integrated into the government's national administrative and budgetary structure. This results in a lack of resources for implementing risk reduction activities and staff salaries.

- While progress has been made in the countries to develop ***National DRR Plans***, a three fold challenge remains. First, the focus of these plans is still more on preparedness and response as seen in Kazakhstan and Uzbekistan and sometimes even on a single hazard. Second, the development of complementary plans at provincial and local levels is essential and needs to be accelerated. Lastly, implementing these plans successfully depends not only on allocation of budget and mobilisation of resources, but also on decentralising the functions of the DRR system in the country, ensuring a devolution of power and responsibility, and most importantly maintaining capacity at various levels.

- The well-established link between ***disasters and development*** has been increasingly recognised in recent years, but putting it into practice still remains a challenge. Lack of recognition of DRR in sector legislations and policies and a lack of its recognition as an investment, remains some of the obstacles in integrating DRR into sector programmes.

- The ***allocation of resources*** from the national budgets for risk reduction activities also remains a continuing challenge in most of the countries. Even in some cases, such as India, where a budget is allocated, the share is much smaller than compared to what is needed. As explained above, this is partly because of other competing priorities as well as the lack of recognition of DRR as an investment. Although some countries such as Bangladesh, Kyrgyzstan, Tajikistan,

and Vietnam had attempted initiating alternative funding mechanisms like micro credit for DRR interventions or even sharing a percentage of profit earned from business towards disaster mitigation, it has not yet become a widespread practice. In spite of this, it cannot be the primary source of funds.

HFA Priority 2: Risk Assessments and Early Warning

- ***Comprehensive risk assessments*** on national scales continue to be rare in the region. In fact, it is often used as a misnomer for what are essentially hazard assessments. Even in cases where they are carried out, they are usually of inappropriate scale or only focus on a single hazard. There also remains a huge gap between the results of the assessments reaching the policy makers or being used in development planning on a nationwide scale. The problem lies partly in the unavailability of data on hazards, and more importantly on socio economic conditions. Challenges also lie in the much needed coordinated role between the various agencies that collect the information, carry out the assessments, and use the results of these assessments in planning and making policies. Such an integrated approach is currently being initiated in the Philippines in a partnership between the National Disaster Coordinating Council, and its members; National Economic Development Authority, Department of Environment and Natural Resources, Department of Interiors and Local Governance, and the Philippines Institute of Volcanology and Seismology under the project *Hazard mapping and assessment of effective community-based disaster risk management*.

- The absence of a standardised ***methodology for post disaster assessments*** in the region is again linked to the unavailability of data related to hazards and their impact at national, and more importantly, sub national levels. This absence of data is particularly a problem for more frequent, localised hazards, which although do not have a huge impact on the national economy as a whole, they have considerable impact on the livelihoods of the communities living in that area.

- Although the Indian Ocean Tsunami in 2004 has provided a great impetus in establishing multi-hazard end-to-end ***early warning systems***, the challenge lies in sustaining the system in many countries, especially given the cost of maintaining infrastructure, equipment and capacities. Equally challenging is institutionalising a system, which links both the upstream and downstream of early warnings. This covers hazard monitoring, risk assessment with dissemination over the last mile, and workable disaster preparedness and response plans that enable protective action by communities who receive the early warning.

HFA Priority 3: Knowledge and Education for building a culture of resilience

- Imparting knowledge on the science of hazards has been a part of the formal school curricula for years, and recent initiatives have been taking place to introduce disaster preparedness and response too. Despite these efforts, much needs to be done to make this widespread. Furthermore, the importance of teaching children the underlying factors of risk in their surrounding community has yet to be adopted in most of the school curricula. Hence, the challenge

remains in reinforcing the role that children can play as advocates for environmental management, land use planning and hazard resilient construction, and various aspects of community safety.

- The initiatives on integrating DRR into school curriculum are mostly taking place in pockets. NGOs that work closely with the communities often introduce disaster related concepts into the non-formal curricula of the area in which a particular NGO is working, but these initiatives are largely project based. Although, some countries like Cambodia, India, Lao PDR, Pakistan, Philippines, Sri Lanka and Tajikistan have adopted the sustainable approach of working with the Ministry of Education to ***integrate DRR into school curricula***, the challenge remains in integrating it into private schools, which often outnumber the public schools, especially in urban areas.

- The availability of resources is also an important criterion for the success of the integration of DRR into the curricula. A successful integration is related to developing a system for regular teacher training, production of teaching aids, and printing of additional books.

HFA Priority 4: Reducing underlying Risks

- The challenge of reducing the ***underlying risk factors*** is two fold. Firstly, to integrate DRR concerns into development policies, plans and programmes of all ministries requires acceptance and political commitment at the highest level. At the same time the success of such integration depends on the level of understanding in the sectors, the operation capacity, and where needed, the enforcement. As previously mentioned, although mainstreaming DRR into development is more recognised by the countries of the region, very few have made concrete advances. For example, Bangladesh has integrated DRR into the Poverty Reduction Strategy Paper and the Economic Committee of the National Economic Council of Bangladesh made the decision that all development project proposals must contain a national hazard risk assessment. However, in spite of such progress, the actual success depends on the implementation mechanism adopted by the country. This would also require a strong public and private partnership, planned mitigation measures and monitoring mechanisms.

- Secondly, with the need for building codes incorporating hazard resilient features, are the challenges of adopting such provisions in municipal by-laws, capacity building of architects and engineers for compliance and establishment, and capacity building of effective enforcement mechanisms. In addition to these challenges are the problems of dealing with existing building stock and the huge proportion of non-engineered buildings in the rural areas, which currently do not require any compliance with structural codes. Such challenges exist in almost all of the developing countries of the region, and hence, the need for large resources for retrofitting the existing stock of buildings.

- Challenges remain in ***social sectors, namely education and health***. Although the importance of their roles as critical social infrastructures in facilitating disaster recovery is well documented, much of their involvement continues to be only in preparedness and response.

National programmes focusing on improving the resilience of schools, universities, hospitals and health facilities are insufficient in scale and momentum to match the needs.

- Much of the challenges under this priority of the HFA are partly due to the complexity of the existing institutional system. This is particularly visible in the case of climate change and DRR. In spite of the close links between the two, due to the different institutional systems responsible for dealing with each, many of the required links and alignments of DRR and climate change policies and programmes, do not take place.

HFA Priority 5: Preparedness for effective Response

- Although the importance of ***disaster preparedness*** and effective response at all levels is recognised by the countries, the capacity required to meet the demand for effective planning, programmes, and mechanisms are often insufficient. Lack of resources and manpower as well as institutionalising systems like capacity building institutes, particularly at the sub national level, remains an urgent challenge.

7.3 Challenges of Implementing DRR at Regional Level

- As detailed in Section 6, in recent years in Asia and the Pacific Region, several meaningful ***frameworks*** have been developed and platforms established or strengthened to promote collaboration and regional partnership on DRR. However, the challenges remain in implementing such frameworks, which often have to compete with a range of economic and political concerns that are priorities for inter-governmental sub regional organisations, such as ASEAN, SAARC and SOPAC. On the one hand, humanitarian imperative and neutrality of disaster management agendas provide a valuable subject for regional cooperation and partnership. On the other hand, it requires tremendous drive to transcend the sectoral divide and elevate cooperation to the long-term development subject that DRR is, and sustaining the attention it needs. It must also be recognised that sub regional organisations have highly articulate and elaborate consultation mechanisms that make the decision making process lengthy; because of its various layers of committees, particularly where consensus is the preferred mode.

- The risk profile of Asia and the Pacific Region is varied as are the administrative regions, governance systems, and levels of socio economic development. Therefore, different priorities in regional DRR programming are required. As such, ***regional programmes*** with one-size-fits-all activities are not always suitable to be implemented and need to be matched with the development priorities and approaches of the respective country. This requires active coordination between various implementing agencies, at regional and national level, to avoid duplication and to increase complementary aspects in order to achieve sustainability. Although recent years have seen the establishment of mechanisms like the Regional Platform for Disaster Risk Reduction, which are important for advocacy and information sharing, much coordination still needs to be achieved at an operational level.

- Typically, ***programmes*** implemented at a regional scale primarily look into development of tools and techniques, advocacy, awareness raising, capacity building and some demonstration projects. The approaches and outputs of the programmes are expected to add value to existing or planned national programmes. Similarly, specific tools and processes adopted by national programmes should be shared with surrounding countries through the regional programmes. Gaps remain when implementing regional and national programmes by different entities; and specific challenges need to be overcome to achieve more effective coordination, synergy and coherence.

- At an ***institutional*** level, gaps exist in the lack of clarity in the roles of agencies that work at a regional level and the programmes at a national level. In addition, there are information gaps and challenges of donor coordination which impact on programming coherence and the desired and needed synergy. This often leads to overlapping and duplicated initiatives and unnecessary competition for scarce resources.

- To address these challenges, one of the proposed priority activities of the ISDR Asia Partnership is to undertake a ***regional stocktaking and mapping*** of past and ongoing regional DRR initiatives; and maintain this database with periodic updates. It is expected that this will provide widely available information to key stakeholders; namely, countries, regional and global organisations, and donors when they identify gaps and plan new initiatives.

7.4 Priority Concerns

Need for National Risk Profiles and Sub Regional Hotspots Analysis

- More than twenty countries in Asia and the Pacific Region have been identified as natural disaster hotspot countries based on the criteria of having more than 30% of the population and/or GDP present in areas which are at risk from two or more hazards. These are Taiwan, China, Republic of Korea, Vietnam, Japan, Bangladesh, Philippines, Guam, Thailand, Iran, Uzbekistan, Jordan, Indonesia, China, Hong Kong, China, Kyrgyz Republic, India, Niue, Korea DPR, Azerbaijan, Pakistan, Georgia, Tajikistan, Syria and Cambodia. Reducing the disaster risk in these countries thus becomes a priority. These criteria are also needed to construct national risk assessments and risk profiles to rank provinces and districts at risk and identify the hotspot jurisdictions in each country.

Small Island Developing States

- The large economies of Japan, China, and Republic of Korea are the most affected by natural disasters; however, it is the smaller countries and the Pacific Island countries that see their share of GDP affected the most by natural disasters. In fact, the economy of the Pacific Island countries is particularly vulnerable to disaster shocks. Being small economies, the impact of disasters is felt by the islands even though the actual event might take place in other surrounding islands. In fact, the annual damage average for these countries is 2-7%

of GDP in both disaster and non-disaster years. This is because the effects of the damage extend beyond the year of the disaster[9].

Urban Risk Reduction

- Asia is an urbanising region; with over 50% of its population living in urban areas. Asia's mega cities and its rapidly growing secondary cities and towns are under threat from both natural and technological hazards as well as climate change, especially in coastal and low lying regions. It is imperative to support local authorities and city-based organisations and coalitions to address urban risk. This can be done by building on the experience of successful programmes over the last decade and half, in cities with the urban poor living in marginal land, river banks, flood plains and unstable slopes.

Climate Change Adaptation

- Climate change poses a threat to the region, with specific hotspots in coastal regions and deltas. In fact, the mega deltas of South and Southeast Asia will be among the areas most affected by rising sea levels and changing typhoon frequencies. The magnitude of the impact and the loss of coastal vegetation will not only be felt inland, but damage to commercial fisheries and other activities such as tourism, will also be greatly felt. Much of the region's GDP in sub regions like East Asia comes from coastal areas (especially China), where the impact of rising sea levels and weather related disasters is the greatest[10]. Hence, critical priorities include a need for a better understanding of possible and probable impacts and active efforts to support countries in adapting to climate change.

Improved Data Gathering and Analysis of 'Local' Disasters

- There is a strong need to advocate for policies recognising the importance of low intensity localised disasters. These are sometimes over extensive areas and mostly climatic in origin. Most of these disasters are not recorded due to lack of data at the national and sub national level. Although these disasters might be small in scale, they could have significant impact on mortality and economic loss, specifically for countries which are not exposed to large scale hazard events.

Dealing with ENSO: Better Use of Climate Information

- Historical patterns show that the El Niño phenomenon is likely to recur and have a major impact in the region; hence, attention should be given to ways to reduce adverse effects of extreme weather events, particularly in ENSO years. Thus, what is needed are better regional, national and local forecast systems, an improved understanding of sectoral impacts and benefits, and programmes to use advanced forecasting.

Trans-boundary Hazard Risk Management

- Trans-boundary hazard risk management should be a priority for sub regional cooperation frameworks. This is equally important for all the sub regions, whether it is a glacial lake out burst leading to downstream flooding in the Himalayan countries, the annual flooding

[9] The World Bank, 2006

[10] The World Bank, 2006

in Cambodia, Lao PDR and Vietnam in the Lower Mekong Delta, or trans-boundary haze pollution resulting from land and forest fires, to name a few. The sub regional agreements and programmes need continued momentum and operation.

7.5 Suggested Approaches and Thematic Areas for 2008-2010

Considering the challenges highlighted and the priority concerns identified, this section provides suggested approaches and thematic areas for action for the years 2008—2010, in order to facilitate a workable implementation of the HFA for the countries in the region.

- **Developing National DRR Action Plans:** For those countries that have not yet done so, the development of National DRR Action Plans covering the next three to eight years is a priority. The plans should be developed within the broader framework of the HFA but the elements chosen for implementation will depend on current status and identified priorities. These plans should be in line with the national development priorities and developed with active multi-stakeholder consultation led by the National Disaster Management Office, preferably in partnership with the National Agency for Planning.

- **Implementation of National DRR Action Plans:** In countries such as Cambodia, Indonesia, Philippines, Vietnam, Sri Lanka, and Thailand where such plans have been developed in recent years, the focus should be on taking up and accelerating implementation. This could include selecting high-risk provinces and districts for priority programming. Furthermore, a mechanism should be put in place for periodic review and update of the plan based on the level of actual implementation and resource mobilisation.

- **National DRR Programmes:** National DRR programmes should be developed and implemented with emphasis on community led initiatives, integrated gender perspectives and special emphasis on children. In countries such as Bangladesh, China, India, Nepal, Pakistan, Philippines, and Vietnam, the programmes should focus more on hydro meteorological disasters with emphasis on early warning systems, disaster preparedness and mitigation. For countries with a relatively high human vulnerability to geological hazards, such as Afghanistan, India, Indonesia, Iran, Philippines, and Russian Federation, there should be a special focus on programmes to reduce the underlying factors of risk, like revising building and structural codes to incorporate DRR, and adopting hazard resilient construction in development regulations, particularly in urban areas.

- **Mainstreaming DRR into Development:** Priority Implementation Partnerships on mainstreaming DRR into development should be taken up between National Disaster Management Offices, Planning and Finance Ministries and sectoral ministries within the framework of the Hanoi RCC 5 Declaration on *Mainstreaming DRR into Development in Asia*. Furthermore, integrating disaster risk impact assessments in all development projects in the country should be advocated.

- **Comprehensive Risk Assessments:** Taking stock of initiatives in the countries on hazards and vulnerability assessments can form the base for carrying out a comprehensive multi-hazard risk assessment on a national scale. This process needs to be led by a consortium of national agencies, such as the ones responsible for DRR, development regulations, mapping, and technical institutes, so that the assessments carried out are actually used for policy and planning. This also needs to be linked to initiatives for establishing disaster databases and systems for post disaster assessments.

- **Multi-hazard Early Warning System:** Integrating the Tsunami Early Warning System for the Indian and the Pacific Oceans into multi-hazard frameworks can ensure the long-term sustainability of the existing regional Tsunami Early Warning System efforts, both in terms of finance and operation. It is equally important to build warning systems for more frequent hazards, such as floods, cyclones and landslides. Such warning systems should be end-to-end and multi-hazard. There should be special emphasis on community preparedness for protective action when receiving a warning and development of a protective infrastructure.

- **DRR in School Curricula:** Support should be continued with wider stakeholders, especially with the private sector, for integrating DRR into school curricula, as highlighted in the *Ahmedabad Action Plan for School Safety* and *Bangkok Action Agenda for DRR and Education*.

- **Safer Schools and Hospitals:** Develop Action Plans and initiate implementing the evaluation and retrofitting of lifeline buildings, schools and hospitals in all countries of the region. Moreover, it must be ensured that new schools and hospitals constructed in hazard prone areas have appropriate hazard resilient construction standards and location. This effort should be linked to and benefit from the ongoing 2008—2009 Global Campaign on *Hospitals Safe from Disasters,* the 2006—2007 Global *School Safety Campaign,* and the new "Safe Schools and Hospitals" initiative of GFDRR.

- **Institutionalising Capacity Building for DRR:** Nationwide programmes on capacity building for DRR should be undertaken in partnership with national training institutes. The programmes should also tie up with the public training institutes of the government line agencies and initiate capacity building for professionals from each sector. These programmes should have equal focus on building the capacity of women in recognising the important role they play in DRR.

- **Learn from HFA Monitoring Process:** The HFA Monitoring and Reporting process geared up to the Second Session of the GPDRR in 2009 is currently underway through a consultative process in each country. The insights gained and the priorities identified from this process should be used to select specific areas for action from the HFA agenda for prioritised implementation at the national level. In addition, specific selected high-risk provinces, districts and cities should be identified for focused implementation of local DRR programmes; in partnership with local authorities, local institutions, humanitarian NGOs and other development partners.

Annex 1 List of Key Acronyms

ACDM	ASEAN Committee on Disaster Management
ADB	Asian Development Bank
ADPC	Asian Disaster Preparedness Center
ADRC	Asian Disaster Reduction Center
ADRRN	Asian Disaster Reduction and Response Network
ASEAN	Association of Southeast Asian Nations
AUDMP	Asian Urban Disaster Management Program
AusAID	Australian Agency for International Development
CDMP	Comprehensive Disaster Management Programme
CHARM	Comprehensive Hazard and Risk Management
CRED	Centre for Research on the Epidemiology of Disasters
DFID	Department for International Development
DIPECHO	Disaster Preparedness Programme of the European Commission's Humanitarian Aid Office
DM	Disaster Management
DRI	Disaster Risk Index
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
ECHO	European Commission's for Humanitarian Aid Office
EMDAT	Emergency Events Database
EWS	Early Warning Systems
GPDRR	Global Platform for Disaster Risk Reduction
GIS	Geographic Information System
FAO	Food and Agriculture Organization of the United Nations
HFA	Hyogo Framework for Action
IAP	ISDR Asia Partnership
IDNDR	International Decade for Natural Disaster Reduction
IFI	International Financial Institutions
JICA	Japan International Cooperation Agency
MDG	Millennium Development Goals
NGO	Non-Governmental Organization
OFDA	Office of the Foreign Disaster Assistance
PNG	Papua New Guinea
PRSP	Poverty Reduction Strategy Papers
RCC	Regional Consultative Committee
SAARC	South Asian Association for Regional Cooperation
SDMC	SAARC Disaster Management Centre
SIDS	Small Island Developing States
SNAP	Strategic National Action Plan
SOPAC	South Pacific Applied Geoscience Commission
UNAMA	United Nations Assistance Mission in Afghanistan
UNDP	United Nations Development Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNESCO	United Nations Educational, Scientific and Cultural Organization
UN-HABITAT	United Nations Human Settlement Programme
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UN/ISDR	United Nations International Strategy for Disaster Reduction
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
USAID	United States Agency for International Development
UXO	Unexploded Ordinance
WCDR	World Conference on Disaster Reduction
WFP	World Food Programme
WHO	World Health Organization
WMO	World Meteorological Organization

Annex 2 List of Reports

A. National Reports submitted to WCDR

East Asia and Pacific

- Disaster Reduction Report of the People's Republic of **China**
- National Report of **Japan** on Disaster Reduction
- National Report and Information on Disaster Reduction of Republic of **Korea**
- National Report**, Mongolia**
- National Report of **PNG**
- National Report of the **Russian Federation**

Southeast Asia

- National Report**, Cambodia**
- National Information**, Indonesia**
- **Philippine** Report on Disaster Reduction
- Disaster and Risk Reduction in **Thailand**
- National Report on Disaster Reduction in **Vietnam**

South Asia

- National Information of **Afghanistan**
- **Bangladesh** Country Report
- National Report of **Bhutan**
- Disaster Management in **India**
- National Report**, Nepal**
- A Review of Disaster Management Policies and Systems in **Pakistan**
- National Disasters in **Sri Lanka**

West and Central Asia

- National Report on Disaster Reduction in **Armenia**
- National Report of **Iran** on Disaster Reduction
- National Information Related to Disaster Risk Reduction of **Jordan**

B. National Reports submitted to GPDRR

East Asia and Pacific

- Report on progress towards implementing HFA in Republic of **Korea**

Southeast Asia

- **Malaysia's** HFA Progress Report
- HFA Implementation in the **Philippine**
- Report on progress towards implementing HFA in **Singapore**
- **Thailand** Report on progress towards implementing HFA
- **Vietnam** Country Report on progress towards implementing HFA

South Asia

- Report on progress towards implementing HFA in **Bangladesh**
- Report on progress towards implementing HFA in **India**
- Report on progress towards implementing HFA in **Nepal**
- **Pakistan** Report on HFA Implementation
- Report on progress towards implementing HFA in **Sri Lanka**

West and Central Asia

- National Report of **Iran** on implementation of HFA

C. Regional Reports submitted to GPDRR

- Regional Report on implementation of HFA submitted by ADRC
- Regional Report on implementation of HFA submitted by SAARC Disaster Management Centre
- Progress Report on implementation of HFA in the Pacific Islands Region submitted by SOPAC

Annex 3 List of Boxes

Annex 4 Summary Table of Regional Entities (UN Agencies, Regional Organisations & Forums)

	Name	Date of Establishment	Location of Secretariat	Status and Membership
Regional Offices of UN and other Agencies				
1	UN-ISDR Asia Pacific Outreach Office	2005	Bangkok	UN Agency Regional Office
2	UNOCHA – Regional office for Asia	2001	Kobe and Bangkok	UN Agency Regional Office
3	UNDP-Regional Disaster Reduction and Response	2002	Bangkok	UN Agency Regional Office
4	UNEP – Regional Office for Asia and the Pacific	1972	Bangkok	UN Agency Regional Office
5	UN ESCAP	1947	Bangkok	UN Agency Regional Commission
6	WFP		Bangkok	UN Agency Regional Office
7	FAO	1947	Bangkok	UN Agency Regional Office
8	UNICEF		Bangkok Kathmandu	UN Agency Regional Office
9	WHO		WPRO- Manila SEARO-New Delhi	UN Agency Regional Office for Western Pacific UN Agency Regional Office for South East Asia
10	UNESCO		Bangkok Jakarta	UN Agency Asia and Pacific Regional Office
11	UNIFEM		Delhi Bangkok	UNIFEM South Asia Regional Office UNIFEM East and Southeast Asia Regional Office
12	ILO		Bangkok	UN Agency Regional Office
13	UNCRD	1999	Kobe	Disaster Management Planning Hyogo Office
14	IFRC Asia-Pacific DM unit	1995	Kuala Lumpur	IFRC Asia-Pacific Regional (Zone) Delegation
Regional Organisations				
15	ASEAN	1976	Jakarta	Regional Organisation
16	ASEAN Committee on DM (ACDM)	2003	Jakarta	ASEAN Committee
17	SAARC	1985	Kathmandu	Regional Organisation with 8 member states; Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka
18	SAARC Centre for Disaster Management	2006	New Delhi	SAARC Centre
19	SOPAC (Pacific Islands Applied Geoscience Commission)	1972 (1995 – regional mandate for DRM)	Fiji	21 Member Countries and Territories. Facilitator of the Pacific Regional Disaster Risk Management Network
20	ADPC	1986	Bangkok	Regional Organisation
21	ADRC	1998	Kobe	Regional Organisation
22	Mekong River Commission	1995	Vientiane	Cambodia, Lao PDR, Thailand, Vietnam
23	Stockholm Environment Institute Asia office (SEI)	2004	Bangkok	Regional Organization
24	World Wide Fund Greater Mekong Programme	2005	Hanoi	Sub-Regional Coordination Organization
25	International Union for the Conservation of Nature Asia Regional Office (IUCN ARO)	2002	Bangkok	Regional Coordination Organization
Regional Networks				
26	Asian Disaster Reduction and response Network (ADRRN)	2001	Kuala Lumpur	Network of 17 NGOs across South and South East Asia
27	Duryog Nivaran – Network of NGOs in South Asia	1995	Colombo	Network of 20 NGOs across South Asia

Regional Committees/Mechanism/Forum				
28	Asian Ministerial Meeting on DRR			Regional Platform for DRR
29	ISDR Asia Partnership	2003	Bangkok	ISDR , ADRC , ADPC, UNDP, ESCAP, UN OCHA Expanded in 2007 to 20 agencies
30	ASEAN- Expert group on DM (AEGDM)	1978	Jakarta	ASEAN Committee
31	ASEAN Ministerial Meeting on DM (AMMDM)	2004	Jakarta	ASEAN Committee
32	ASEAN senior officials on Environment (ASOEN)	1980s	Jakarta	ASEAN Committee
33	ASOEN – Haze Technical Task Force ASEAN Senior Officials on Environment (HTTF)	1996	Jakarta	ASEAN Committee
34	ASEAN Regional Forum inter-sessional meeting on Disaster Relief (ARF-ISMDR)	1997	Jakarta	ASEAN + 13 Dialogue Partner Countries
35	APEC Task Force on Disaster Preparedness	2005	Singapore	APEC (21 Pacific Rim Countries including 9 ASEAN countries) Australian and Indonesian Government co chairs
36	ESCAP-WMO Typhoon Committee (Economic and Social Commission for Asia and the Pacific) (World Meteorological Organization)	1968	China	Regional Committee of 14 member countries primarily from South East Asia
37	ESCAP-WMO Tropical Cyclone Panel	1973	Bangkok	Regional Committee of 10 member countries primarily from South East Asia
38	Regional Consultative Committee (RCC) on Disaster Management – ADPC	2000	Bangkok	30 Heads of NDMOs from 26 Asian Countries
39	Regional Multi- Hazard End-to-End Early Warning System	2005	Bangkok	Regional Mechanism of 15 Countries
40	SAARC – Technical Committee on Metrology , Environment and Forestry	1986	Kathmandu	SAARC Committee
41	Bay of Bengal Initiative for MultiSectoral Technical and Economic Cooperation (BIMSTEC)	2002		Sub regional mechanism for selected South and South East Asian Countries Member Countries ; Bangladesh, India, Myanmar Sri Lanka, Thailand, Bhutan Nepal
42	Consultative Meetings of Regional Organizations and Regional Offices of UN Agencies	2001		Co organised by ADRC, UNOCHA, ADPC, WHO, UNDP and attended by 21 entities
43	South East Asian Disaster Management Practitioners Forum	1999	Convened by ADPC , IFRC, UNESCAP and ECHO	Regular Forum of 30 CBDRM practitioner organizations and national networks from 6 Southeast Asian Countries
44	Regional Committee of Red Cross and Red Crescent National Societies, • in Southeast Asia: Regional Disaster Management Committee • in South Asia: Disaster Management Working Group			• 11 National Societies, including ASEAN and East Timor • 7 National Societies: India, Pakistan, Bangladesh, Sri Lanka, Afghanistan, Nepal, and Maldives.
45	Disaster Environment Working Group for Asia (DEWGA)	2007	Convened by ADPC, CARE, IUCN, Kyoto University, SEI, WWF, (UNEP and UNISDR)	Cross-sectoral partnership of 6 organizations
46	Mangroves for the Future (MFF)	2006	Bangkok	Regional Steering Committee composed of 6 Member countries and core partners/donors
Regional Centres				
47	MRC- Regional Flood Management and Mitigation Centre (RFMMC)	2005	Phnom Penh	Cambodia, Lao PDR, Thailand, and Vietnam.
48	PDC (Pacific Disaster Centre)	1995	Hawaii	US Government Affiliate with University of Hawaii as Managing Partners since 2006 Dec,

49	COE (Centre of Excellence in Humanitarian Affairs Hawaiian)	1994	Hawaii	A part of US Department of Defense
50	East West Centre	1960	Hawaii	US Government Affiliate with PDC Managing Partner (2001-2006)

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