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Introduction

We – the co-Chairs of the APEC Task Force for Emergency Preparedness (TFEP) – would like to thank Viet Nam for hosting the Third APEC Emergency Management CEO's Forum and congratulate the organisers on a high-quality and very successful event. The annual Emergency Management CEO's Forum is one of the flagship events in the Task Force for Emergency Preparedness calendar. We thank all those who participated, particularly those that generously shared their experiences and expertise.

The reports, principles and recommendations included in this publication demonstrate the value of this Forum, and the contribution that it can make to protect business, trade and economic growth from disruptions caused by disasters, and other emergencies.

The Emergency Management CEO's Forum provides a platform for APEC members to share ideas, lessons learnt and best practices, and to support voluntary APEC-wide initiatives and guidelines. It helps member economies – both individually and collectively – better prepare for and respond to disasters. The Forum also helps TFEP members engage with other multilateral organisations, the private sector, non-government organisations and civil society.

APEC Senior Officials established the TFEP in 2005 as part of APEC's response to the Indian Ocean Tsunami. The Task Force was given a broad mandate to build capacity in the region to mitigate, prepare for and respond to emergencies and natural disasters.

We believe APEC, through the TFEP, is well-placed to strengthen business resilience and the participation of the business sector in emergency preparedness and management. This is APEC's niche role and comparative advantage in an otherwise crowded sector. The Task Force seeks to leverage APEC's strengths of multi-sectoral participation, private-sector partnerships, broad regional reach, and high-level political involvement to help member economies achieve APEC's economic and broader human security goals. High-level participation in the Emergency Management CEO's Forum helps the TFEP achieve this.

Throughout 2009, the TFEP has focused on six core areas: business and community resilience; public-private partnerships; disaster risk reduction; cooperation and coordination among heads of APEC emergency management agencies; preparations for the recovery phase; and integration of disaster risk awareness and management education into school curricula. We were pleased to see many of these issues discussed at this year's Forum.

The frequency, intensity, scale and impact of disasters will continue to rise over coming decades, particularly those involving extreme weather events. Governments in the region and their emergency management agencies will thus increasingly face humanitarian crises, economic disruptions and growing public expectations. Preparedness and disaster reduction is the key. This is yet another reason why the annual gathering of emergency management CEOs is so important.

We look forward to working with CEOs again at the 2010 Forum in Kobe, Japan.

Quinton Devlin
Australia
TFEP Co-Chair

Tabrani
Indonesia
TFEP Co-Chair

Background

In the 2008 Asia-Pacific Economic Cooperation (APEC) Economic Leaders Meeting Declaration, Leaders recognized that there continued to be operational challenges in regional disaster responses and greater coordination is needed as the number of disaster management arrangements and players in the region continues to grow. Leaders agreed that greater focus is needed on disaster risk reduction, emergency preparedness and building domestic disaster management capabilities. They also endorsed the priority APEC has given to promoting risk management, business resilience and public-private sector partnerships, and supported efforts to prepare economies for the recovery phase.

In the 2008 AMM Statement, APEC Ministers underlined the importance of building community and business resilience to natural disasters and other emergencies and reinforced the importance of public-private partnerships. With that in mind, the Ministers endorsed the concept of holding Emergency Management CEOs Forum annually to 2013 and welcomed Viet Nam's offer to host the third Emergency Management CEOs Forum in 2009.

Themes

The CEOs of APEC emergency management agencies reviewed disaster risk and disaster management in the Asia Pacific region, with a particular emphasis on the importance of risk identification and management, and strengthening the linkages and cooperation among emergency management agencies.

A number of themes emerged during the Forum.

Public-Private Partnerships

- Recognised the importance of strengthening public-private partnerships and explored issues relating to business resilience; operational cooperation and continuity; and Corporate Social Responsibility (CSR).
- Noted the importance of addressing/resolving issues relating to the legal liability of businesses and providing recognition, incentives and information to private sectors.
- Looked forward to the upcoming APEC workshop on Public-Private Partnerships for Business Resilience co-hosted by Australia and Thailand.

Disaster Risk Reduction (DRR)

- Underlined the importance of integrating DRR into school curricula and welcomed the draft principles proposed by Australia.
- Welcomed efforts to extend the lead time (early warning) through climate and extreme weather event prediction.
- Agreed further work could be undertaken on improving the timeliness and effectiveness of hazard warning communications and the call for action at the local level.
- Recognised the importance of a whole-of-government and society approach to DRR and agreed business sector and community engagement was important.
- Noted Peru's work on an implementation guide for the Strategy on Disaster Risk Reduction and Disaster Management and Response in the APEC Region 2009-2015 and looked forward to working further with Peru on its implementation.

Climate Change Adaptation

- Recognised the significant impact of climate change on the increase in disaster frequency and intensity, and the subsequent implications for the disaster and emergency management community.
- Recognised the important role of climate predication to the development and implementation of disaster and emergency management plans.
- Noted the need for greater certainty in climate prediction information for effective disaster and emergency management planning.

Volunteers

- Noted the importance of volunteers to emergency and disaster management. Both in terms of the work carried out by non government organisations and by civil defence type organisations in responding to an event.
- Noted the challenges of attracting, recruiting and retaining volunteers, including highlighting the benefits to employers of releasing employees. Employers' contribution to society / community safety or ongoing viability could be measured via sustainability reporting processes.
- Agreed there would be value in APEC member economies sharing their experiences in attracting, recruiting and retaining emergency management volunteers, as well as managing 'spontaneous' volunteers.
- Agreed that the issue of "volunteers" be discussed at the 2010 CEOs Forum.

Lessons Learned

- Shared experiences and lessons learned by member economies on recent disasters including the Victorian Bushfires (Australia), Wenchuan Earthquake (China), Typhoon Morakot (Chinese Taipei) and Xangsane Typhoon (Viet Nam), as well from the challenges faced by Quang Ninh Province.
- Welcomed the participation and experiences of representatives from the Pacific Disaster Centre; Asian Disaster Preparedness Centre; World Health Organisation; UN ISDR Secretariat; Viet Nam Red Cross Society; Center for Public Safety Research, Tsinghua University; Australian Curriculum, Assessment and Reporting Authority; APEC Climate Centre; and APEC Health Working Group.

Damage Assessment Techniques

- Welcomed draft principles developed at the APEC Workshop on Damage Assessment Techniques hosted by Australia and Indonesia in August 2009.
- Noted the importance of resilience but stressed the need to improve and upgrade building standards.

Pandemics

- Welcomed update on HINI in the Asia-Pacific region, noting that pandemics are inherently unpredictable.
- Noted the potential impacts on the emergency management sector and critical infrastructure if there is significant absenteeism due to a pandemic.
- Noted that a whole-of-government response to pandemic is critical to ensure effective response and management of the event.

Cooperation

- Noting that governments were primarily responsible for disaster preparedness, management and response, CEOs agreed that the Forum and the TFEP were important vehicles to strengthen the development of national capabilities, capacity and resilience, including in accordance with the Hyogo Framework for Action.
- Discussed opportunities to strengthen APEC-ASEAN cooperation.
- Noted the importance of technical assistance and technological transfers from developed to developing economies.
- Noted opportunities for cooperation and collaboration with the APEC Climate Centre and APEC Health Working Group.

Strengthening the CEOs Forum

- Welcomed and noted Japan's focus on urban risk reduction and climate change in 2010.
- Identified climate change adaptation and volunteers as priority themes for forthcoming Forums.
- Called for nominations to draft a five-year non-binding strategic business statement that would consider the future priorities, name and frequency of the Forum. [Australia, Indonesia and Peru]
- Noted the composition/structure of the Steering Group. The Group will continue to consist of Australia and Indonesia (standing members) and the immediate past, current and future host economies.
- Noted that the Forum should be referred to as 'Forum' not 'Summit'.
- Noted the importance of high-level CEO attendance at the Forum.

Key Decisions & Recommendations

1. CEOs underlined the importance of **public-private partnerships** in disaster preparedness, management and response, and agreed to share their economies' experiences and challenges ahead of the APEC Workshop on Public-Private Partnerships for Business Resilience in 2010 and to explore ways to foster corporate social responsibility, business resilience and operational continuity.

2. CEOs agreed that **disaster risk education and communication** was critical to business and community preparedness, particularly the integration of disaster education in school curricula and the use and effectiveness of hazard warnings to inspire action. CEOs considered draft principles on integrating disaster education in school curricula and recommended TFEP finalise APEC-wide guidelines.

3. CEOs recognised the important role that **volunteers**, both government and non government, play in disaster management and response, and agreed to share experiences and challenges. CEOs welcomed opportunity to discuss further in Kobe and Australia's offer to investigate possibility of a workshop.

4. CEOs underscored the importance of clarity on the potential impacts of **climate change** and extreme weather events so that the disaster management community can plan for the future.

5. CEOs welcomed in principle the TFEP's draft principles on **disaster damage and loss assessments**, highlighting the importance of capturing the full socio-economic impact to justify resource allocations for disaster risk reduction activities.

6. CEOs accepted Japan's invitation to **meet again in Kobe** in January 2010 with a view to sharing experiences and lessons learned on urban risk reduction and climate change adaptation. CEOs also noted the 4th Asian Ministerial Conference on Disaster Risk Reduction next year in the Republic of Korea. CEOs also agreed to develop a business plan to set the strategic direction of the Forum.

7. CEOs urged APEC Senior Officials to renew the mandate of the APEC Task Force for Emergency Preparedness (TFEP), and reinforced the importance of APEC member economies – supported by the TFEP – implementing the Strategy on Disaster Risk Reduction and Disaster Management and Response in the APEC Region 2009-2015. CEOs agreed to recommend the renewal of the TFEP mandate and recommend SOM consider up grading to Working Group.

8. CEOs agreed to **enhance cooperation** with regional institutions.

Disaster Risk Education at Schools - Principles

In accordance with the recommendation of APEC Emergency Management CEOs, the Task Force for Emergency Preparedness has approved the following principles.

Principles

1. Disaster risk education at schools should be embedded as a key pillar of broader public disaster risk education to enhance community resilience to disasters, gain support for school-led activities, and motivate citizens to participate in local and regional risk mitigation and planning.
2. Disaster risk education should be integrated into school curricula because children are among the most vulnerable during a disaster and they are very effective communicators and disseminators of disaster risk reduction and preparedness messages at the family and community level.

Education materials

3. Schools should teach about all stages of the disaster risk reduction cycle, therefore education materials should introduce students to disaster prevention, mitigation, preparedness as well as response and recovery.
4. Education materials should introduce students to land use planning, building codes, insurance and environmental stewardship, where applicable, as means of managing and reducing disaster risk.
5. Education materials should supplement a range of academic subjects, be rooted in existing learning materials, suit the local context, and be culturally sensitive taking into account indigenous and traditional knowledge.

Pedagogy (teaching strategies)

6. Disaster risk education should be cemented through learning extensions at home and the encouragement of child-parent and teacher-parent communication and activities such as community risk mapping, community-based fairs and exhibits, and publicized drills.
7. Disaster education in schools should highlight the importance of child-led disaster risk reduction and response cadres in and out of school at the community level and of reaching out to children with disabilities, their teachers and parents.

Integration

8. Disaster risk education should be integrated into formal education at all levels including, pre-primary, primary, secondary, and tertiary levels, as well as non-formal education and into teacher education and training.
9. The development and integration of disaster risk education into national curricula should be led by the Ministry of Education, involve national and local governments from various sectors and be based on a multi-stakeholder approach engaging the private sector, communities as well as UN, other international and donor agencies. Disaster risk education at schools is a continuous process that requires a constant collaborative effort from all stakeholders.
10. Integrating disaster education at schools should take into account the national education policy and the curriculum revision cycle so disaster risk awareness is introduced to the curriculum development board before or during the actual revision phase. Time is needed to develop and pilot the curriculum, train the teachers, and make budgetary arrangements. A disaster, while tragic, can be a useful trigger for changing education, research policies and practices.
11. Local community and civil society stakeholders should be involved in the development of disaster risk education materials for schools to help identify local risks and response measures. Often, the schools themselves form part of the response plan. Equally, disaster risk education policies should be taken into account in local development planning and future growth strategies.
12. To ensure the effectiveness of disaster risk education, regular monitoring and evaluation should be carried out. This could involve measuring the ability of students to cope with and learn from a disaster, and whether an emergency management plan has been prepared and maintained by a student's family.

Making schools safer

13. Resilience of school buildings should be ensured through adherence to building codes, land use planning, and emergency plans. School buildings should be retrofitted to meet safety standards. This could also contribute to training local builders and raising public awareness.

Recommendations for individual APEC member economies (as appropriate)

14. Motivate political commitment and strengthen legal support frameworks for the integration of disaster risk education at schools to move from pilot projects to the mainstreaming of disaster risk education at schools.
15. Promote inter-sectoral and inter-institutional support for the integration of disaster risk reduction into school curricula.
16. Link disaster risk education initiatives to national development planning.
17. Develop and enforce minimum standards for disaster-resistant schools.

Disaster Risk Education at Schools: Best Practice and Principles for APEC Member Economies

Discussion Paper prepared by CSR Asia, Hong Kong, August 2009

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1. Executive summary

The Hyogo Framework of Action (HFA) stresses the “use of knowledge, innovation and education to build a culture of safety and resilience at all levels" as one of the five priorities of action with a focus on including disaster education in formal and non-formal education at all levels.

The ongoing discussion on disaster risk education mainly revolves around the following four issues:

- The integration of disaster risk education at schools into the broader context of community disaster education
- The shift from a disaster response and preparedness focus to an adequate integration of the disaster risk reduction (DRR) concept into school curricula
- Policy development and advocacy for disaster risk education at schools
- The mainstreaming of safer school building design and construction

Since the adoption of the HFA a large number of initiatives at regional and national level have addressed these issues with the aim to advance disaster risk education at schools, such as the Decade of Education for Sustainable Development 2005-2014 and the School Earthquake Safety Initiative 2005-2009.

These principles acknowledge the current discussion on this issue and are in line with the HFA recommendations and findings of the Third Asian Ministerial Conference on Disaster Risk Reduction. They draw on lessons learned from member economies which have already begun integrating DRR into school curricula, some of which are briefly evaluated in this paper.

The principles outline the general objective and scope of disaster risk education at schools and advocate for education materials to teach all stages of DRR and to be rooted in existing learning materials. The principles further highlight the need for learning extensions at home and the involvement of local community and civil society groups in the development of education materials in order to successfully integrate disaster school education into community disaster education. The principles also stress the importance of a multi-stakeholder approach and the alignment with the national curriculum revision cycle. Lastly the principles outline requirements to increase resilience of school buildings.

2. Introduction

Asia-Pacific is one of the most disaster-prone prone regions. In 2008 natural catastrophes and man-made disasters caused 240,500 fatalities most of which happened in Asia (228,400).[1] Children are often among the most vulnerable. The Wenchuan Earthquake in Sichuan, China, killed about 7,000 students who were trapped in damaged school buildings. During the 2005 Kashmir earthquake around 8,000 school buildings collapsed and 18,000 children died.[2] In 2005 hurricane Katrina led to the closure of 700 schools; in Louisiana 40 schools were destroyed and 875 were damaged and in Mississippi 16 schools were destroyed and 287 were damaged. The congress had to appropriate US$ 645 million to cover education costs for the 372,000 displaced school children for the 2006-2006 school year.[3] This highlights the need for effective disaster response practices and mechanisms but in particular for improved pre-disaster risk reduction to decrease disaster vulnerability and mitigate impacts. Under the Hyogo Framework for Action education has been identified as key to mitigating the impact of natural disasters.

In August this year CSR Asia was commissioned by the Attorneys General Department (AGD) of the Government of Australia, on behalf of the APEC Task Force for Emergency Preparedness (APEC TFEP)

- to assist in the development of common definitions and language among APEC Member Economies for disaster risk awareness and management education in schools curricula and
- to prepare a draft list of APEC-wide best practice examples and school education principles for the Third Emergency Management CEO's Forum in Ha Noi, 15-17 September 2009.

On this account, the paper briefly outlines approaches for disaster risk education at schools in APEC Member Economies and elaborates on key strategies and lessons learned. A draft list of principles for integrating disaster risk awareness and education into school curricula is presented as a starting point for further discussion within the APEC community on a common approach.

[1] SwissRe, 2009

[2] UNCRD, 2009

[3] RiskRed et al., n.d.

3. Definition and scope of disaster risk education schools

The Hyogo Framework for Action (HFA) was formulated as a comprehensive, action-oriented response to international concern about the growing impacts of disasters on individuals, communities and national development. It was adopted by 168 Governments at the World Conference on Disaster Reduction, held in Kobe, Japan, in January 2005. The HFA sets a clear expected outcome: "The substantial reduction of disaster losses, in lives and in the social, economic and environmental assets of communities and countries". In order to attain this outcome the HFA emphasizes the importance of disaster risk reduction (DRR) as a central issue for development policies and calls upon signatories to make DRR a priority. It stresses the "use of knowledge, innovation and education to build a culture of safety and resilience at all levels" as one of the five priorities of action with a focus on including disaster education in formal and non-formal education and protection of public facilities.[4]

Against this background, APEC Leaders and Ministers instructed in November 2008 that APEC officials support the inclusion of education on disaster issues in school curricula where appropriate. APEC Education Ministers also acknowledged in 2008 that much importance should be attached to providing the necessary scientific and practical knowledge about disaster risks and related competencies through the integration of disaster risk reduction education into school curricula. Separately, the Second and Third Asian Ministerial Conference on Disaster Risk Reduction, held in November 2007 and December 2008, also called upon governments to make school safety and the integration of DRR into school curricula a national priority.

It is widely acknowledged that school disaster education programmes have the potential to build community resilience to natural hazards as:

- If properly planned, built, maintained and managed, schools provide a safe haven to the children who spend most of their waking hours at school and safe facilities for public shelter in the aftermath of a disaster
- Strong leadership of teachers has been proven to be very effective in dealing with emergency situations in disaster-prone countries[5]
- Incorporating risk awareness and risk reduction strategies into school curricula contributes to institutionalising the reach of these messages to the broader public as what is learnt in childhood becomes incorporated into collective knowledge and is carried into future decision-making. In most countries children are very influential and effective communicators and knowledge disseminators at the family level.[6] It has to be considered, however, that with students learning from a broad range of sources, unless there is a prescribed activity (e.g. homework task to develop a family home emergency plan) students may not take home hazard-related learning and messages.[7]

According to the OECD (2008) risk awareness education encompasses understanding natural and biological mechanisms that may create hazards and the human vulnerability to these hazards.

According to the UN/ISDR education for DRR *is*

> *"an interactive process of mutual learning among people and institutions. It encompasses far more than formal education at schools and universities, and affects all aspects of life through the concerted efforts to overcome universal barriers of ignorance, apathy, individual interests and lack of political will present in communities. It also involves the recognition and use of traditional wisdom and local knowledge for protection from natural hazards. Education is conveyed through experience, established learning arrangements, information technology, staff training, electronic and print media and other means that facilitate the sharing of information and knowledge to citizens, professionals, organizations and policymakers, among a range of other community stakeholders. (UN/ISDR, 2005)*

Against this background disaster risk education programmes and activities need to cover:

- Preparedness conversion: Learning how to commence and maintain preparations for natural disasters.
- Mitigation behaviours: Learning what to do before, during and after a natural disaster.
- Adaptive capability: Learning how to change and maintain systems, networks and build community competencies (e.g. skills, leadership) to minimise the impacts of natural disasters.
- Post-disaster learnings: Learning how to improve preparedness conversion, mitigation behaviours, and adaptive capability after a natural disaster.[8]

In the Philippines four strategies were suggested for integrating risk reduction into the education sector. The strategies, shown in Figure 1 below, very much reflect the ongoing discussion on this issue globally and include:

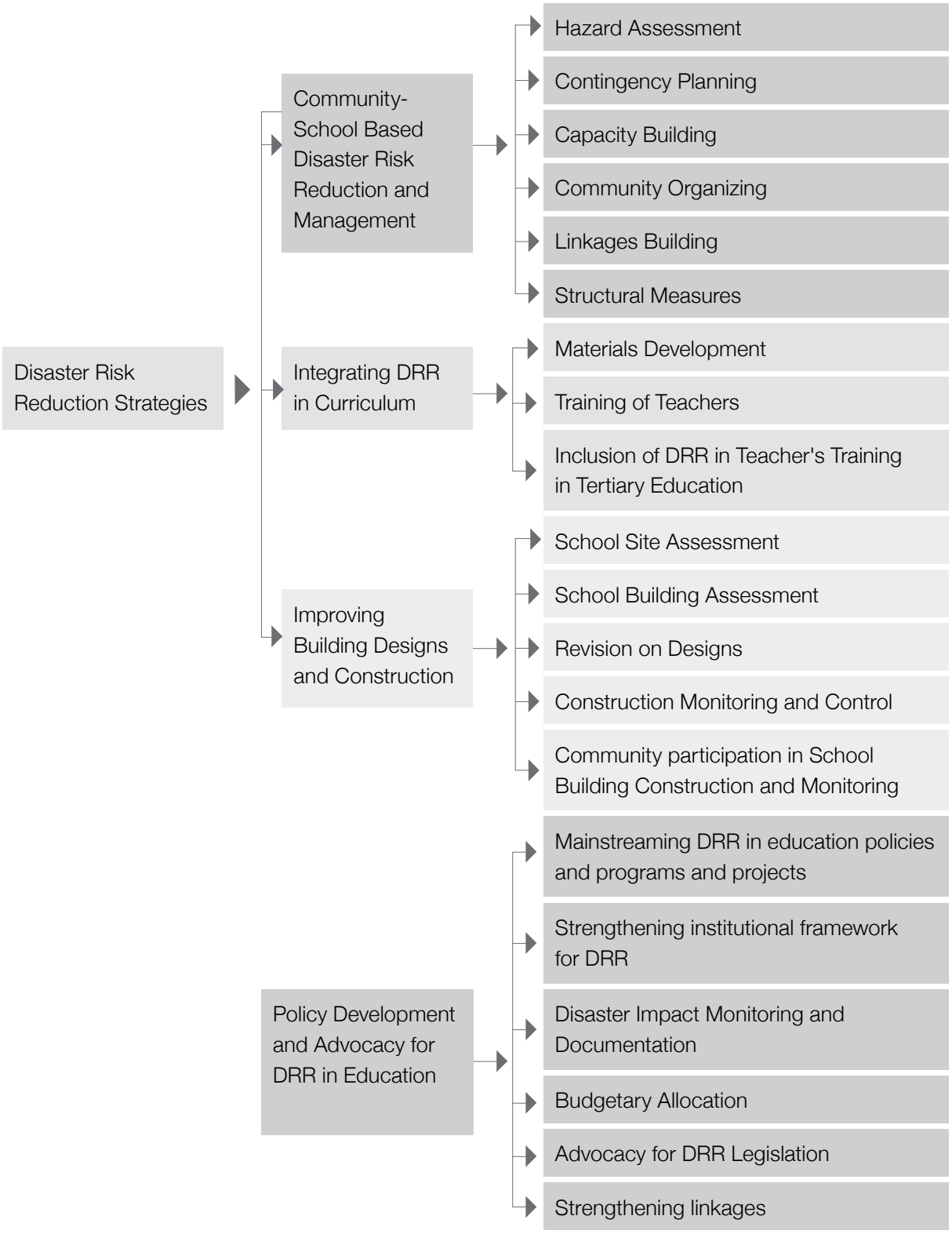
- Community-school based disaster risk reduction and management: The Center for Disaster Preparedness (2008) stresses that in the Philippines schools are a fundamental institution that are very much embedded in communities. Thus, it is important to develop schools to become centers for disaster risk reduction for both the school and its community.[9] Similarly, Dufty (2009) stresses the importance of viewing school natural hazards education as one possible component of a local community education package and of integrating it into a broader context of a learning process or activity that builds community resilience to natural hazards. Such a community education package would target a range of vulnerable groups and organisations such as the elderly, people of non-native speaking background, those living in especially high risk areas, and businesses. According to Dufty (2009) successful school programmes have integrated student learning with community risk preparedness programmes through learning extensions at home and the encouragement of child-parent and teacher-parent communication.

4 UN/ISDR, 2007a
5 UNCRD, 2008
6 OECD, 2009
7 Dufty, 2009
8 Dufty, 2009
9 The term community encompasses all spheres of government, business, industry and the general public.

- Integration of DRR in the curriculum: To create a culture of safety, DRR has to be integrated within all levels of formal education, from the pre-primary to the advanced university levels, and particular attention has to be paid to curricula and school integration, teacher training, and the assessment of learning[10]. Disaster risk education needs also to be integrated into non-formal education, which can take many forms such as community campaigns and emergency drills. Non-formal education activities can be the rapid entry point for DRR education. Within recent years indigenous and traditional knowledge and the realisation of its potential to improve DRR policies has been emphasized, especially through the linkage with disaster education and early warning systems.[11]
- Improvement of the building design and construction: Safer construction of school buildings need to be mainstreamed and preparations to be made in order to allow school buildings to provide public shelter after a disaster.[12] According to UNESCO (2009) a safe education facility is "that which is either located in a danger-free zone or has been built to be resilient to an extreme natural event". Educational facilities, new and old ones, can be made resilient through land use planning, structural reinforcement and emergency plans.[13]
- Policy development and advocacy for DRR in education: Existing institutional set-ups need to be strengthened and DRR needs to be integrated in all policies and programs of a country's national Ministry or Department of Education. Linkages to other sectoral ministries and departments need to be established in order to ensure access to resources, capacity building, advocacy and support in times of emergencies but also to coordinate the different DRR activities ad increase efficiency.[14] The aftermath of a disaster can be a turning point for changing policies and practices and for raising public awareness while simultaneously taking action to improve community safety.[15]

[10] UNESCO, 2009b
[11] UNESCO, 2009b
[12] Center for Disaster Preparedness, 2008
[13] UNESCO, 2009b
[14] Center for Disaster Preparedness, 2008
[15] UN/ISDR, 2005

Figure 14: Strategies for Disaster Risk Reduction in Education
(Source: Center for Disaster Preparedness, 2008)



3.1. Infusing disaster risk awareness into school curricula

According to Dufty (2009) a critical success factor for the uptake of natural hazard education activities in schools is

> *"the ability to embed these activities in existing school programs that are already linked to learning outcomes in curricula and syllabuses. This helps to ensure that the school will accept the natural hazards program as a valid activity as part of its existing teaching program and not as a 'one off'. Moreover, as a natural hazard can occur at any time, this approach will also mean that 'natural hazards' will be taught each year." (Dufty, 2009)*

He explains that curriculum-based programmes are developed by initially identifying opportunities for the inclusion of natural hazards education in appropriate state and territory curricula through a process known as 'curriculum mapping'. An OECD draft policy handbook on DRR education stresses the importance of elaborating the scope and sequence and competencies expected at each age level and of undertaking a full curriculum audit in all subjects to identify the appropriate insertion points. For expert advice, Dufty (2009) suggests involving the curriculum support section from the respective state or territory department of education and teachers in this process.[16]

After this, programmes need to be designed with activities that link with learning outcomes and subject matter in the appropriate parts of the curricula and thus school programmes.[17] This stage may also involve textbook revisions, development of supplemental teacher training material, introduction of the subject matter through teacher-training colleges and in-service training plans.[18]

Formal curricula approaches can involve infusion into existing courses at all grade levels, insertion of modules into existing courses, and supplemental stand-alone courses. Informal and co-curricular approaches can include special assemblies, drills, projects, competitions, festivals, exhibitions and performances.[19]

The OECD Handbook stresses the importance of developing leadership in teacher training through targeting both the education faculty as well as programmes for in-service training of existing teachers. Particular attention, therefore, needs to be paid to both curriculum and teacher support materials and their formal inclusion into national curricular guidelines.[20]

The content of risk reduction and its adequate placement in school curricula is important. Historically, disaster awareness content has been placed in science and geography courses. But also school subjects in social studies, language and literature, environment, reading, health, communications, and even art provide important opportunities for cultivating hazard and risk awareness. In this regard building knowledge about local weather conditions, nearby geological risks, or careful use of natural resources is equally pertinent as practical guidelines for risk-wise actions, problem-solving skills for risk reduction, and education on financial tools for risk sharing and protection.[21]

The Asia Disaster Preparedness Center (ADPC) Regional Consultative Committee on Disaster Management (RCC), whose aim is to provide an informal consultative mechanism for development

of action strategies for disaster reduction in the Asia-Pacific region and for the promotion of cooperative programmes on a regional and sub-regional basis, outlines the following key approaches for mainstreaming DRR into school curriculum:

- Plan in advance of the National Curriculum Development Cycle: In every economy the curriculum revision process is repeated every 3-5 years. For each grade the long revision process usually starts a year before the actual revision takes place and any new curriculum can only be taught from the beginning of a new revision cycle. It is essential to be aware of the national education policy and the curriculum revision cycle in order to take the necessary steps to introduce disaster risk awareness to the curriculum development board before or during the actual revision phase. Adequate timing is crucial in order to provide concerned agencies enough time to develop and pilot the curriculum, train the teachers, and make budgetary arrangements.
- Establish partnerships between Ministry of Education and the National Disaster Management Office (NDMO): Partnership between the Ministry of Education and the NDMO (the national agency mandated with the task of DRR) is important to ensure technical support to the Ministry as well as help in sourcing funds to initiate the process of integrating DRR into the national curriculum. The NDMO is a crucial partner in advocating for DRR integration and in generating political will.
- Adopt a consultative process: It is important to build consensus and adopt a consultative process by involving key national agencies such as Ministries of Planning and Finance since the whole process of curriculum change is linked to the development plan and the budget of the nation. Other important partners to involve include specific national hazard related technical agencies and research institutes as well as various international agencies specifically involved in education sector development such as UNICEF and UNESCO and donors like GTZ, ECHO, and JICA.
- Link with processes of the education sector programmes funded by the multilateral and bilateral agencies, and the education sector Working Group led by Ministry of Education: It is important to stay informed of education sector programmes and projects funded and implemented by various agencies and organisations in order to tap the potential of these programmes and to magnify the benefits. Among these are pipeline or ongoing programmes by multilateral, bilateral or national agencies focussing on curriculum development, construction of schools, or the publication of textbooks at different geo-political levels (e.g. provinces or districts).[22]

[16] Dufty, 2009
[17] Dufty, 2009
[18] OECD, 2009
[19] OECD, 2009
[20] OECD, 2009
[21] OECD, 2009 and UNISDR, 2004
[22] RCC, 2007

3.2. Disaster education material

An OECD Stocktaking Review on natural catastrophe risk awareness and education, published in 2008, found that much of the education material on risk awareness produced during recent decades continues to place significant emphasis on hazard identification, risk awareness, drills and emergency response. The material is often not adequately integrated with risk reduction education. Many programmes miss opportunities to introduce students to land use planning, building codes, financial pooling of risk and risk-wise environmental stewardship as means of managing and reducing disaster risk. Much of the education material for schools has been primarily developed by civic, private and public agencies with limited collaboration with regional or national education boards or ministries.

The OECD Stocktaking Review further found that material that conforms to national education standards is easier for teachers to integrate into their teaching schedules. This approach, however, typically relies on enterprising teachers and requires the integration of these materials into already full teaching programmes. The review points out that teachers "may not feel confident enough in the subject to teach it to their students, especially when student performance in other core subject material is heavily scrutinized". Therefore, support from teachers' unions, education ministries, and official mandates is important in order to fully integrate risk awareness and reduction education into school curricula.

Another finding of the review stressed the need for many countries, where innovative and in-depth education materials have been developed, to move from pilot projects to a thorough integration of these materials into national or regional curriculum standards. There is an urgent need to advance both curriculum and teacher support materials and to formally incorporate these materials into national curricular guidelines.[23]

Examples of disaster education materials being used in APEC member economies are provided in ANNEX 1.

3.3. Ensuring the effectiveness of natural hazard education programmes

According to Dufty (2009) the effectiveness of school natural hazard programmes can be measured at several levels including:

- The program compared with learnings from education psychology and leading practice: Children's understanding of concepts such as causality and prevention are strongly influenced by age-related changes in cognitive ability. The acquisition of knowledge about risk and mitigation takes place in a social context, with some elements of social context exerting more influence than others.'
- Student's understanding of the natural hazards risk
- Student's understanding of appropriate preparedness behaviours
- The preparation and maintenance of an emergency management plan by the student's family
- If a natural disaster occurs, the ability of the student to cope with and learn from the event.

Dufty (2009) points out that a major weakness in disaster education programmes is the lack of evaluation to gauge the effectiveness using measures such as those listed above. The ongoing monitoring and evaluation of awareness and education efforts are, however, essential to assure accountability and transparency, increase public confidence in the outcomes and to further build up research knowledge to guide planning. Therefore, it is important to incorporate ways to evaluate the effectiveness of immediate outcomes (e.g. awareness, personal preparedness, transfer of learning to families) into all school natural hazards programmes.[24]

[23] OECD, 2008

[24] OECD, 2009 and Dufty, 2009

4. International efforts and developments

Since the adoption of the HFA a large number of activities and initiatives have been implemented at international and regional level to advance disaster risk awareness and management education at schools. Some of these activities and initiatives are further explained in the following sections.

4.1. School Earthquake Safety Initiative 2005-2009

The UN Center for Regional Development (UNCRD) emphasizes the multifaceted role of schools in building resilience of communities and in propagating a culture of safety to communities. Its School Earthquake Safety Initiative (SESI), under the theme of "Reducing Vulnerability of School Children to Earthquakes", aims to ensure that earthquake safe schools in seismic regions and that local communities build capacity to cope with earthquake disasters.

The project is being implemented in Fiji, India, Indonesia, and Uzbekistan and comprises the following four components:

- Seismic retrofitting of school buildings: Seismic vulnerability analysis of selected schools and retrofitting of two to three schools typical to the region in each economy.
- Capacity building of communities: On-the-job training during retrofitting works for government officials and experts in the community such as masons.
- Disaster education and awareness raising: Development and wide distribution of educational materials for students, manuals for teachers, and guidelines for experts.
- Knowledge and experience dissemination: Regional and international workshops.

Best practices and lessons learned:

- The project seeks to transfer ownership of concepts and activities to governments and local stakeholders. School are therefore retrofitted in a participatory way engaging local communities, governments and resource institutions.
- School retrofitting provides an ideal opportunity to disseminate technology and train local masons about safe construction practices.[25]
- Activities like retrofitting of schools and safe school construction can significantly contribute to raising the community's awareness of the importance of safe buildings in reducing disaster impacts. The final product 'safe school' is therefore equally important as the process of achieving this product.[26]
- Engineers do not know how to convince decision makers on the benefits and importance of good and safe building design while decision makers do not know whether engineering tools are subject of public policy.[27]

4.2. Decade of Education for Sustainable Development 2005-2014

The international implementation scheme of the Decade of Education for Sustainable Development (2005 – 2014) considers disaster preparedness and mitigation as crucial issues in achieving sustainable development. Under the scheme, in April 2005 UNESCO Bangkok's programme for Education for Sustainable Development (ESD) initiated a project entitled "Education for Natural Disaster Preparedness (ENDP) in Asia-Pacific in the context of Education for Sustainable Development" (ENDP-ESD). The goal of the project is to develop the preparedness of local stakeholder groups towards disaster prevention, recognition and preparedness in selected Asia-Pacific countries. ESD is employed as a framework to facilitate holistic and critical thinking as well as problem-solving in local communities threatened or affected by disasters.

During the UNESCO World Conference on ESD, held from 31 March – 2 April 2009 in Bonn, Germany, a workshop on 'ESD and disaster risk reduction: building disaster-resilient societies' was conducted. In a concept note to the workshop the German Committee for Disaster Reduction (DKKV) and the UN/ISDR Thematic Platform on Knowledge and Education proposed the following recommendations to encourage education for sustainable development by DRR:

1. Motivate political commitment and strengthen legal frameworks: High-level advocacy to Ministers of Education on Education for DRR is urgently required, so that it is recognized as one of the key priorities on the national education agenda and that it thus benefits from increased resource mobilization.
2. Promote capacity building at all levels: In the field of DRR capacity building can include issues such as training, transfer of technology, application of traditional knowledge and know-how, as well as strengthening of institutional capacities at the community, national and regional level.
3. Clarify responsibilities and promote networking and exchange between stakeholders: Acknowledging the multi-disciplinary approach of education for DRR, institutional networks with clear responsibilities have to be set up to support networking and know-how transfer.
4. Develop effective education strategies to achieve quality education and learning: It is imperative to ensure that DRR education is rooted in existing learning theories and firmly embedded in education programmes at all levels.
5. Develop and apply minimum standards for safe and disaster-resistant schools and educational infrastructure: The safety of educational infrastructure needs to become a national priority. Older school buildings should benefit from effective retrofitting programmes.[28]

[25] UNCRD, 2008
[26] UNCRD, 2008
[27] Pandey, B.H. (n.d.)
[28] DKKV and UN/ISDR, 2009

In 2007 UNESCO and the ADPC published country reports on natural disaster preparedness and education as part of the "Educational Materials for Education for Natural Disaster Preparedness in Asia-Pacific in the Context of Education for Sustainable Development" project. Existing activities and materials in the following countries were analysed: Maldives, Thailand, Indonesia, India, and Bangladesh. The analysis highlighted the importance of the following issues:

- Collaboration and consultation: Collaboration and consultation are essential to correctly identify needs and gaps, learn about a community's preferred learning styles and develop ongoing support for their projects.
- Affected communities are keen to help: Natural disaster affected communities want to be involved in projects that will lessen the impact of future natural disasters. They must be viewed as a valuable resource rather than passive recipients of donor aid.
- Language barriers: It is important to use local languages effectively in order to deliver natural disaster preparedness messages. However in doing so, the universality of the project may be lost. A lack of natural disaster preparedness terminology in local languages inhibits effective communication.
- Culture and religion: Culture and religion require sensitivity in order to develop innovative approaches that can build upon local culture and religion and promote communication and understanding where certain cultural beliefs and practices may present obstacles to natural disaster preparedness.
- Government/programmatic support: It is important to develop sustainable, ongoing commitment to local stakeholder initiatives. This can be at the national or local government levels and can include policy, financial or coordination efforts.[29]

4.3. Islamabad Declaration and Action Plan 2008

The International Conference on School Safety was held from 14-16 May 2008 in Islamabad, Pakistan. The aim of the conference was to share lessons learned about issues related to school safety across the globe and to come up with recommendations for action at national and regional levels. Delegates to the conference adopted the Islamabad Declaration and Islamabad Action Plan.

The declaration outlines the role of governments, civil society and communities in promoting school safety while the action plan suggests strategic actions with regards to policy and institutional mechanisms, technical aspects, capacity development, integrating Disaster Risk Management (DRM) information in formal and informal education, community preparedness for disaster prevention and response, and public-private partnerships for safe schools.

Participants of the International Conference on School Safety in Islamabad declared that:

- The safety of our children is the goal of society and as such it is incumbent upon national governments to fulfil that obligation through comprehensive policies, programmes and financing mechanisms.
- School safety is an opportunity to establish innovative and effective partnerships between national government and state, local entities and community to ensure that school safety policy is implemented through priority actions.

- State governments can develop mechanisms, provide technical, financial and capacity support as needed to design and implement School Safety Action Plans. These plans can guide investments that address school vulnerabilities, structural and non-structural; and reflect priorities of local governments and communities.
- Resilient schools policy and practice needs to be linked to and incorporated in local development planning and future growth strategies. Schools are community assets and as such are tools for local governments to translate and implement locally appropriate action plans that apply to broader community applications of disaster management, planning, finance and safe construction.
- Schools are multi-functional assets for communities. Schools are places of learning, community activities and can be safe havens in times of disaster. Communities play a critical role as safe haven managers and first responders to disaster situations. Communities are thus necessary partners of the school planning and development process including site selection, improved local technologies and the application of community skills in the school development process.
- Civil society and private sector organizations are critical partners in school safety action plan implementation through their provision of technical and project management expertise and financial support to national and local governments, and community groups.[30]

4.4. Bangkok Action Agenda 2007

The goal of the Asia Pacific Regional Workshop on School Education and Disaster Risk Reduction, held in Bangkok from 8-10 October 2007, was to make a contribution toward reducing the vulnerability of school children to disasters and helping to decrease the loss of lives. It also aimed to improve resilience of school communities struck by disasters, or in hazard prone areas.

The workshop adopted the Bangkok Action Agenda as the regional blueprint to guide DRR implementation in the Asia Pacific region along four key priority areas of focus:

- Integration of DRR into school education: The Action Agenda stresses the importance of integrating and mainstreaming DRR into school curricula and into teacher education and training. It further highlights the need for broad stakeholder participation in the development of learning approaches and materials for both formal and non-formal DRR education and for children with various disabilities.
- Strengthening DRR education for community resilience: The Action Agenda calls to strengthen participatory mechanisms to involve communities in formal and non-formal disaster risk education, to take into account indigenous knowledge and to use socio-economic impact assessment to influence decision makers towards increased investments into disaster risk reduction education.

[29] UNESCO, 2007

[30] Islamabad Declaration on School Safety, 2008

- Making schools safer: The Action Agenda suggests updating minimum standards for the construction and operation of school buildings to incorporate disaster mitigation, to facilitate the development of tools and guidelines for safe construction considering sub-regional characteristics, and to use national budget and infrastructure protection resources to make schools safe, with no funding cuts from the education sector.
- Empowering children in DRR: The Action Agenda highlights the importance of developing child-led disaster risk reduction and response cadres in and out of school at the community level and of developing special outreach efforts to reach children with disabilities, their teachers and parents.[31]

4.5. World Disaster Reduction Campaign 2006-2007

As part of the implementation of the Hyogo Framework for Action and the UN Decade of Education for Sustainable Development, UN/ISDR in cooperation with UNESCO coordinated The World Disaster Reduction Campaign 2006-2007 with the central theme of "Disaster Risk Reduction Begins at School". The aim was to encourage the integration of disaster risk education in school curricula and the safe construction and retrofitting of school buildings to withstand natural hazards.

The importance of raising awareness within school communities, building a culture of prevention and making school buildings safer was stressed. Acknowledging that awareness can trigger interest, interest can lead to attention, and attention can prompt action, diverse ways to raise awareness among school students, teachers and their communities were promoted such as training of teachers, bringing DRR into the classroom, organizing disaster quiz competitions, school contests on DRR knowledge, campaigning for disaster safety, and turning school students into catalysts and initiators.[32]

The campaign further promoted DRR as ‘every one's business’ and a culture of disaster safety within society. Suggested ways to building a culture of safety in and through schools ranged from developing disaster education material, to mainstreaming DRR into school curricula or national education systems, and using alternative or innovative ways to educate children, youth, teachers and parents. A number of initiatives engaged children in on-the-ground activities such as assessing vulnerabilities, mapping hazards and risks, carrying out preparedness and making response plans, taking part in mock exercises and emergency drills, and helping communities prepare against and respond to disasters.[33]

The campaign also outlined the role of different key stakeholders in advancing DRR education at schools including among others governments, UN and other international organisations, donors and the private sector.

Governments are requested

- to commit to teacher training and curriculum development to support large-scale teaching of DRR and
- to review the safety of their schools and develop a comprehensive policy toward school safety by taking all locally relevant hazards into account and using location of schools, maintenance of buildings, design and construction methods as risk reduction tools.

UN and other international organisations are called upon

- to work with professionals, educators, communities, children and youth to develop a short list of "quick win" actions that can rapidly increase the safety of schools and raise risk awareness among all those concerned with schools,
- and to dynamize coalitions and partnerships, facilitate the creation of knowledge networks including South-South exchange, build capacity and guide others to existing resources for training.

Donors are asked

- to link DRR education issues to all MDGs not just the education MDG, and
- to select "fast track" countries that have considerable numbers of schools in dangerous locations or otherwise at risk and show the potential for rapid scaling up of school protection.

Private sector:

- Professional organizations, involved with schools and building, are requested to work with governments to establish and enforce strict building codes of conduct so that high standards are met in school construction and a new culture of respect for building codes of conduct within professional bodies is established.[34]

5. Status of disaster education

A stocktaking review by the OECD of selected country efforts[35] to raise public awareness and education of the impact of natural hazards and to enhance awareness and education regarding risk mitigation measures found that:

- Most countries have taken the approach of supplementing curriculum with regional and national co-curricular education developed by civil protection agencies or civic organizations, often in conjunction with wider public education campaigns. China, India, Mexico, New Zealand, and Turkey have co-curricular risk education in regional or national curriculum. Japan also has co-curricular risk education in some schools, though it has been removed from the national curriculum. In Mexico, environmental awareness, the interaction of humans and the environment, and disaster risk reduction and preparedness are taught in secondary school geography classes. As part of these studies, students participate in risk mitigation activities in their communities.

[31] Bangkok Action Agenda 2007

[32] UN/ISDR, 2007b

[33] UN/ISDR, 2007b

[34] UN/ISDR, n.d.

[35] The stocktaking was published in 2008 and covered the public, education, private and civic sectors of 13 selected OECD and emerging economy countries, i.e. Canada, Iceland, Italy, Japan, Mexico, New Zealand, Portugal, Spain, Turkey, United States, United Kingdom, and the two largest emerging economies outside the OECD, namely China and India.

- Some countries are currently considering adding risk awareness and risk reduction education into their educational mandates. In the United Kingdom, integration of hazard awareness and risk reduction is being discussed as part of a new citizenship curriculum. Segments of this citizenship curriculum may draw upon innovative risk awareness and reduction education in geography lessons developed by a secondary school teacher. These lessons ask students to learn about hazards in their neighbourhood, country of origin or holiday destination, create educational videos and help their families better prepare for natural hazard events. In other countries such as Canada, Italy, and the United States, teaching material for risk awareness and risk reduction education in the schools is implemented on a voluntary basis.[36]

The review further found that a key factor in the success of disaster education school programmes was the integration of student learning with community risk preparedness programmes through learning extensions at home and the encouragement of child-parent and teacher-parent communication. The integration had been achieved through community based projects such as community risk mapping, community-based fairs and exhibits, and publicized drills. Public risk awareness and risk reduction education are crucial in developing a consciousness about the need for school and community-based disaster management planning and in motivating citizens to participate in local and regional risk mitigation and planning.[37]

As part of the ENDP-ESD, UNESCO Bangkok coordinated with six countries in the Asia-Pacific in order to integrate education for natural disaster preparedness in school curricula, i.e. China, Japan, Philippines, Sri Lanka, Thailand and Vanuatu. It was found that each of the six countries had different priorities and were at different stages of ENDP integration.

- China has always attached great importance to disaster prevention and mitigation work and thus has sufficient educational materials on this topic. However, a majority of schools in China have not yet set up prevention and mitigation programmes and still lack quality disaster prevention and mitigation materials.
- Japan has the most successful education for natural disaster preparedness programmes in its schools.
- The Philippines is at the stage of recognizing and implementing policy to address the issues hindering ENDP.
- The significance of ENDP has only really come to light in Thailand after the 2004 tsunami. Therefore, Thailand is at a very early stage of ENDP implementation, starting in schools in the six coastal provinces affected by the tsunami.

Case studies of disaster risk education approaches in the different APEC member economies are provided in ANNEX 2.

6. Principles

"The brief outline of various approaches to integrating disaster risk awareness into school curricula has shown the multitude of pilot projects and programmes being implemented by different government, UN and development agencies. Various conferences were held at global, regional and national level in order to advance disaster risk education at schools but the shift from pilot activities to a consequent mainstreaming of disaster risk awareness at schools has yet to happen.

A preliminary list of principles is outlined below as a starting point for further discussion within the APEC community on a common approach towards integrating disaster risk awareness at schools.

Proposed Principles

1. Disaster risk education at schools should be embedded as a key pillar of broader public disaster risk education to enhance community resilience to disasters, gain support for school-led activities, and motivate citizens to participate in local and regional risk mitigation and planning.

2. Disaster risk education should be integrated into school curricula because children are among the most vulnerable during a disaster and they are very effective communicators and disseminators of disaster risk reduction and preparedness messages at the family and community level.

Education materials

3. Schools should teach about all stages of the disaster risk reduction cycle, therefore education materials should introduce students to disaster prevention, mitigation, preparedness, response as well as recovery.

4. Education materials should be linked to other relevant concepts related to disaster risk reduction such as land use planning, building codes, insurance and environmental stewardship.

5. Education materials should supplement a range of academic subjects, must be rooted in existing learning materials, must suit the local context, and should be culturally sensitive taking into account indigenous and traditional knowledge.

Pedagogy (teaching strategies)

6. Disaster risk education should be cemented through learning extensions at home and the encouragement of child-parent and teacher-parent communication and activities such as community risk mapping, community-based fairs and exhibits, and publicized drills.

7. Disaster education in schools must highlight the importance of child-led disaster risk reduction and response cadres in and out of school at the community level and of reaching out to children with disabilities, their teachers and parents.

[36] OECD, 2008

[37] OECD, 2008 and Dufty, 2009

Integration

8. Disaster risk education should be integrated into formal education at pre-primary, primary and secondary levels, as well as non-formal education and into teacher education and training.
9. The development and integration of disaster risk education into national curricula should be led by the Ministry of Education, involve national and local governments from various sectors and be based on a multi-stakeholder approach engaging the private sector, communities as well as UN, donor and development agencies. Disaster risk education at schools is a continuous process that requires a constant collaborative effort from all stakeholders. In this regard the APEC TFEP Emergency Management CEOS' Forum plays a crucial role in bringing together relevant stakeholders.
10. Integrating disaster education at schools must take into account the national education policy and the curriculum revision cycle so disaster risk awareness is introduced to the curriculum development board before or during the actual revision phase. Time is needed to develop and pilot the curriculum, train the teachers, and make budgetary arrangements. A disaster, while tragic, can be a useful trigger for changing education, research policies and practices.
11. Local community and civil society stakeholders must be involved in the development of disaster risk education materials for schools to help identify local risks and response measures. Often, the schools themselves form part of the response plan. Equally, disaster risk education policies should be taken into account in local development planning and future growth strategies.
12. To ensure the effectiveness of disaster risk education, regular monitoring and evaluation should be carried out. This could involve measuring the ability of students to cope with and learn from a disaster, and whether an emergency management plan has been prepared and maintained by a student's family.

Making schools safer

13. Resilience of school buildings must be ensured through adherence to building codes, land use planning, and emergency plans.
14. School buildings should be retrofitted to meet safety standards, train local builders, demonstrate safe technology and raise public awareness. Retrofitting should therefore happen in a participatory way engaging local communities, governments and resource institutions.
15. Students' hands-on exercises can help increase understanding of the importance of safe construction and the value of prevention and preparedness in reducing disaster losses.
16. Decision makers and engineers need to be brought together to effectively develop and mainstream building codes, safe technology and elements of accountability.
17. To improve school building safety a two-stage approach is required based on rapid vulnerability assessment and planned construction and retrofitting, with each phase having its own standards.

1. Motivate political commitment and strengthen legal support frameworks for the integration of disaster risk education at schools to move from pilot projects to the mainstreaming of disaster risk education at schools
2. Promote inter-sectoral and inter-institutional support for the integration of disaster risk reduction into school curricula
3. Link disaster risk education initiatives to national development planning
4. Develop and enforce minimum standards for disaster-resistant schools

Proposed recommendations for individual APEC member economies (as appropriate)

ANNEX 1: EXAMPLES OF DISASTER RISK AWARENESS MATERIALS IN APEC MEMBER ECONOMIES

Regional disaster education material

ACCU is a Japan-based non-profit organization which implements regional cooperative programmes in Asia-Pacific in the field of culture, education and personnel exchange in close collaboration with UNESCO and its member states. In 1997 ACCU launched a multi-media teaching-learning materials series called "PLANET" short for "Package Learning Materials On Environment" with the aim to provide environmental education materials for learners in non-formal and formal education in order to generate motivation for improving current environmental conditions and raising environmental awareness. To date the following titles have been produced: Water Pollution (PLANET 1), Forest Conservation (PLANET 2), and Waste Management (PLANET 3). A fourth title of the series is under production, i.e. Natural Disaster Preparedness (PLANET 4). The overall PLANET scheme is based on the following three stages:

- Production of a regional English prototype version: Prototype learning materials are produced in cooperation between ACCU and regional experts. These English versions of education materials are sought to serve as references for local material developers.
- Production of local versions: Regional prototype materials are to be modified to depict country-specific contexts. This goes beyond simply translating materials into local languages and involves an adaptation of the materials' format, presentation, illustration and contents to take into account local needs, culture and environment. This requires the collection and integration of baseline data and workshops with local experts.
- Dissemination and utilization of local versions: Delivery and utilization strategies need to be based on needs and impact assessments and be plotted well before delivering materials due to their limited number.

ACCU stresses the importance of integrating local knowledge and resources into the adaptation of local learning materials and of aligning these with international and national agendas such as the MDGs.

The main target audience of the PLANET series includes neo-literates, school children, and learners in environmental education programmes in Asia and the Pacific. The PLANET materials have been used in primary and secondary schools, in educating community leaders as well as by state broadcast channels.

Lessons learned and major challenges:

- One of the biggest challenges was attaining universality for the regional prototype materials as there is a great variety in the disaster experiences of countries in the region. As a consequence the regional prototype prioritised the following five major disasters: typhoons, tsunamis, earthquakes, forest fires, and landslides.

- Another challenge lied in the varied response activities required to meet different disasters and in different cultural contexts. Different responses are required for different disasters and the cultures that underlie societies and people's lifestyles influence these responses. ACCU is considering producing a set of separate fact sheets so that people can obtain additional information on the disasters of particular relevance to their region.[38]

Emergency management for schools in Australia

The Attorney-General's Department Emergency Management for Schools program aims to provide nationally consistent educational resources to schools and teachers available through the dedicated website www.ema.gov.au/schools.

Disaster lesson plans, resources and interactive teaching tools are provided for teachers and educators to help young Australians understand what to do if a disaster or emergency arises. Materials are provided for three main types of school disaster education programmes: interactive programmes presented by emergency management authorities, teaching/learning units and lessons, and extracurricular activities. A few Australian emergency management authorities use all three types of programmes in an integrated manner, thus maximising opportunities for effective impacts.

A few innovative approaches are briefly explained in the following:

"Dingo Creek - The Disaster" is an engaging, easy-to-use multimedia learning tool, with associated classroom activities and resources. It provides interactive and engaging content for students and teachers and is based on real life issues and problems that affect a community during a disaster. Aimed at school students from years 5 - 9, the game introduces the broader concepts of disaster risk management and minimisation.

A companion learning object "Dingo Creek - The Recovery" takes students into a post-disaster situation and guides them in rebuilding the community, in physical, environmental, economic and socio - psychological aspects. Students are asked to assess the effects of the disaster in all these areas and design recovery strategies.

The Dingo Creek series was developed by the Attorney General's Department for primary and secondary age (middle years 10-15 year old) students. The cross-curricula, cross year level learning object is built using Adobe Flash and is structured to use in the classroom, supported by associated offline activities.

Best practices:

- Unlike most other disaster education activities online, 'Dingo Creek' explores the all-hazards approach. It explains issues around emergency risk assessment, analysis and treatment and thus develops an understanding of how the emergency services across Australia work to protect communities and minimise risk.

[38] UNESCO, 2005

- The resources have been designed to be used flexibly so that the key messages of student empowerment, responsible and careful decision-making and positive actions within the local community can be applied in any area of school's curriculum across the middle years of schooling.[39]

The "Living with Disaster" digital stories series was developed after the extreme bushfires of February 2009. The series presents the personal experiences and reflections of young people from different communities that have experienced disasters and talks about the impact of those events on themselves, their families, schools and communities. Participants use their own photographs, music, videos and memorabilia to create short multimedia presentations through workshops facilitated by the Australian Centre for the moving Image (ACMI). Stories are presented as part of a teaching resource and are used as a base for discussion and classroom activities.

Best practices:

- By seeing, hearing and feeling the experiences of their peers students can more directly relate to the story and its message and better develop an understanding of the different impacts of disaster events.

"People Get Ready", a culturally inclusive emergency management resource for schools, it aims to enhance the understanding of students (years 8 -10) from culturally and linguistically diverse (CALD) backgrounds with regards to disaster prevention, preparedness, response and recovery.
A web-based toolkit supported by 9 lesson plans incorporates the wide range of different cultures and life experiences into teaching and learning. It can be applied across a number of cultural backgrounds and be adapted for specific cultural, language and religious contexts.
The toolkit encompasses:

- "Teaching in a culturally inclusive way": This section provides practical hints and tips for teachers.
- "About CALD students": This section highlights some of the experiences of students from culturally diverse backgrounds and how this might impact on the teaching of natural disasters and/or emergency management.
- "The importance of family": This section highlights the dynamics and some of the experiences of families from culturally diverse backgrounds.
- Comprehensive lesson plans on "Me and My Community", "Take the Communication Mission", "Experiences of Emergencies and Families Preparing Together".
- Curriculum links to state or territory curriculum framework for each lesson plan.

Best practices:

- Culturally sensitive disaster education materials do not only contribute to a better understanding of disaster issues by students but also improves the adoption of messages and behaviours taught as students can easier relate those to their own living environment and experiences.

Disaster risk education material in China

In China, nearly 500,000 textbooks on natural disasters and mitigation have been produced for elective high school geography courses, covering characteristics and impacts of natural hazards in China, hazard monitoring, mitigation, preparedness and disaster relief.

In 2004, the National Text-book Authorization Committee for Primary and Middle Schools of China approved a text-book for senior middle schools on natural hazards which was distributed widely across the China: by 2006, there was a copy on every senior middle school student's desk. The book offers a thorough introduction to natural hazards in the world, with a more detailed focus on China, and pays particular attention to preparedness and DRR. In addition it provides a list of Chinese web sites that students and teachers can consult, including a site maintained by the Chinese Science Museum.

The website of the virtual Earthquake Museum, for examples, features interactive games on earthquake response (Escape from an Earthquake in 10 seconds) and information on a range of topics including basic hazard awareness, Chinese seismographic history and earthquake risk management. The website is addressing both children and adults.[40]

[39] Materials explicitly link to the following school subjects: geography, personal development, health and physical education, science, technology, studies of society and environment, English/literacy, and personal learning

[40] OECD, 2009

ANNEX 2: ECONOMY CASE STUDIES ON DISASTER RISK AWARENESS

Japan: Guidance on School Retrofitting and Seismic Resistance

Mandatory risk education was removed from the national curriculum in 1951 due to concerns over declining achievement in other subjects. However, most schools have hazard drills and teach DRR in this context. A 2005 study showed that 80 percent of the high schools in five prefectures of Japan had participated in disaster education and a small percentage of schools in Japan have been recognized as pioneer schools in DRR education. Extensive materials for disaster awareness and risk reduction have been produced by municipalities, prefectures, engineering and scientific institutions and the General Insurance Association of Japan.[41]

A survey carried out by the Fire Protection Agency and the Cabinet Office of the Japanese Government in 2001 and 2002, however, showed that public facilities including school buildings were not satisfactorily earthquake resistant: seismic diagnosis was carried out on only 30 percent of buildings built under the pre-1981 Earthquake-Proof Standards and only about 45 percent of government primary and junior high school buildings had been retrofitted. In response to this "Guidelines for the Promotion of Earthquake-Resistant School Buildings" were published in July 2003 which describe the basic concept of earthquake-resistant school buildings and outline methods for devising earthquake-resistant promotion plans as well as for determining the urgency of earthquake resistance projects.[42] The basic principles outlined in the guidelines are as follows:

- Prioritize earthquake resistance measures for school buildings with high risk of collapse or severe damage
- Prompt the implementation of seismic resistance capacity evaluation and the development of a plan for promoting earthquake resistance
- Disclose the results of the seismic resistance capacity evaluation and of the plans for promoting earthquake resistance
- Check and take measures for the earthquake resistance of non-structural elements

Good practice examples:

- The guidelines took into consideration the crucial importance of competing priorities among public needs and therefore emphasized prioritization and urgency based on vulnerability assessment.

Lessons learned and major challenges:

- To implement projects related to earthquake resistant school buildings effectively, more attention needs to be paid to various issues such as selecting adequate construction methods for seismic reinforcement and methods for earthquake resistance improvements to non-structural elements, and adopting emergency reinforcement.
- Retrofitting vulnerable school buildings is costly and represents only one of many public needs. Therefore it is difficult to assign higher budgets to school buildings even in seismic areas where the occurrence of earthquakes is very likely.[43]

New Zealand: Mandatory National Curriculum

New Zealand has a mandatory curriculum for risk awareness and reduction which is one of the most extensive ones in the Asia-Pacific region. Civil defence and emergency service personnel, supported by teachers, are responsible for developing and delivering community safety programmes in primary and intermediate schools, while national level committees are responsible for their production. The 2006 “What’s the Plan Stan?”, which targets primary and intermediate school children, teaches risk awareness and risk reduction by highlighting the four Rs of emergency management: reduction, readiness, response and recovery. The initiative seeks to support teachers to develop the students' knowledge, skills and attitudes to respond to and prepare for an emergency. In addition to curriculum resources, the initiative also provides simulation and practice activities, disaster activities and fact sheets, and a list of references and templates to be used by the teacher. The program increases its impact by encouraging students to talk with their parents about natural hazard risks and preparedness.[44]

A study of children’s natural hazard risk perceptions, levels of preparedness and participation in education programmes in Christchurch was published in 2004 for which 102 participating students from Cobham Intermediate School from the age of 10 to 12 years were surveyed. The study showed that

- The children’s awareness of hazards impacting Christchurch was fairly accurate; however, the awareness of the risk from storms with heavy snow falls and tsunami was very poor.
- Overall the surveyed children had a good knowledge of safety behaviour with some vital safety behaviours better known by the children than other safety behaviour.
- A significant majority of the children have participated in a hazard education school programme conducted by Civil Defence personnel.
- Preparedness plans and practices were reported to be poorly adopted by the children’s household: torches, first aid kits and smoke detectors were the principal preparedness measures adopted by the children’s families while only less than one fifth of children have an emergency kit prepared. Only emergency practices at school had a majority of children participating.[45]

Lessons learned:

- Continuing hazards education is necessary in order to increase understanding of the hazard types and impacts communities could face and to improve household preparation.
- An emergency management focused programme that emphasises children’s interactions with their parents can increase home preparedness, e.g. providing children with homework to fill out a home preparedness checklist might be one avenue to translate increased knowledge into useful actions.

41 OECD, 2008
42 UN/ISDR, 2007b
43 UN/ISDR, 2007b
44 OECD, 2008 and RCC, 2008
45 Finnis et al., 2004

The Philippines: MDRD-Education

In 2005 the Regional Consultative Committee on Disaster Management (RCC) adopted the Hanoi RCC 5 statement on "Mainstreaming Disaster Risk Reduction into Development in Asian Countries", which prioritizes mainstreaming of DRR in the national development planning process as well as in six sectors, (i.e. agriculture, urban planning and infrastructure, education, health, housing and financial services). Within the education sector, the statement identified the following sub-themes to initiate mainstreaming of DRR:

- Integrating DRR modules into school curriculum
- Promoting hazard resilient construction of new schools
- Introducing features into schools for their use as emergency shelters

With the aim to mainstream DRR in the education sector ADPC, UNDP and ECHO initiated the project "Support to Implementation of Hyogo Framework for Action (HFA) through Mainstreaming of Disaster Risk Reduction into Development Planning, Policy and Implementation in Asia: Advocacy and Pilot Implementation Project in Education Sector in 3 South East Asian RCC member countries (Cambodia, Lao PDR and the Philippines)" project (hereinafter referred to as MDRD-Education project).

In its Phase I (2007-2008) the MDRD-Education project formed a Technical Working Group with representatives from the Department of Education, National Disaster Coordinating Council, National Economic Development Authority and Department of Finance. This Technical Working Group spearheaded the implementation of the project and undertook the following activities:

1. Initiating the mainstreaming of DRR into secondary school curriculum
2. Studying the impacts of disasters on the education sector to develop an evidence-based rationale for mainstreaming DRR into the education sector
3. Conducting an advocacy workshop on mainstreaming DRR into the education sector
4. Stakeholder consultation as follow up to the advocacy workshop

As a result of the first project phase the mainstreaming of DRR in the three project countries was advanced, networking among DRR practitioners strengthened and government commitment in making communities safer and upholding government responsibility to ensure public safety enhanced.

In the particular case of the Philippines the project achieved the following

- A specific DRR curriculum was developed which includes a chapter on volcanic eruptions, a hazard very specific to the Philippines.
- The curriculum has been integrated into the science and social sciences subjects of Grade 7.
- The Ministry of Education has endorsed the DRR module and the Philippine government has integrated DRR in the education sector into the Strategic National Action Plan (SNAP).[46]
- Authorities have expressed their commitment to elaborate or review the existing building codes and construction guidelines for school buildings.

Starting from October 2007, the DRR module was taught at three private and three public schools

in three provinces, i.e. St. Bernard, Tabaco, and Basilan. Before this, 74 teachers and 24 officials were trained on the DRR module, lessons plan, and teaching techniques. A group of curriculum specialists[47] monitored the teaching of the DRR module in classrooms in December 2007 and January 2008 and based on their comments some lesson plans were revised.

In order to evaluate the teaching and the effectiveness of the module the ADPC initiated a School Safety Day which included activities such as hazard hunt, poster painting competition, and a quiz in the schools. The School Safety Day was held from January to February 2008 and also engaged students from other classes. 15 outstanding students from two pilot schools had a poster painting competition and were evaluated during the National Advocacy Workshop.

A survey of the impact of disasters on the education sector in the Philippines was conducted and showed that in order to improve the resilience of school constructions improvements were required in the following areas: fire prevention and safety, road safety, proper use of chemicals and gases in the science laboratories, location and environment of the school, and accessibility of school buildings.

A National Advocacy Workshops was conducted at the end of the first project phase on 31 March 2008 in Manila with the aim to showcase results of the MDRD Education project, to gather recommendations from the workshop participants on next steps, and to arrive at an endorsement by the Government of the Philippines of future programmatic activities for the integration of DRR in the education sector. Participants of the workshop included representatives from the government, NGOs, and from international donor and UN bodies.

Building upon the lessons learned from Phase I the ongoing Phase II of the PIP (September 2008-December 2009) aims to:

- forward the integration of DRR into school curricula in every country by:
    - Expanding the Technical Working Group and engaging with the Education Sector Working Group,
    - Institutionalising DRR modules in the national curricula and in the teachers training system (this includes the development of teaching aids for the delivery of the modules developed in phase I),
    - Reviewing existing national curricula in order to develop a Curriculum Plan for integrating DRR from primary to secondary level,
- Integrating hazard resilient features in school construction by reviewing, enhancing and developing school construction guidelines and promoting the application of these guidelines in ongoing school construction projects/programs supported by multilateral and bilateral agencies in the project countries.

[46] The "Strategic National Action Plan 2009-2015: Strengthening Disaster Risk Reduction in the Philippines"

[47] Specialists from the Ministry of Education, the National Disaster Coordinating Council focal point, project working group members and school principals/school directors from the three project countries.

Best practice examples:

- Development and testing of economy-specific DRR modules and research on the impact of disasters in the education sector
- Development of the curriculum module based on multi-department consultation under leadership of the Department of Education (e.g. Office of the Civil Defence, Department of Environment and Natural Resources, Department of Energy, Philippines National Red Cross and Philippines National Police)
- National advocacy workshops to demonstrate and discuss the findings of disaster impact studies and school pilot activities with key stakeholders

Lessons learned and challenges:

- Efforts to integrate DRR in the curriculum must not only be piloted but mainstreamed at the national level.
- The integration of DRR in education should be both in the formal, as well as non-formal education, including adult education for different vulnerable groups such as people with physical, mental and emotional disabilities, the elderly, and those in occupational risks.
- The education has to include modules in caring for the caregivers such as teachers and disaster workers who could be both a victim and a service provider. Training in psycho-social intervention is also needed.
- DRR has to be incorporated as a subject in the tertiary education of teachers in colleges and universities to develop teachers' capability in handling DRR in teaching.
- The existing institutional set up of the DepEd for DRR has to be strengthened by developing the capacity and mobilizing the people who are supposed to play their roles and responsibilities. There has to be warm bodies of second liners who shall continue the work in DRR within DepEd to ensure that the experiences and the capabilities are institutionalized, and not dependent on a few individuals to whom the responsibilities are bestowed upon.
- Disaster damages, losses and impact have to be monitored and documented at the school level and transmitted to the higher level in the DepEd echelon to gather education sector-specific and relevant information.
- Significant resources need to be allocated for a successful mainstreaming of DRR in the education sector. In order to gain access to resources and capacity building linkages between different sector and different stakeholders need to be strengthened. As the focal agency for education, the Department of Education has to show greater leadership in maximising the potentials of collaborative work.
- Mainstreaming of DRR in the education sector needs to be supported by appropriate legislation at the national and local government units. The Department of Education plays a key role in advocating for DRR legislation.
- NGOs and the local communities have to be involved in the school construction, monitoring, repair and rehabilitation to ensure that there is ready and available local resources that can respond to immediate concerns.[48]

UNICEF Philippines: Building Safe Learning Environment for Children (BSLE)

The BSLE project is a pilot project of UNICEF Philippines which was initiated after the devastating 2006 typhoons. The purpose was to pilot UNICEF's engagement in large-scale construction work as part of its humanitarian intervention. The project is being coordinated and managed by UNICEF, in partnership with the Department of Education, Department of Social Welfare and Development and concerned local government units. The project aims i) to improve the teaching-learning environment of pre-school and school-age children, day care workers and teachers and ii) to enhance their capacity for emergency preparedness and disaster risk management.

It comprises two project components: the Safe Schools sub-project and the Emergency Support for Day Care Centers sub-project. The main feature of BSLE Project is the structural component or construction and rehabilitation work for damaged day care centers and schools combined with non- structural components. The first covers the service delivery aspect of the project while the latter encompasses policy as advocacy, social mobilization of school-community stakeholders, participation and capacity building of school children and teachers, technical assistance and monitoring and evaluation.

The project covers four city school divisions and six provincial school divisions and two regional office- Southern Tagalog and Bicol Regions. To date, the project has contributed to the following:

1. Policy Advocacy and Social Mobilization:

- Provided technical assistance to the Department of Education in developing its DRR Resource Manual which will serve as a guide for teachers and school heads on DRR concepts and strategies.

2. Service Delivery:

- Enhanced building and construction resilience at 18 school sites and provided basic school supplies in 29 recipient primary schools and to 780 teachers in the targeted elementary and secondary schools
- Enhanced the library collection and learning materials of 59 primary schools,

3. Project coordination, monitoring and evaluation:

- Broadened multi-stakeholders participation (governments at different levels, NGOs, donors, private sector) and facilitated the sharing of lessons learned

[48] Center for Disaster Preparedness, 2008

- Enhanced the quality of classroom repair and construction by maintaining close partnership with the Department of Education and engaging the services of an independent engineering firm to strengthen quality assurance monitoring
- Strengthened the lead cluster role of the Department of Education and coordination among the education cluster members.

Best practices:

- School principals or school heads take charge of the implementation and management of the repair work and/or construction with the assistance of a project engineer. This approach has not only ensured successful and timely project completion but also empowered school communities to manage and eventually own and sustain projects.[49]

United States: American Red Cross' Masters of Disaster® series

The American Red Cross' Masters of Disaster® series is an educational tool which teaches children how to prevent, prepare for and respond to disasters and other emergencies. The Masters of Disaster curriculum materials meet national educational standards tailored for lower elementary (K–2), upper elementary (3–5), middle school (6–8) classes, and high school (9–12). This also allows for easy adaptation for preschool or students with special needs.

Customized formats for both families and educators are available which help for example teachers to meet their required curriculum objectives while teaching disaster risk awareness and management. The Masters of Disaster curriculum intends to support teachers to integrate important disaster safety instruction into their regular core subjects such as language, arts, math, science, and social studies.[50] By 2008, approximately half of the 756 local Red Cross chapters had implemented this program in schools within their community, reaching 5.2 million children in six years. As risk awareness and reduction education is not mandatory the use of this material varies widely.[51]

Good practice examples:

- The curriculum supplements core academic subjects rather than providing additional material.
- The Masters of Disaster Curriculum Kit contains ready-to-go lesson plans, activities, and demonstrations on disaster-related topics that teachers can incorporate within core subject areas.
- Designed for flexibility, materials/activities are non-sequential and teachers can integrate specific hazard-related modules into the core academic subjects.
- Step-by-step lesson plans and easy-to-follow directions enable the activities to fit a variety of time frames and learning environments.
- Cross-curricular activities tie key concepts within the lesson plan to a broad range of curriculum topics and can be used as reinforcement, enrichment or stand-alone assignments.

Viet Nam: Disaster Preparedness Education at primary schools

The Viet Nam Red Cross Society (VNRC) has put an emphasis on disaster preparedness activities since late 1990s. In 2001, it implemented a programme called "Introducing Disaster Preparedness in Primary Schools". The Programme's activities have been replicated since then and are under way in all 21 of the most disaster-prone provinces in Viet Nam, aiming to reduce disaster risk among school-going children who are among the most vulnerable to disasters. The 12-month programme had the following specific objectives:

- Developing disaster needs assessment material and training national and provincial trainers and district and commune personnel in some 30 communes in a 12-month period
- Developing commune-level disaster preparedness material and training Community Development Boards in some 30 communes in a 12-month period
- Developing disaster preparedness material for Grade 4 and 5 school children and training trainers, school teachers and children in some 210 communes in a 12-month period

Targeted beneficiaries were teachers and children as well as VNRC staff and government personnel. Recipient schools in disaster-prone areas organized inter-provincial competitions including drama, quizzes and painting competitions built around a disaster preparedness booklet and disaster preparedness teaching.

The programme developed a new package of disaster preparedness training material for Red Cross personnel, community leaders, teachers and children. The training package was made available with the help of the Viet Nam Red Cross Society and relevant stakeholders. It is currently used by international NGOs in Viet Nam. The programme further helped envision the integration of disaster preparedness education into school curricula in Viet Nam. The Viet Nam's current strategy for flood and storm control – that is valid until 2020 – requests the Ministry of Education to include disaster preparedness education in school curricula by 2010.

The Viet Nam Red Cross Society intends to continue providing disaster preparedness training until 2010 to teachers and children in eight coastal provinces in northern Viet Nam (from Quang Ninh to Ha Tinh Province), with financial support from the Japanese Red Cross.

An external evaluation of the project showed that, one or two years after the lessons, school children might not remember all the definitions, technical terms and types of natural hazards but a majority still remember how to react when a disaster strikes (30-40 percent when interviewed individually and about 80 percent when talking to their peers).

[49] Center for Disaster Preparedness, 2008

[50] http://www.redcross.org/portal/site/en/menuitem.d8aaecf214c576bf971e4cfe43181aa0/?vgnextoid=14c70c45f663b110VgnVCM10000089f0870aRCRD&vgnextfmt=default

[51] OECD, 2008

Good practice examples:

- A participatory training method was promoted and used with audio and visual facilities
- Economy-wide replication of the programme with long-term support from the Vietnamese government and from donors

Success factors:

- Active participation of relevant stakeholders, including teachers and children, in writing and finalizing the training and learning material
- Replacing the lecturing method with the facilitating method which enabled the children to participate in discussions
- Building strong cooperation and consultation among diverse stakeholders

Major challenges and lessons learned:

- The Programme faced a major challenge in trying to integrate a disaster preparedness component into the official training curriculum without overburdening school children. This challenge has not yet been overcome.[52]

[52] UN/ISDR, 2007b

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Disaster Damage and Loss Assessment- Principles

The Asia-Pacific region is home to 70 percent of the world's disasters, and the intensity and frequency of disasters in the region is expected to continue to increase. Efforts to enhance damage and loss assessment methodologies and measurement have been made by UNISDR. Despite these efforts not enough is known about the full economic and social impact of disasters and addressing this task remains a challenge for the region.

For the purposes of this document, damage and loss assessment includes the quantification of direct, indirect, economic, social and psychological damage incurred by a disaster.

Proposed Principles

1. Disaster damage and loss assessments must be credible, meaningful and holistic to secure the commitment and resources of governments and civil society in the disaster recovery phase, and importantly, to build community and business resilience and reduce the risk of potential disasters in the affected area and throughout the wider economy.

2. APEC economies should work towards harmonising damage and loss assessment techniques in the region to allow the compilation of credible region-wide data to help build regional support and consensus for disaster risk reduction policies and initiatives, and to ensure region-wide resilience.

3. Economic damage assessments should be consistent and transparent, and based on primarily economic principles and robust evidence.

4. The damage, loss and needs assessment processes should be integrated, and prioritized, address all hazards, and accommodate the need for, and different objectives of, a rapid assessment, early recovery assessment and an in-depth assessment for longer-term rehabilitation, reconstruction and recovery.

5. To be comprehensive, in addition to direct damage and indirect losses, the damage and loss assessment methodology should allow for an estimation of macro-economic impacts (eg. national income, government debt, trade deficit, development prospects) and, to the greatest extent possible, intangible impacts (eg. social, psychological, environmental, loss of life).

6. The human dimensions of disaster should be a key consideration in damage and loss assessment, including the impact on vulnerable groups.

7. When assessing needs, the longer-term recovery phase should be viewed as an opportunity to boost and accelerate development and economic growth, and to mainstream disaster risk reduction initiatives – to build communities with greater prosperity, resilience and preparedness than before the disaster.

8. Assessors and planners should look beyond short-term emergency needs and consider broader long-term needs for sustainable development, including climate change adaptation needs.

9. Disaster damage and loss assessment should be coordinated by one government agency, involve multi stakeholders, and include relevant government agencies from appropriate levels, be that local, regional or national.

10. Local community stakeholders must be involved and surveyed in every stage of the process to ensure a realistic picture of damage, loss and reconstruction and rehabilitation needs, as well as to identify the capacity of the affected community.

11. To be meaningful, damage and loss assessments must have relevance and applicability to the jurisdiction of the decision-makers – whether national, sub-national or local – and whether public, private or civil sector.

Proposed recommendations for individual APEC member economies (as appropriate)

1. Agree on easily understood assessment terminology, standards, procedures and arrangements to allow comparable results; and train and exercise regularly a sufficient pool of assessors to use the standardized system.

2. Put arrangements in place ahead of the disaster so baseline and post-disaster data (including gender-segregated data and imaging), as well as data collection procedures and standards, can be accessed and employed quickly by the assessors.

3. Review damage and loss assessment methodologies with a view to allowing an estimation for, and consideration of:

    a. cross-sectoral effects, including the impacts on the environment, land-use, infrastructure, employment, and livelihoods

    b. social and psychological impacts, including on culture and values

    c. disproportionate effects on vulnerable groups, including women, children, the elderly, ill and disabled

    d. resources available to survivors such as savings, insurance and volunteers.

4. Re-evaluate assessments regularly to ascertain needs and priorities, as well as to assess the effectiveness and appropriateness of responses, and to identify lessons learned.

5. Recognising the importance of continuous learning and sharing data, experiences and lessons learnt in damage assessments to build consensus and support for disaster risk reduction, and to strengthen assessment methodologies, knowledge and information management.

Emergency Management Volunteers- Paper for consideration

Background

Australia is a nation prone to a range of natural hazards and emergencies. These include fire, flood, severe storm, cyclone, tsunami, earthquake and others.

Volunteers are a vital and significant component of Australia's emergency management sector. Some 500,000 people of the total 20 million population in Australia volunteer their services in some emergency management capacity on an annual basis.

Some 350,000 of those are directly involved in emergency first response. First responders include the various rural fire services, the State Emergency Services (SES) and volunteer ambulance services.

And the employers who support those emergency management volunteers that are full-time workers, to leave work and volunteer in times of emergency or disaster, are also much valued.

Support for Emergency Management Volunteers

The Australian Government supports and encourages the emergency management volunteer sector, including the employers of the volunteers – refer attached summary.

Challenges Ahead

There is growing evidence that the changing nature of volunteering in the emergency management sector and an increasing number of external pressures are affecting the capacity to attract and retain such volunteers, and for employers to support the volunteers. The attributed factors relate to economic and demographic changes, such as the changing nature of Australian industry and an ageing population profile for Australian rural communities. This is occurring at a time when disaster events appear to becoming more frequent and more severe, possibly related to Climate Change factors.

Discussion Point

Australia would be interested in the experiences of other APEC member economies in terms of harnessing, attracting and retaining emergency management volunteers. If member economies were interested, Australia would be happy to share its experiences and challenges in greater detail.

Options

If there was interest in exploring the issue further:

1. CEOs could agree to discuss the matter further at the 2010 APEC Emergency Management CEOs Forum; and/or
2. The TFEP could be encouraged to hold a workshop on emergency management volunteers in 2010 or 2011, possibly leading to the development of APEC principles on emergency management volunteers.

Summary Of Current Australian Government Initiatives For Emergency Management Volunteers Appendix to Attachment D

Support for Emergency Management Volunteers

The Australian Government supports and encourages the emergency management volunteer sector.

Within the Attorney-General's Department key aspects of this assistance include:

1. Support for the Australian Emergency Management Volunteer Forum – the Forum is a peak advocacy body, which aims to attract, retain and recognise volunteers. Some of the key issues currently before the Forum are:
    - The cost of being a volunteer
    - Proposals for volunteer leadership training
    - Improved links to 'culturally diverse' groups in the community
    - Greater support and recognition for employers
2. The Australian Government provides funds for a National Emergency Volunteer Support Fund. The money is made available in grants for projects which are aimed at boosting the recruitment, retention, skills and training of volunteers. These projects range from the purchase of audio-visual training equipment and enhancing the quality of training provided to volunteers, to recruitment campaigns, targeted volunteer training activities, and the construction and fit-out of dedicated training facilities.

Furthermore, other Australian Government Departments and also the State and Territory Governments also provide support for emergency management volunteers, within a broader context of a rich tradition of community volunteering that involves most of the Australian population.

Looking ahead, the Ministerial Council for Police and Emergency Management, which is responsible for providing national leadership and strategic direction on emergency management in Australia, has agreed that firm action is required to ensure the future sustainability of Australia's emergency management volunteers. A broad range of options for the attraction, support and retention of emergency management volunteers is currently being developed for consideration by the Council in November 2009.

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