



SEAMEO
INNNOTECH



TOOLKIT FOR

Building Disaster-Resilient School Communities

IN SOUTHEAST ASIA



TOOLKIT FOR BUILDING DISASTER-RESILIENT SCHOOL COMMUNITIES IN SOUTHEAST ASIA

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ISBN: 978-971-0487-85-1 (Print)

ISBN: 978-971-0487-86-8 (e-Book)

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Published by SEAMEO INNOTECH

www.seameo-innotech.org

Printed in the Philippines

First printing, 2014

FOREWORD



Education for sustainable development (ESD) is one of the central themes of SEAMEO INNOTECH's 8th Five-Year Development Plan. As a concrete contribution to this broad theme, the Center embarked on developing a regional toolkit that focuses on more specific sub-themes: education in emergencies (EiE) and disaster risk reduction and management (DRRM).

EiE and DRRM are two of the main pillars of ESD contributing to the goal of creating resilient and sustainable school communities. UNESCO describes the strategic role of education for disaster reduction as addressing three key activity areas:

1. saving lives and preventing injuries should a hazardous event occur;
2. preventing interruptions to the provision of education, or to ensure its swift resumption in the event of an interruption; and
3. developing a resilient population that is able to reduce the economic, social and cultural impacts should a hazardous event occur.

The TOOLKIT FOR BUILDING DISASTER-RESILIENT SCHOOL COMMUNITIES IN SOUTHEAST ASIA is a modest attempt of the Center to collate several existing planning tools, personal disaster-related experiences and stories, reference materials, and school-based DRRM innovations and good practices revolving around internationally-recognized frameworks as a contribution in strengthening the education sector as a strategic partner in building disaster-resilient school communities.

SEAMEO INNOTECH hopes that the readers will be able to take stock of the wealth of materials found in this Toolkit thus equipping themselves with appropriate knowledge, skills, and tools to be able to effectively prepare for and respond to disaster-related crises as a result of climate change and competing development priorities in Southeast Asia.

RAMON C. BACANI
Center Director



Acknowledgements

Our deepest gratitude goes to the Ministries of Education (MOEs) of 11 SEAMEO Member Countries for supporting education in emergencies (EiE) and disaster risk reduction and management (DRRM) as important pillars under the broader theme of education for sustainable development (ESD). Special thanks is also accorded to the MOEs for serving as key informants and for guiding and assisting the research team in developing this toolkit.

The Center would also like to express its sincere thanks to the SEAMEO Secretariat Office in Bangkok, Thailand for allowing us to benefit from the results of the SEAMEO-Japan ESD Award, particularly the “Best Practices: 2012 SEAMEO-Japan ESD Award on Education for Disaster Risk Reduction.”

We greatly appreciate all partner institutions who generously gave their permission for us to include their DRRM resource materials as an integral part of this toolkit.

Gratitude goes to Dr. Luz Escubil for accepting the challenge of weaving together the substantial amount of collected materials into one meaningful toolkit. Special thanks also goes to Dr. Edwin Philip Horca of Save the Children for providing his expertise and technical guidance in making the Toolkit more relevant and user-friendly.

This toolkit was prepared under the general guidance of SEAMEO INNOTECH Center Director Ramon C. Bacani, and Educational Research and Innovation Office Manager Philip J. Purnell. Led by Senior Specialist Yolanda C. De Las Alas, the research team include Lauren Nerisse S. Bautista, Senior Associate, Rhio C. Dilag, Program Assistant, and Mars Balisacan, Project Assistant.

We would also like to acknowledge the support of Saira Ferrer and Albert Banico for assisting the research team particularly during the data collection phase. Gratitude is also extended to Jasper Peteza for the graphics and layout design, and Evelyn Juan for copy editing the Toolkit.

Finally, the Center significantly recognizes the contribution of all school heads, teachers, students, parents, and other community members who generously shared their personal stories, experiences, challenges, joys and achievements in relation to DRRM.

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Acronyms and Abbreviations

AADMER	ASEAN Agreement for Disaster Management and Emergency Relief
ACDM	ASEAN's Committee on Disaster Management
ADDM	ASEAN Day of Disaster Management
ADM	Alternative Delivery Mode
ADP	Area Development Plan
ADPC	Asian Disaster Preparedness Center
ADRC	Asian Disaster Reduction Center
AEGDM	ASEAN Experts Group on Disaster Management
AHA Centre	ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management
AIDS	Acquired Immunodeficiency Syndrome
ALS	Alternative Learning System
ALS-A&E	Alternative Learning System- Accreditation and Equivalency
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
ASSI	ASEAN Safe Schools Initiative
ATWGPPR	ASEAN Technical Working Group on Pandemic Preparedness and Response
AusAID	Australian Agency for International Development
AWE	Animal Welfare Education
AWP	AADMER Work Programme
BALS	Bureau of Alternative Learning System (Philippines)
BDRPMC	Barangay Disaster Risk Reduction and Management Council
BERT	Bulilit Emergency Response Teams (Philippines)
BFP	Bureau of Fire Protection
BMA	Bangkok Metropolitan Authorities (Thailand)
BMT	Basic Mission Training
BNPB	National Disaster Management Agency (Badan Nasional Penanggulangan Bencana, Indonesia)
BSLE	Building Safe Learning Environment
CAR	Cordillera Administrative Region (Philippines)
CARAGA	An administrative region in the northeastern portion of Mindanao consisting of Agusan del Norte, Agusan del Sur, Surigao del Norte, Surigao del Sur and Dinagat Islands (Philippines)

CBDRM	Community-Based Disaster Risk Management
CBDRR	Community-Based Disaster Risk Reduction
CC	Climate Change
CCA	Climate Change Adaptation
CCP	Curriculum Continuity Plan
CCSFC	Central Committee of Storm and Flood Control (Vietnam)
CDRC	Citizen's Disaster Response Center (Philippines)
CEA	Civilian Emergency Administration
CEPP	Community Emergency Preparedness Program
CF DRR	Child-Focused Disaster Risk Reduction
CFS	Child-Friendly School
CLDRR	Child-Led Disaster Risk Reduction
CME	Civics and Moral Education
COMSCA	Community Managed Savings and Credit Association
CRED	Center for Research on the Epidemiology of Disaster
CSOs	Civil Society Organizations
CSR	Corporate Social Responsibility
DA	Department of Agriculture (Philippines)
DANIDA	Danish International Development Agency
DAPS	Disaster Awareness in Primary Schools
DDPM	Department of Disaster Prevention and Mitigation (Thailand)
DepEd	Department of Education (Philippines)
DEPT	Department of Education Planning and Training (Myanmar)
DiBi	Data and Information on Indonesia Disaster
DMO	Disaster Management Order (Brunei Darussalam)
DOH	Department of Health (Philippines)
DORS	Disease Outbreak Response System (Singapore)
DPMA	Disaster Prevention and Mitigation Academy
DPRE	Disaster Preparedness and Response Education
DRAPEES	Disaster Risk Reduction, Preparedness and Education in Emergencies System
DRR	Disaster Risk Reduction
DRM	Disaster Risk Management
DRRM	Disaster Risk Reduction and Management
DRRMO	Disaster Risk Reduction and Management Office (Philippines)
DSWD	Department of Social Welfare and Development (Philippines)



e-IMPACT	Enhanced Instructional Management by Parents, Community and Teachers
ECHO	European Commission on Humanitarian Aid
ECM	Evacuation Center Management (Philippines)
EDP	Education Development Plan
EEPSEA	Economy and Environment Program for Southeast Asia
EFA	Education for All
EIA	Environmental Impact Assessment
EiE	Education in Emergencies
EP	Emergency Preparedness
ERT	Emergency Response Team
ETWG	Education Technical Working Group
ESD	Education for Sustainable Development
ESP	Education Strategic Plan
FAO	Food and Agriculture Organization
FCAW	First Concepts in Animal Welfare Programme
FLAS	Fixed-Line Disaster Alert System
FLO	Flexible Learning Options
GDP	Gross Domestic Product
GIRN	Government Integrated Radio Network (Malaysia)
GIZ	German Agency for International Cooperation (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH)
Hazmat	Hazardous materials
HBC	Human Behavior Change
HBL	Home-Based Learning (Singapore)
HFA	Hyogo Framework for Action
HIV	Human Immunodeficiency Virus
HN DoET	Hanoi Department of Education and Training
HQ	Head Quarters
HQO	Home Quarantine Order (Singapore)
HVCA	Hazard Vulnerability and Capacity Assessment (Cambodia)
IASC	Inter-Agency Standing Committee
ICS	Incident Command System
ICT	Information and Communication Technology
IDDRR	International Day for Disaster Risk Reduction
IDP	Internally Displaced Population



IFRC	International Federation of Red Cross
ILO	International Labor Organization
IMS	Incident Management System (Singapore)
INEE	International Network for Education in Emergencies
INEE MSE	INEE Minimum Standards for Education
INGOs	International Non-Government Organizations
INSARAG	International Search and Rescue Advisory Group
IOM	International Organization for Migration
IT	Information Technology
JICA	Japan International Cooperation Agency
KIDA	Knowledge, Interests, Desire, Action (Myanmar)
LAPUS Bldg.	Learning and Public Use School Building
LCC	Local Content Curriculum (Indonesia)
LDMA	Local Disaster Management Agencies
LDRRMF	Local Disaster Risk Reduction Management Fund
LDRRMO	Local Disaster Risk Reduction and Management Office
LEGS	Livestock Emergency Guidelines and Standards
LGUs	Local Government Units
LIZOP	Learning Institutions as Zones of Peace
LOA	Leave of Absence
LRT	Light Rail Transit
MAPDRR	Myanmar Action Plan on Disaster Risk Reduction
MDRD EDU	Mainstreaming Disaster Risk Reduction in Education
MDRRMC	Municipal Disaster Risk Reduction and Management Council (Philippines)
MERP	Myanmar Education Recovery Program
MERS	Malaysia Emergency Response System
MHA	Ministry of Home Affairs (Singapore)
MISOSA	Modified In-School Off-School Approach
MKRC	Mobile Knowledge Resource Center
MMEIRS	Metro Manila Earthquake Impact Reduction Study (Philippines)
MNLF	Moro National Liberation Front
MOE	Ministry of Education
MOET	Ministry of Education and Training (Vietnam)
MOEYS	Ministry of Education Youth and Sport (Cambodia)
MOH	Ministry of Health
MOU	Memorandum of Understanding

MRT	Mass Rail Transit
MSWDO	Municipal Social Welfare and Development Office (Philippines)
MWSS	Metropolitan Waterworks and Sewerage System (Philippines)
NAHICO	National Avian and Human Influenza Coordination Office (Lao PDR)
NAP-DRR	National Action Plan for Disaster Risk Reduction (Indonesia)
NCDCC	National Civil Defense Cadet Corps (Singapore)
NCDM	National Committee for Disaster Management (Cambodia)
NDC	National Disaster Council (Brunei Darussalam)
NDCC	National Disaster Coordinating Council
NDCM	National Disaster Consciousness Month
NDMC	National Disaster Management Centre (Brunei Darussalam)
NDMC	National Disaster Management Committee (Lao PDR)
NDMD	National Disaster Management Department (Timor-Leste)
NDMO	National Disaster Management Office (Lao PDR)
NDPCC	National Disaster Prevention and Control Committee (Lao PDR, Myanmar)
NDPMC	National Disaster Prevention and Mitigation Committee
NDRRMC	National Disaster Risk Reduction and Management Council (Philippines)
NDRRMF	National Disaster Risk Reduction and Management Framework
NDRRMP	National Disaster Risk Reduction and Management Plan
NDWC	National Disaster Warning Center (Thailand)
NEA	National Environment Agency (Singapore)
NEMP	National Emergency Management Policy (Cambodia)
NGOs	Non-Government Organizations
NIPPC	National Influenza Pandemic Planning Committee (Malaysia)
NOAH	Nationwide Operational Assessment of Hazards
NRIES	National Research Institute for Educational Sciences
NSC	National Security Council (Malaysia)
OBEC	Office of Basic Education Commission (Thailand)
OCD	Office of Civil Defense (Philippines)
PAGASA	Philippine Atmospheric, Geophysical and Astronomical Services Administration
PDRRMC	Provincial Disaster Risk Reduction and Management Council (Philippines)
PFA	Psychosocial First Aid
PHIVOLCS	Philippine Institute of Volcanology and Seismology
PPE	Personal Protective Equipment
PILCD	People's Initiative for Learning and Community Development

PNP	Philippine National Police
PONJA	Post-Nargis Joint Assessment (Myanmar)
PSDS	Public School District Supervisor
PSEI	Post-Secondary Education Institutions (Singapore)
PTA	Parents Teachers Association
RC	Red Cross
RCC	Regional Consultative Committee
RCYO	Red Cross Youth Organization
SARS	Severe Acute Respiratory Syndrome
SBDMC	School-Based Disaster Management Committee (Brunei)
SBDRRC	School-Based Disaster Risk Reduction Council
SC	Save the Children
SCDF	Singapore Civil Defence Force
SCPP	SMRT Community Preparedness Program
SDMP	School Disaster Management Plan (Myanmar)
SDRR	Student Disaster Risk Reduction (Philippines)
SDRRMG	School Disaster Risk Reduction and Management Group
SDS	School Division Superintendent (Philippines) School Division Supervisors (Philippines)
SEAMEO	Southeast Asian Ministers of Education Organization
INNOTECH	Regional Center for Educational Innovation and Technology
SEO	School Emergency Organization
SEPO	Security and Emergency Planning Office (Singapore)
SERT	Students Emergency Response Team
SHINe	School Hydrological Information Network
SIP	School Improvement Plan
SMART	Stormwater Management Road Tunnel
SME	School Mapping Exercise
SMPAPHRSB	Sekolah Menengah Pengiran Anak Puteri Hj Rashidah Sa'adatul Bolkiah (Brunei Darussalam)
SMRT	Singapore Mass Rapid Transit
SMS	Short Messaging System
SNAP	Strategic National Action Plan
SIREP	SEAMEO INNOTECH Regional Education Program
SO	Standing Order (Myanmar)
SOCCSKSARGEN	South Cotabato, Cotabato, Sultan Kudarat, Sarangani, General Santos City

SONA	State of the Nation Address
SPED	Special Education
SPEED	Surveillance in Post Extreme Emergencies and Disasters
SRP	School Resiliency Plan
SST	SMART Support Team
STI	Sexually Transmitted Infections
STEP Center	Science, Technology and Environment Partnership Center
TC	Typhoon Committee (Malaysia)
TERT	Teachers Emergency Response Team
TLS	Transitional/Temporary Learning Spaces
ToMT	Training of Master Trainers
ToT	Training of Trainers
UNDAC	United Nations Disaster Assessment and Coordination
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNHCR	United National High Commission for Refugees
UNICEF	United Nations Children's Fund
UNISDR	United Nations International Strategy for Disaster Reduction
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
UXO	Unexploded Ordnance
VTa	Village Tract Assessment (Myanmar)
WASH	Water, Sanitation and Hygiene
WFP	World Food Programme
WKRC	Water Knowledge Resource Center
WHO	World Health Organization
WSPA	World Society for the Welfare of Animals
WV HEA	World Vision Humanitarian and Emergency Affairs

ABOUT THE TOOLKIT



Education in emergencies (EiE) and disaster risk reduction and management (DRRM) is one of the 10 collaborative projects of the 11 SEAMEO Member Countries for reaching the unreached to achieve Education for All (EFA) by 2015. It was approved in April 2009 during the 44th SEAMEO Council Conference which had as participants 10 international non-government organizations (INGOs) and EFA partners, including SEAMEO INNOTECH. In this joint commitment, the Center's contribution is a toolkit on building disaster-resilient school communities under the SEAMEO INNOTECH Regional Education Program (SIREP).

This toolkit is designed for high-risk school communities in Southeast Asia

within the context of education for sustainable development (ESD). It presents important key concepts and examples on disaster risk reduction and the strategic action taken by SEAMEO Member Countries in integrating these in education and local governance. It is intended for school heads and teachers to help them coordinate, setup, maintain and sustain effective DRRM programs in their respective school communities. It captures the life-giving stories and innovations on school-based DRRM in Southeast Asia into one learning resource package, the end goal of which is to develop disaster-resilient schools communities.

The toolkit is broadly anchored on the Minimum Standards for Education in Emergencies

set forth by the Inter-agency Network for Education in Emergencies (INEE). These standards are intended to 'enhance the quality of educational preparedness, response and recovery, increase the access to safe and relevant learning opportunities and ensure accountability in providing these services' (INEE 2010). The standards set the yardstick for the education sector in ensuring that the fundamental right to education is enjoyed by all people, especially by children and youth who are affected by disasters and conflict.

The first chapter provides an overview of the risk reduction scenario

of the region, giving the readers an idea of both the risk profile of the region as well as the collective progress made to date in the area of disaster preparedness and risk mitigation.

With the education sector as one of those greatly affected by the negative effects of hazards and resulting disasters, the toolkit zeroes in on how schools can be made safer following the Safe School Framework of Save the Children International in the second chapter. The framework serves as a guide for school communities in ensuring safety in both the structural and non-structural aspects of learning environment.



Useful and relevant resource materials developed by various organizations working to mainstream DRRM in school communities are found in the third chapter. The materials are organized according to the three pillars of the Safe School Framework, namely, safe learning facilities, school disaster management, and risk reduction and resilience education. ‘School communities’ refer to the school head and other school personnel, teachers and students, parents and community members including local government leaders who form the core group that works together to build disaster-resilient communities. In many of the SEAMEO Member Countries, the school-based disaster risk reduction and management group (SDRRMG) is the organized manifestation of school communities.



The disaster risk profiles and efforts of various governments in mainstreaming DRRM in their national policies and development programs are featured as Country Profiles in the fourth chapter in support of the preceding discussion on school safety.

Projects of partner organizations featuring innovative strategies that support DRRM in schools are also featured in the fifth chapter.

Moreover, DRRM initiatives were documented from over 40 schools in Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Thailand, Vietnam, and including schools from Japan that were affected by the Great East Japan earthquake in 2011. The schools have generously shared their DRRM experiences and practices that work for school communities. Selected experiences and good practices from these schools, including from selected MOEs, are presented as case stories to highlight the concepts of the Safe School Framework and to provide illustration of the standards set forth in the INEE Minimum Standards for Education in Emergencies. The toolkit likewise highlights the personal stories of resilience in times of disaster from school heads, teachers, parents, students and local government officials. A directory of these schools can be found in Annex 1.

The Center hopes that this publication will be a useful and valuable tool in building resilient-school communities through regional cooperation, capacity building, and continuous information exchange.



Key Concepts

Disaster is defined as a serious disruption of the functioning of a community or a society causing widespread human, material, economic, or environmental losses that exceed the ability of the affected community or society to cope using its own resources. A disaster is a function of the risk process. It results from the combination of hazards, conditions of vulnerability, and insufficient capacity or measures to reduce the potential negative consequences of risk (UN/International Strategy for Disaster Reduction, 2004).



Photo by Operation Compassion Philippines

The following key concepts are defined by the “United Nations International Strategy for Disaster Reduction: Terminology on Disaster Risk Reduction (2009)” as follows:

Hazards are any activity that may cause harm resulting in human injury, and destruction to property and the environment. Hazards can be classified as natural, man-made and biological.

Natural hazards are natural phenomena that could harm people and cause destruction to property. Natural phenomena that can potentially be hazardous are the following: atmospheric, seismic, and other geological/ hydrologic, volcanic and wildfire.

Anthropogenic hazards refer to threats having an element of human intent, negligence, or error; or involving a failure of a man-made system. It involves incidents that can arise from human activities such as the manufacture, transport, storage, and use of hazardous materials, terrorism or war/conflict. Man-made hazards can be categorized as sociological, technological and transportation. Such hazards result in huge loss of life and property.

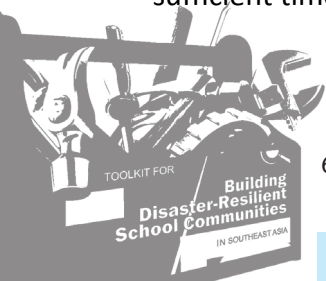
Biological hazards, also known as biohazards, refer to biological substances that pose a threat to the health of living organisms, primarily that of humans. Examples are bacterial, viral infections and other infectious diseases.

Disaster management refers to the range or set of activities related to the different phases of the disaster cycle. There are two major classes of activities: pre-disaster and post-disaster. Pre-disaster phase is related to risk reduction, and post-disaster consists of relief (short-term) and recovery (long-term) management.

Disaster risk management incorporates all activities in the pre-disaster phase, which include, among others, preparedness and mitigation. It can be further divided into two parts: structural (building infrastructure) and non-structural measures (raising awareness, education).

Disaster risk reduction involves the systematic development and application of policies, strategies and practices to minimize vulnerabilities and disaster risks throughout a society.

Early warning system refers to a set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss.



Emergency management refers to the organization and management of resources and responsibilities for addressing all aspects of emergencies, in particular preparedness, response and initial recovery steps.

Emergency services involves a set of specialized agencies that have specific responsibilities and objectives in serving and protecting people and property in emergency situations.

Exposure may be people, property, systems or other elements present in hazard zones that are thereby subject to potential losses.

Land-use planning is the process undertaken by public authorities to identify, evaluate and decide on different options for the use of land, including consideration of long-term economic, social and environmental objectives and the implications for different communities and interest groups, and the subsequent formulation and promulgation of plans that describe the permitted or acceptable uses.

Mitigation refers to the lessening or limiting of adverse impacts of hazards and related disasters.

National platform for disaster risk reduction is a generic term for national mechanisms for coordination and policy guidance on disaster risk reduction that are multi-sectoral and inter-disciplinary in character, with public, private and civil society participation involving all concerned entities within a country.

Preparedness refers to the knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate the impacts of likely, imminent or current hazard events or conditions.

Prevention is the outright avoidance of adverse impacts of hazards and related disasters.

Recovery refers to the restoration, and improvement where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors.

Resilience refers to the ability of a system, community or society exposed to hazards to resist, absorb, accommodate and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.



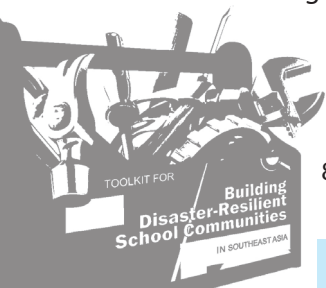
Photo by Operation Compassion Philippines

Impact of Disasters on Education

Disasters know no race, ethnicity or political boundaries. They may strike at any time or place. During times of disaster, the risk to the most vulnerable groups in the community – children, women, persons with disabilities, and senior citizens – is high. According to the United Nations International Strategy for Disaster Reduction (UNISDR), over 100 million children (aged 0 to 17 years old) in Southeast Asia are affected by disasters annually. Every government in the region is confronted with the challenge of mitigating disasters and minimizing the effects, especially in disaster-prone areas.

Disasters disrupt the schooling pattern of children and the youth, and affect the quality of education service in school communities. Classes can be suspended for an uncertain period of time and special classes may be necessary to make up for the lost time, extending the school year of children. These special classes are usually held in emergency learning spaces or makeshift classrooms within the school grounds.

At the Regional Conference on Education in Emergencies and Disaster Preparedness held

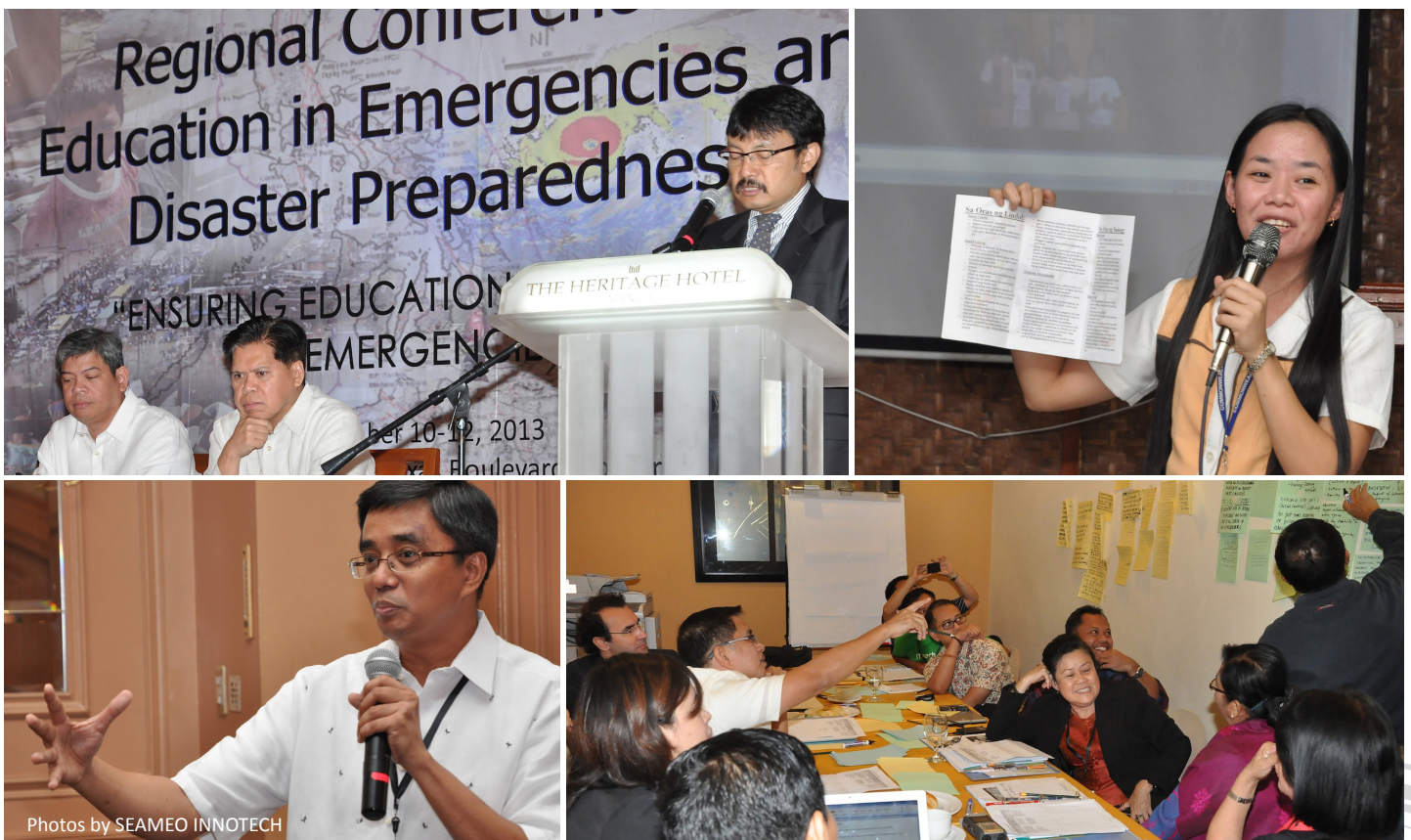


in the Philippines in December 2013, country representatives described how disasters, whether natural or man-made, affect the education sector in their respective countries. In Cambodia, flooding that rises up a meter renders schools inaccessible, causing learners to drop out from school. In Lao PDR, a growing number of students are increasingly exposed to floods, landslides, cyclones, wild fire, food security issues and other natural disasters. Malaysia's monsoon season likewise affects schools in the country. These disasters cause damage to school buildings, loss of furniture, learning materials and equipment, resulting in disruption of the education program. In the Philippines, an increasing trend of cost of devastating typhoons from 2011 to 2013 to the education sector has been noted.

In Indonesia, more than 70% of schools were reported to be prone to earthquake. Out of 1,215,833 elementary, junior and senior secondary schools in the country, 222,821 were lightly damaged in 2012 and 344,548 were heavily damaged in 2013.

In Myanmar, an estimated 20,000 children were not able to go to school in the conflict areas causing them to lag behind in their lessons for at least a year. Access to education also becomes a challenge for children in rural camps unlike in urban camps where there are both government and monastic education, both recognized in the formal education system of the country.¹

¹ Country Paper Presentations, Regional Conference on EiE and Disaster Preparedness, 10-12 December 2013, Philippine Department of Education



Where schools have been heavily damaged either by natural disasters or armed conflict, student records are lost and classrooms have to be rebuilt. In several countries across Southeast Asia, school buildings also serve as evacuation shelters or centers for the displaced population. As a result, the students and teaching staff themselves get displaced with no space for holding classes. School facilities and property are sometimes destroyed due to misuse of evacuees, especially the washing and toilet facilities.

Moreover, during disasters teachers and students are oftentimes injured, or even killed. In conflict areas, children who are caught in the crossfire cannot go to school and are often inclined to drop out. Teachers cannot go back to work in the school because it may be too dangerous. The resulting chaos and disruption of school life may cause children and the youth, as well as their teachers, to be confused and deeply discouraged. There is a need to equip and empower school communities to deal with the psychosocial ill effects and trauma.



Photo by SEAMEO INNOTECH

Building School Resiliency

Effects of disasters can be mitigated and the impact on the school community minimized. The Hyogo Framework for Action² on building resilient communities focuses on integrating disaster risk reduction (DRR) programs in education.

Schools serve as a central point of learning, cultural gathering and social bonding in most communities. Students, teachers and parents belong to the school environment. They constantly interact to create conducive conditions for learning and for celebrating culture. The school system has the capacity for knowledge innovation particularly in building a culture of safety, prevention and resilience. It can be transformed into a community of learning and practice that significantly influences disaster mitigation, response and recovery. Making schools the focal point in DRR education for the entire community is a proven effective approach.

In 2006, the global campaign of the UNISDR aptly called ‘Disaster Reduction Begins in School,’ strengthened the tested concept that education and disaster prevention go hand in hand. DRR education equips the community with knowledge and skills to save lives and prevent injuries during times of disaster. It also ensures that learners recognize valuable lessons, develop helpful practices as a community, and build the individual’s confidence to be resilient towards hazards. The resilience of a community in respect to potential hazard events is determined by the degree to which the community has the necessary resources and is capable of organizing itself both prior to and during times of need (*UNISDR Terminology in Disaster Risk Reduction, 2009*).

Historical information on the frequency of disasters can be integrated in the overall disaster education of the school. Significant lessons from past disasters can help the school community reflect on their capacities and prepare areas prone to disasters. The community can share insights on disaster resilience and mobilize much needed support to build safer school structures, create better evacuation plans, and maintain health and hygiene facilities, among others.

² The Hyogo Framework for Action (HFA) is a set of guidelines to reduce vulnerabilities to natural hazards, which assists governments in their efforts to become more resilient to, and cope better with hazards that threaten their development gains. The Framework is one outcome of the World Conference on Disaster held in Kobe, Hyogo, Japan in January of 2005.

Training teachers and educating the young in school on DRR could serve as a crucial step in motivating the community to influence policy-makers and planners to formulate policies on the integration of DRR in the education sector and ensure the allocation of funds and resources. While disaster poses dangers, it also opens opportunities for community cohesiveness and social consensus in rehabilitating socio-economic assets beyond previous conditions. DRR education on how to prepare for and act during disasters should not only be considered as knowledge transfer from teachers to students, but also as an opportunity for learning by everyone.



Photo by SEAMEO INNOTECH

“Making schools the focal point in DRR education for the entire community is a proven effective approach”



CHAPTER 1

DISASTER PROFILE AND STATUS OF DISASTER RISK REDUCTION AND MANAGEMENT IN SOUTHEAST ASIA



Southeast Asia is a region known for its diversity in culture, ethnicity, history, and natural heritage. It consists of two main geographical areas:

- Mainland Southeast Asia comprising Cambodia, Lao PDR, Myanmar, Thailand, Vietnam and peninsular Malaysia, and; Insular Southeast Asia comprising Brunei, east Malaysia, Timor-Leste, Indonesia, the Philippines, and Singapore.
- The region has coastal states: Brunei Darussalam, Cambodia, Malaysia, Singapore, Thailand, Timor-Leste and Vietnam. Lao PDR is considered as a land-locked state because of the absence of a coastline or seacoast. Indonesia and the Philippines are classified as archipelagic states, or nations composed of archipelagos and islands. Except for Timor-Leste, all countries of Southeast Asia are members of the Association of Southeast Asian Nations (ASEAN).

Southeast Asia is one of the fastest growing regions in terms of population and economic growth. Most of the countries in the region are developing countries with substantial population growth rate. Population and livelihoods are two major socio-economic parameters that are most affected by disasters caused by natural hazards and by climate change.

Climate change and climatic variability continue to impact all sectors, from national and economic security to human health, food production, infrastructure, water availability and ecosystems (Senga 2009). Many of the largest cities in Asia are located on the coast and within major bodies of waters like rivers and coastlines which render them more vulnerable to impacts of climate change.



Photo by neilalderney123 from flickr

1.1 Exposure to Hazards

The movement of Southeast Asia's population to the cities has increased (Yap 2011). As of 2010, it is noted that 41.8% of the total population is residing in urban areas and it is projected to increase to 46.7%. Some major cities in Southeast Asia have been classified as megacities³. Not all cities have the capacity in terms of land area to hold huge population migration. A majority of the urban population of Southeast Asia lives in smaller cities and towns. Only 13.8% lives in cities with more than 5 million inhabitants, while 67% of the urban population of Southeast Asia (165 million people) lives in urban settlements with less than 500,000 inhabitants (UNDP 2010).

The high concentration of people, economic activities and services in a relatively small area makes a profound impact on the urban society and economy. Urban economies of scale and agglomeration lead to better access to services, greater prosperity and changes in lifestyle, but rapid urbanization also leads to growing number of slums and squatter settlements, social alienation and environmental pollution (Yap 2011).



With increasing population movement and urbanization, these cities become more vulnerable to the effects of natural disasters. A recent study by the Asian Development Bank, the World Bank, and the Japan International Cooperation Agency looked at the effects of climate change on three of Asia's megacities. The study estimated that 26% of the population in Ho Chi Minh City is currently affected by extreme storm events. By 2050, this number could climb to more than 60%. In Metro Manila, a major flood under a worst-case scenario could result in the loss of nearly a quarter of the gross domestic product (GDP) of the metropolitan area. Manila faces not only sea level rise and extreme rainfall events but also typhoons. The study concluded that such climate-related risks must be an integral part of city and regional planning for sensitive megacities.³

In terms of vulnerability of megacities, Dhaka, Bangladesh, ranks first in Asia with Jakarta in Indonesia and Manila in the Philippines tied at second on the list because of the size of the cities, degree of exposure to floods, and relatively low adaptive capacity. Phnom Penh in Cambodia ranks third and is described as having very low adaptive capacity, while Ho Chi Minh City in Vietnam ranks fourth due to its vulnerability to sea-level rise effects but relatively higher adaptive capacity. Bangkok, Thailand, ranks fifth because of its relatively high socio-economic sensitivity to impacts due to disasters (i.e., it has a large population and contributes a large proportion towards Thailand's gross domestic product). Kuala Lumpur in Malaysia and Singapore are tied at sixth because both have slightly more adaptive capacity than other cities (World Wide Fund Report, 2009).

In the past decade, on annual average, more than 200 million people were affected and more than 70,000 were killed globally as a result of natural disasters. These figures represent 90% and 65%, respectively, of the world's totals. Natural disasters have also caused more than half of the total world economic losses of USD 687 million (Chan 2012). Most of these devastating disasters occurred in Southeast Asia. The major disasters that affected the region in recent years— cyclone Nargis in Myanmar and typhoon Fengshen in the Philippines— brought widespread death and destruction.

Hazards caused by human activities and conflict also pose a threat to countries in the region. The situation in Timor-Leste and Myanmar is marked by political turbulence. Armed conflicts in the Philippines and Thailand have decreased but still persist. The potential for avian/human influenza pandemic remains and the effects of climate change are increasing challenges.

Participants at the *Regional Conference on Education in Emergencies and Disaster Preparedness* (Philippines, December 2013) summarized the types of hazards experienced in their respective countries, as shown in **Table 1**.

³ The term "megacities" refers to cities with populations over 10 million.

Table 1: Types of Hazards per SEAMEO Member Country

Country	Natural Hazards	Man-Made or Technological Hazards
Brunei Darussalam	floods, landslide	haze
Cambodia	storms, floods, avian flu	land mines
Indonesia	volcanic eruptions, earthquakes, flood, landslides, drought, cyclone, tsunami	fire, transport accidents
Lao PDR	earthquake, floods, droughts, storms, landslides, disease outbreaks, epidemics	unexploded ordnance (UXO), fire
Malaysia	monsoon floods, landslides	haze
Myanmar	floods, cyclone, earthquake, tsunami	armed conflicts, inter-communal conflicts, unexploded ordnance, fire
Philippines	earthquakes, volcanic eruptions, typhoons, tsunami, landslides, floods/flash floods sinkholes, debris flow and storm surges.	armed conflict
Singapore	health-related outbreaks	haze
Thailand	tsunami, floods, storm, drought	armed conflict
Timor-Leste	earthquakes, tsunamis, cyclones, flood, landslide, La Niña and El Niño	civil unrest and military disturbance
Vietnam	cyclone, flood, landslide, drought	

Source: Country Paper Presentations, Regional Conference on EiE and Disaster Preparedness, 10-12 December 2013, Philippine Department of Education



As socio-economic development accelerates and populations rise in the region, the impact of human activity on the natural environment has become a serious and urgent concern. Rainforests areas are being logged for timber or are being converted into agricultural plantations resulting in unprecedented hazards (e.g., haze in Singapore from forests being cleared through burning in Indonesia) and loss of habitat for both flora and fauna (IFRC 2009).

1.1.1 Natural Hazards Affecting the Region

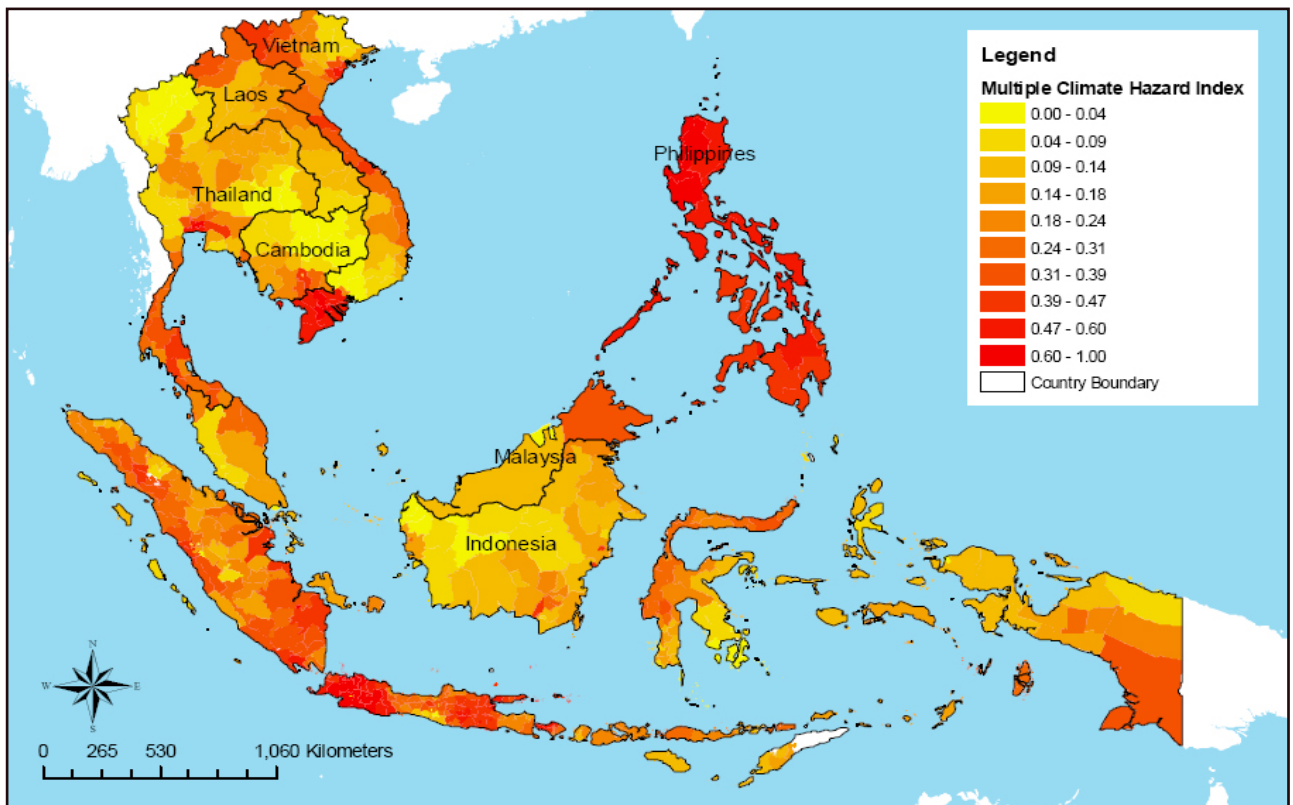


Figure 1: Multiple Climate Hazard Map of Southeast Asia

Legend: For the legend, the scale used is 0-1 indicating the lowest vulnerability level (0) to the highest vulnerability level (1) Source: Economy and Environment Program for Southeast Asia (EEPSEA)

The multiple climate hazard map of Southeast Asia (**Figure 1**) shows the most vulnerable places in the region: all the geographic areas of the Philippines; the Mekong River delta in Vietnam; almost all of Cambodia; North and East of Lao PDR; Bangkok region of Thailand; and west Sumatra, South Sumatra, West Java and East Java of Indonesia. In Indonesia, the most vulnerable are western and eastern Java and central Jakarta. It is frequented by multiple hazards like flooding, earthquakes, and landslides.

In the Philippines, the areas with the highest vulnerability are the National Capital Region, Southern Tagalog, Cagayan Valley, Central Luzon, the Cordillera Administrative Region, and Bicol Province. The National Capital Region of the Philippines, which is densely populated, is particularly susceptible to multiple climate hazards, especially tropical cyclones and floods. **Table 2** summarizes the dominant hazards in these climate hazard hotspots in the Region.

Table 2: Climate Hazard Hotspots and Dominant Hazards in Southeast Asia

Climate Hazard Hotspots	Dominant Hazards
Northwestern Vietnam	Drought
Eastern coastal area of Vietnam	Cyclone, drought
Mekong region of Vietnam	Sea level rise
Bangkok and its surrounding areas in Thailand	Sea level rise, flood
Southern regions of Thailand	Drought, flood
The Philippines	Cyclone, landslide, drought, flood
Sabah State in Malaysia	Drought
Western and eastern area of Java Island, Indonesia	Drought, flood, landslide, sea level rise
Northwestern Vietnam	Drought

Source: Climate Change Vulnerability Mapping for Southeast Asia

Due to its proximity to oceans and the presence of monsoons, most Southeast Asian countries are exposed to cyclones (typhoons), flooding and sea level rise (World Risk Report, 2012). With increasing urban migration patterns and population growth, people are occupying high-risk areas in greater numbers than ever, increasing their vulnerability to disaster impacts.



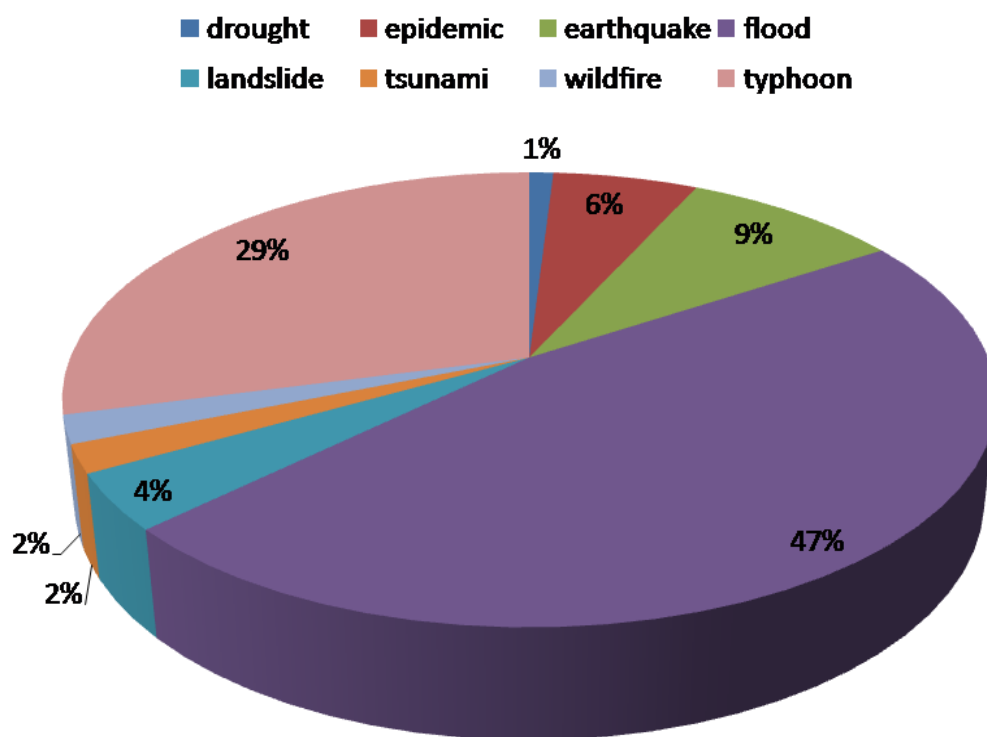


Figure 2: Hazards that Affect Southeast Asia, 1984 to 2013

Source: EM DAT: The OFDA/CRED International database, data retrieved 10 June 2013

Hydrologic hazards have caused the most number of deaths. In the last decade, floods have been the most frequently occurring hazard. The total number of people affected was 49 million and the total recorded damage in the region is estimated at USD 475 million. The Philippines and Thailand have the highest number of people affected by floods in the region (EM DAT). The Philippines has the highest recorded cost of damage to property amounting to USD 421 million. Other hazards that frequently affect the region are storms and typhoons or tropical cyclones (29%), earthquakes (9%), epidemics (6%), and landslides (4 %) (**Figure 2**).

Storms and typhoons (cyclones) cause severe floods and landslides in the region. In the last decade, a total of 87 tropical cyclones hit the Philippines and 27 in Vietnam (EM DAT), affecting about 67 million people in the region. A significant number of the landslides are mudslides or mass wet movement caused by floods, storms or typhoons. The storm surge caused by super typhoon Haiyan which made landfall in the Visayan region of the Philippines in November 2013 caused an estimated 8,000 deaths and left 344,300 homeless. With maximum sustained winds of 195 miles per hour (315k/h), it was reported to be among the strongest cyclones in the world in terms of wind strength (Rappler).

Geological hazards, like earthquakes, rank second as cause of mortality and damage. Indonesia lies in an area of extreme seismic activity which explains why it has experienced the most number of recorded earthquakes in the region. Earthquakes can cause tsunami. The worst recorded tsunami in the region was in 2004 resulting from an earthquake that originated in the Indian Ocean. Indonesia was hardest hit, followed by Sri Lanka, India and Thailand. In October of 2013, a 7.2 magnitude earthquake caused great devastation in the Visayan province of Bohol in the Philippines with the seismic activity extending to nearby provinces of Cebu and Siquijor. The total cost of damage in the region was estimated at USD 23 million (EM DAT n.d.).



Table 3: Frequency and Impact of Natural Disasters in Southeast Asia, 2003 to 2013

Country	Frequency	No. Killed	No. Injured	No. Affected	No. Homeless	Total Affected	Total Damage USD '000
Cambodia	16	525	114	2,567,868	26,500	2594,482	592,000
Indonesia	160	180,186	155,940	9,551,018	1,309,768	11,016,726	15,045,887
Lao PDR	8	179	91	952,504	0	952,595	133,000
Malaysia	26	246	773	389,367	48,296	438,436	1,500,000
Myanmar	20	139,209	20,562	3,264,532	35,589	3,320,683	4,564,158
Philippines	191	13,335	139,818	71,244,946	182,420	71,567,184	6,610,421
Singapore	1	33	0	205	0	205	0
Thailand	46	10,063	8,523	42,966,122	1,050	42,975,695	42,669,930
Timor-Leste	7	26	0	11,063	0	11,063	0
Vietnam	77	2,893	3,974	13,718,022	857,250	14,579,246	5,605,572
TOTALS	552	346,695	329,795	144,665,647	2,460,873	147,456,315	76,720,968

Source: "EM-DAT: The OFDA/CRED International Disaster Database. www.em-dat.net - Université Catholique de Louvain - Brussels - Belgium"

As shown in **Table 3**, countries in the region experienced a total of 552 events of natural disasters in the past decade leaving 147,456,315 affected, 346,695 dead and incurring over USD 76 billion in damage. Philippines topped the list with 191 occurrences, followed by Indonesia (160) and Vietnam (77). Mortality due to these disasters is highest in Indonesia, Myanmar and the Philippines. A total of 71,567,184 have been affected in the Philippines, particularly in the aftermath of super typhoon Haiyan. Thailand incurred the highest cost of damage due to disasters at USD 42,669,930, followed by Indonesia at USD 15,045,887, and the Philippines at USD 6,610,421.

1.1.2 Biological and Man-Made Hazards Significantly Affecting the Region

An emergency is an extraordinary situation that puts the health and survival of a population at risk. The SEA region faces a great number of disasters related to health problems and major vulnerabilities. Children including infants are burdened by poverty, gender issues and infectious diseases posing problems for the alleviation of undernutrition, for instance. The nutritional principles governing infant and young child feeding will be the same in an emergency as for any other situation, however the increased burdens placed on populations and the unique challenges of emergencies may necessitate more flexible and innovative approaches (Complementary Feeding of Infants and Young Children in Emergencies, IASC, October 2009).

Epidemics caused by viral infections like H1N1, dengue or severe acute respiratory syndrome (SARS) have widespread effect on the local population. Unlike other hazards, epidemics can be controlled through effective surveillance, proper management of cases, medical research and vaccination.

Singapore was one of the countries in the region hardest hit by the SARS epidemic in 2003, with 238 cases and 33 deaths. The outbreak was contained rapidly through the administration of several stringent measures such as ‘wide-net’ surveillance and enforcement of isolation and quarantine policy. An assessment of the epidemic control program showed that these measures had a ‘profound impact on the health care system and community, and were associated with significant disruptions in normal life, business and social intercourse.’ Nearly 8,000 contacts were put on home quarantine and 4,300 on telephone surveillance. Daily temperature monitoring was done for all health care workers in all hospitals and among all students in all schools to identify SARS cases.

In 2009, Singapore resulted in a last-minute school closure due to H1N1 outbreak.

“Two secondary schools have decided to close for a week after their teachers tested positive for the Influenza A (H1N1) virus on Saturday. . . [The] schools have asked their students to stay away and do home-based learning for this period. The two schools’ closure comes on a day that the country clocked its largest number of new H1N1 cases in a day. A fresh 145 were confirmed yesterday, with another 77 cases pending confirmation... The Ministry of Education said in a statement last night that all students from [the schools] will be provided with home-based learning lessons this week. Staff who were not in close contact with the infected teachers will return to the schools to help coordinate the operations for home-learning... The schools will deliver materials for home-based learning to their students and monitor their progress via phone, e-mail and the schools’ learning management systems. Parents will also be informed of activities and study schedules.” (Singapore Enquirer, June 29, 2009)



Wildfires account for 2% of the hazards affecting the region (**Figure 2**). Although caused naturally by lightning, most wildfires that affected the region are man-made (ASEAN 2010). Fires caused by 'slash and burn' practices of farmers for clearing forested areas for agricultural plantations caused the worst haze pollution the region has experienced. Moreover, rice paddy burning is a common practice in Southeast Asia resulting in poor air quality particularly at the local level.

Haze from forest fire is considered to be a trans-boundary hazard because it affects many countries at the same time. It is alarming that the region has no substantial data in the past decade on the effects of the haze. Southeast Asian haze is a fire-related large-scale air pollution problem that occurs regularly. In June 2013, haze pollution overwhelmed major parts of Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore and Thailand, significantly affecting the economy of these countries (Regional Haze Action Plan, Haze Action Online). The haze struck Singapore for more than two weeks, causing the temporary closure of business establishments and the cancellation of domestic and foreign flights.



Figure 3: Peat fire in Selangor, Malaysia, 5 June 2013

Source: http://en.wikipedia.org/wiki/Southeast_Asian_haze

Traditionally, the large multinational corporations had been blamed, but in recent years the small- to medium-size plantations have been found to start the majority of fires (<http://world.time.com/2013/07/30/the-southeast-asian-haze-is-back-and-worse-may-follow/>).

The problem flares up every dry season, in varying degrees, and affects Malaysia, Singapore, Brunei, Southern Thailand, and Indonesia. Haze-related damages can create significant disruption to people's daily lives and affect people's health. As a whole the recurring haze incidents affected regional economy and generated contention between governments of nations affected. The health effects of haze are mainly caused by the irritant effects of fine dust particles in the nose, throat, airways, skin and eyes. Persons with medical problems like asthma, chronic lung disease, chronic sinusitis and allergic skin conditions are likely to be more affected by the haze and they may experience more severe symptoms. Children and the elderly in general are more likely to be affected (Ministry of Health Singapore, 2014).

In addition, severe haze weather can lead to long-term health damages, reduced crop productivity, industrial production losses, airline and airport losses, fishing decline, incurs costs on cloud seeding, aesthetic value of reduced visibility, aversive expenditures, accidents, loss of life, evacuations, and loss of confidence by foreign investors and tourists (David Glover and Timothy Jessup, 2006).

Other man-made disasters which affect the region and pose threats to lives and socio-economic activities of member states include armed conflict. Civil unrest has plagued Myanmar since the end of World War II with three groups fighting each other namely, the government, the Communist Party, and ethnic insurgents seeking regional autonomy. Through the years, the internal conflict has been fueled by the government's refusal to grant ethnically defined regional autonomy. This has resulted in the deaths of thousands of people, incarceration of several hundreds and displacement of populations. For instance, over 140,000 are living in Thailand as refugees (Political Economy Research Institute, University of Massachusetts Amherst).

The political instability in Thailand, which springs from a decades-long separatist insurgency reignited in 2004, has resulted in injury and death of many protesters in the southernmost border provinces. In the Philippines, a rebel faction of the Moro National Liberation Front attacked Zamboanga City in the Mindanao region in September 2013. The exchange of fire between government troops and rebels resulted in estimated 10,000 houses burned to the ground, 170,000 individuals affected and 125,400 displaced (Reliefweb n.d.).

These disasters, whether natural, bio-hazard or man-made, have particularly affected school communities with students, teachers and school staff also among those injured, displaced or killed. Schools oftentimes serve as evacuation centers which further contribute to disruption of classes.



To reduce disaster-related risks and to mitigate their effects, there is an urgent need to integrate and promote relevant disaster risk management initiatives. This includes developing plans of action for infant and young child feeding in emergencies (IFE) to increase the resiliency of schools, particularly those located in high-risk communities.

1.2 Regional DRRM

In the last decade, Southeast Asian nations have acknowledged the importance of prioritizing programs and projects to address issues on monitoring, forecasting and early warning of disasters caused by natural hazards. Many realized that disasters are not a unique occurrence. In the past, governments and relief agencies focused on contingency planning as an approach. Much emphasis was given to preparedness planning and measures such as relief stockpiling. There was little focus on the factors influencing the occurrence of a disaster and the resulting socio-economic impacts.

There has been a major paradigm shift in the region's disaster management system in the recent years. From disaster relief and recovery, emphasis is now being given to cultivating a culture of preparedness, mitigation, rehabilitation and reconstruction.

“This contingency planning approach improved the efficiency of relief agencies and resulted in a significant drop in the number of deaths, but it left a lot to be desired in terms of appropriate and effective long-term rehabilitation, reconstruction and sustainable development. As the knowledge base grew, disaster response and risk managers began to realize that it was not enough to manage disaster events alone but that the underlying risks needed to be addressed as well. By reducing vulnerability to hazards, building capacity and improving people's ‘resilience,’ disaster risks could be reduced” (ADPC 2004).

This long-term approach supports the goal of education for sustainable development. By participating as a community, people will eventually reduce disaster risk and vulnerability to hazards, build local capacity, and improve coping mechanisms for resiliency.

In 2005, the 10 ASEAN Member States,⁴ together with Timor-Leste, signified their intention to adopt the Hyogo Framework for Action (HFA). HFA is a valuable tool that effectively assists nations and communities to become more resilient to and cope better with hazards that threaten their development gains. One of the goals of HFA is to systematically integrate DRRM in government policies, plans and programs by building the necessary capacities at the community and national level for reducing risks and vulnerabilities. Implementation of a disaster risk management program varies across countries in the region due to the different types of government systems and forms of local governance.

⁴ The 10 ASEAN member states are Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam.

Integration of DRRM in government policies that are translated into laws will allow authorities to do the following:

- allocate budget for DRR initiatives;
- implement clear-cut guidelines for and define roles of national, regional, humanitarian agencies, NGO and INGOs on their disaster risk management plan; and
- create a monitoring system for long-term requirements on disaster prevention and short-term needs on disaster preparedness.

Despite vigorous efforts by governments to integrate DRRM in their national policies, most countries in the region still struggle on how to operationalize and translate policies into responsive DRRM programs and procedures, particularly in the following areas:

1. FINANCING

Most ASEAN states allocate budgetary provisions for potential disaster relief and early recovery purposes. In the Philippines, the local government (municipal) is mandated to allocate 5% of its revenue to the Local Disaster Risk Reduction Management Fund (LDRRMF) intended for use by the Local Disaster Risk Reduction and Management Office (LDRRMO) for relief, rehabilitation and reconstruction. Another example is Vietnam which sets aside 2 to 5% of the annual national budget as contingency fund for various emergency purposes, including disaster relief and early recovery.



Figure 4: Map of Southeast Asia

Source: <http://www.mapsnworld.com>



Southeast Asian countries face funding constraints for DRRM programs. In Cambodia, Lao PDR and Myanmar, budget allocation for disaster relief and recovery is inadequate to meet actual needs. Some governments make budget cuts in their disaster risk reduction program when disasters are not imminent or occur with less frequency.

In the Philippines, funding is insufficient because of the numerous disasters that the country experiences in a given period. In 2009, for instance, the DRRM budget was significantly depleted before Typhoons Ketsana (local name Onday), Parma (Pepeng) and Fengshen (Frank) had even occurred, resulting in the approval of a supplemental PHP 12 billion from another budget line to respond to these typhoons. The following year, over half of the budgetary provision for disasters was allocated to the Ondoy and Pepeng recovery and reconstruction efforts, creating further funding difficulties in responding to future disaster events (ASEAN 2012). Governments in the region need to plan more effectively and invest a significant portion of their gross domestic product (GDP) for disaster risk reduction.

2. STRATEGIES

In relation to dealing with health-related outbreaks, the government of Singapore employs the “whole of government approach” to which its national emergency crisis management is anchored. Specifically, the education sector takes a “whole of MOE approach” consisting of the MOE, the schools, the institution of higher learning, and special schools, all working together to abate a crisis. The MOE’s strategic goals on pandemic preparedness include a) early detection and isolation, b) social distancing, and c) continued emphasis on personal hygiene and social responsibility (see **Case Story 17**).

Since 2006, Singapore has established a systematic structure and processes for pandemic preparedness involving training during normal condition, regular observance of standard operating procedures (SOPs), and creation of School Emergency Organization (SEO), which consists of emergency response group, assembly group, care group, parent management group and security group.

3. IMPLEMENTING STRUCTURE AND MECHANISMS

Amidst the problems and challenges, the need for regional cooperation has become an essential condition among Southeast Asian nations. Disaster management has been institutionalized through the ASEAN Experts Group on Disaster Management (AEGDM) (Bildian 2008). This group analyzes issues and shares best practices in disaster risk management initiatives. It recommends solutions that ASEAN Member States can adopt or replicate.

The ASEAN also developed mechanisms to coordinate humanitarian response through the ASEAN Agreement for Disaster Management and Emergency Relief (AADMER). The agreement aims to promote regional cooperation and collaboration for reducing the impact of disaster and intensifying joint emergency response to disasters in the ASEAN region. AADMER is also ASEAN's affirmation of its commitment to the Hyogo Framework for Action. AADMER contains provisions on disaster risk identification, monitoring and early warning, prevention and mitigation, preparedness and response, rehabilitation, technical cooperation and research, mechanisms for coordination, and simplified customs and immigration procedures. AADMER also provides for the establishment of an ASEAN Coordinating Center for Humanitarian Assistance on Disaster Management (AHA Centre), which acts as a secretariat for operations under the Agreement (ASEAN, 2010). The AADMER Work Programme (AWP) for 2010 to 2015 operationalizes AADMER. The ASEAN Safe Schools Initiative (ASSI) Project is a regional initiative designed to support a key education component of this Work Programme under Strategic Component 2, Prevention and Mitigation. Major objectives include integration of DRR in the school curriculum and ensuring disaster safety of educational facilities.

To gauge the progress of country-level initiatives within ASEAN towards a safe school model, ASSI Phase 1 (January to June 2013) involved more than 350 people, including national and international stakeholders, in consultations and workshops and provided a country-level audit of school construction practices, integration of disaster risk reduction in school curricula, school disaster risk management, and existing school vulnerability assessment guidelines. All the countries that participated in the consultations have demonstrated a commitment to national policies related to Disaster Management and Safe Schools and have produced a series of national guidelines that vary in detail and focus. The AADMER Phase 1 Accomplishment Report highlighted the achievements made from 2010 - 2012 under several of the 14 flagship projects. Under prevention and mitigation, achievements have included the endorsement of the design for ASSI Phase 2 as part of the priority project.

4. MONITORING SYSTEM

Communicable diseases also pose a threat to the region. ASEAN Member States have developed integrated approaches in surveillance and response to emerging infectious diseases with focus on multi-sector and multi-country collaboration and information sharing. The ASEAN Technical Working Group on Pandemic Preparedness and Response (ATWGPPR) was set up as a coordinating body, which drives multi-sector cooperation in the region. The Agreement on Disaster Management and Emergency Response was ratified in December 2009 which seeks to provide effective mechanisms to reduce loss of lives and assets due to disaster among the constituents of the Member States, and to jointly respond to disaster emergencies in the region (ASEAN, 2010).



In terms of reducing haze pollution in Southeast Asia, all ASEAN member countries signed in 2012 the ASEAN Agreement on Transboundary Haze Pollution as a legally binding environmental agreement to mitigate the transboundary haze pollution through concerted national efforts and international cooperation (ASEAN Secretariat, 2014).

In October of 2013, ASEAN leaders approved a joint haze monitoring system at a cost of USD 100,000. Additionally, Singapore has offered to start working directly with Indonesian farmers to encourage sustainable practices and minimize the problem over time by “tackling the haze issue at its root.” ASEAN has tried to depart from its institutional culture in an attempt to achieve deeper cooperation on this issue. However, the ‘haze treaty’ is criticized by some as being vague and lacking enforcement mechanisms or strong instruments for dispute-resolution due to the ASEAN style of regional engagement which protects national sovereignty rather than regional interests (Varkkey, Helena Muhamad, 2012).

REGIONAL CONSULTATION

In December 2013, the Philippine Department of Education in cooperation with SEAMEO INNOTECH organized the Regional Conference on Education in Emergencies and Disaster Preparedness in the aftermath of typhoon Haiyan. Seven countries were represented in the conference namely, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines and Singapore.

The conference aimed to promote and strengthen regional cooperation on EiE and DRR. Specifically, the following objectives were set:

1. To facilitate exchange of knowledge and experience among countries and partners on existing policies and institutional mechanisms for EiE and DRRM in the region;
2. To draw out recommendations on how to further enhance regional efforts on EiE and DRRM; and
3. To generate discussions on post-2015 agenda for EiE and DRRM in Southeast Asia.

Existing regional/international efforts that relate to DRRM and EiE were discussed in this conference as follows:

1. Global Action Plan on ESD which focuses on policy, learning-training environments
2. Capacity building, empowering youth, and local-level solutions
3. Cluster mechanisms which help ensure predictability, accountability, and partnerships to support national-led response mechanisms
4. Regional platform for discussions and exchanges on strategies to put greater emphasis on providing quality education to vulnerable learners (e.g., Ten Collaborative Projects to Reach the Unreached)
5. Minimum standards for education preparedness, response, and recovery (INEE)

6. Tools and material resources to guide practitioners working in the field of EiE/ DRRM (i.e., INEE tools, DRRM Toolkit)
7. Established network and partnerships on EiE (i.e., Global Alliance for DRR and Resilience in the Education Sector; Global Partnership for Education, Asian Coalition for School Safety, AADMER Partnership Group)
8. Other EiE innovations such as the Learning Institutions as Zones of Peace (LIZOP), online programme on Excellence in Leading Education in Emergency Situations (LEADeXCELS), and the Education Strategic Response Framework

To observe how school-based disaster preparedness is being done, the conference participants visited the Commonwealth Elementary School which has been recognized by the Philippine Department of Education for its excellence in strengthening the school's resiliency and adaptive capacities to disaster risks.

The conference served as a platform for discussion on the status of regional and country EiE and DRRM implementation, and generation of recommendations.

The regional participants were tasked to discuss in small groups three major areas, namely, 1) challenges in EiE and DRRM, 2) recommendations on regional cooperation, and 3) recommendations on post-2015. Technical experts were assigned to provide guidance to each group with representatives from different countries.

The following table summarizes the outputs from the group brainstorming:

Table 4: Summary of Outputs at the Regional Conference on Education in Emergencies and Disaster Risk Reduction, 10-12 December 2013, Philippines

Gaps/Challenges in EiE and DRRM	Recommendations on Regional Strategies and Cooperation Mechanisms	Recommendations on Post-2015
1. <u>Foundational Standards</u> • Unavailability of adequate resources to implement DRR plans and activities at all administrative levels • Absence of concrete guidelines for implementation • Poor coordination of other stakeholders	1. Be coherent in the use of materials and more importantly clear on the key messages. 2. Draw up common concepts/messages 3. Translate existing materials to mother tongue 4. Harmonize the use of materials for consistency	1. Institutional accreditation in ASEAN level 2. Knowledge management system and continuous effort on ASEAN-IEC 3. Action plan on DRRM (fund raising generation)



Gaps/Challenges in EiE and DRRM	Recommendations on Regional Strategies and Cooperation Mechanisms	Recommendations on Post-2015
• Need to localize, translate EiE standards into local language, e.g., Myanmar, Indonesia • Need for a unifying body • Differences in geographical location - Disaster / hazards are different - Zoning of school's geographical characteristics: Site specific, Vulnerability assessment • NGO intervention / pockets of intervention found only in selected schools • Need to consider conflict-specific scenarios, e.g., focus on education and disaster prevention, existing conflicts within the country • Absence of economics of risk reduction, i.e., investment versus cost 2. <u>Access and Learning Environment</u> • Lack of inventory, vulnerability and risk assessment of school infrastructure	5. Conduct monitoring and evaluation 6. Continue capacity building in terms of conferences and training 7. Establish multi-lateral technical panels to address policy and implementation 8. Link education to national disaster management office for better efficiency 9. Strengthen advocacy and research 10. Disseminate EiE and DP effectively and efficiently 11. Clear MOU at the regional level 12. Empower local authority in the implementation of DRR program 13. SEA to have a regional policy, for national adoption • Dialogue between ASEAN-SEAMEO joint regional policy with UN support • Avoid competition in DRR efforts 14. Regional commitment to “push” for national commitment 15. Review the Hyogo framework regional commitment	• ASEAN strategic policies on EiE integration 4. Sharing of resources (publication/ dissemination and technical assistance) 5. Development of action points by type of disaster 6. Comprehensive and consistent regional exchange of best practices 7. Open discussion in “emerging risks” in the region between states/ member-countries, e.g., haze, keep in mind political implications to get policy approval 8. Creation of opportunity by convenor for open discussion and learning exchange on EiE issues 9. Engaging in global consultation on EiE priorities, e.g., individual, group, SEAMEO

Gaps/Challenges in EiE and DRRM	Recommendations on Regional Strategies and Cooperation Mechanisms	Recommendations on Post-2015
• Weak capacity of school leaders to implement DRR and integrate DRRM into school system • Lack of recognition of the importance of education in emergencies • Protection services of education sector is not recognized • Absence of recognition for school as community-owned institution, protection haven, or extension of home • Need to put forward by the education section, e.g., school facility and shelter • Need for recognition of education sector as instigator of full recovery efforts • Lack of integration of health sector, e.g., medicines, hygiene • Absence of parents' engagement to support DRRM 3. <u>Teaching and Learning</u> • Unclear program for continuity of education in emergencies and disasters	16. Unify efforts on DRRM between government and NGOs to be convened by UNISDR 17. Strengthen geographic mapping per country • Policies can be drawn from grassroots level • Recognition of importance of education in emergency 18. Need to put forward by the education section, e.g., school facility & shelter 19. Education sector to act as instigator of full recovery efforts 20. Integrate health sector in DRR, e.g., medicines, hygiene 21. Conduct training for all sectors in the community, e.g., women, village leader, etc. 22. Build common understanding of the hazards/risks involved • Tap community leaders, monks, people trusted by the community on the importance of DRRM	10. Nurturing strategic partnerships at global and regional levels 11. Possible application of country studies in using minimum standards on EiE 12. Establishment of a network to facilitate regular forum accessible to teachers, school leader to discuss best practice, e.g., social media 13. Building of DRR knowledge based on personal/actual DRRM experience of the people/ education sector – this knowledge can serve as inputs to policy-making decisions 14. Explanation by education section of the “science” behind climate change and its impact on DRRM



Gaps/Challenges in EiE and DRRM	Recommendations on Regional Strategies and Cooperation Mechanisms	Recommendations on Post-2015
• Poor contingency measures • Need to define the role of education to empower community to manage risk • Absence of expertise to fully mainstream DRR in curriculum • Unclear funding source to sustain DRR • Need to define the role of education in “de-mystifying” DRR concept • Need to identify practical steps/actions on “how-to’s” • Need to use right medium to convey the message 4. <u>Teachers and Other Education Personnel</u> • Unclear roles of teachers in EiE • Lack of training programs for teachers 5. <u>Education Policy</u> • Need to define educational policy and legal framework for DRR with decentralized responsibilities and capacities at all levels • Absence of guidelines on the redesign and retrofitting of school buildings	23. Strengthen community learning centers – equipped with DRRM advocacy material 24. Consider legislation that are DRR-specific to facilitate mainstreaming of DRR funding to build capacity in terms of training needs, etc. • DRRM committee plan to train and educate leaders and to solicit budget for 2014 • Clear roles and functions for each governmental agencies on implementation of DRR • Identify clear funding source for DRR 25. Prioritize skill in identifying and mapping risks in school communities as basis for DRR planning and prioritizing risks 26. Contextualize global DRR/ EiE standards into regional/ national situation • Set up a body to contextualize the regional standards	15. Consultation with other stakeholders such as private/ business sectors to influence them to support EiE and mitigate environmental hazards – as corporate social responsibility

Gaps/Challenges in EiE and DRRM	Recommendations on Regional Strategies and Cooperation Mechanisms	Recommendations on Post-2015
• Need to identify DRR-EiE in the context of armed-conflict or civil unrest • Need to strengthen school community partnerships • Need to solve funding problems • Lack of society awareness • Lack of awareness among government officials • Need for policy to be localized • Need to define education policy level in implementing DRR • Inadequate policy in place to address the national and regional level priority for national/regional levels • Need for government (MOEs) to push “safe school policy” • Difficulty in implementation • Lack of understanding of the DRRM concept/ experience/importance, i.e., how to integrate DRRM into national policies • Need to define the influence of AADMER	27. Identify ways on how expertise/experiences can be shared with other countries (mechanisms), e.g., flu pandemic (SGN), LIZOP (PHL), ADPC (SEAMEO can help elevate or facilitate the learning exchange) 28. Pool of educators to respond to actual disaster scenarios as training ground 29. AHA Response body to be supported by the education cluster 30. SEAMEO to raise EiE in high minister’s meeting 31. Develop education sector’s surge capacity (tapping sector to boost disaster efforts) 32. Research, monitoring and evaluation • Conduct quality research on impact on education • Develop indicators and gather statistics • Collate data on impact on schools, learners, teachers 33. Strengthen advocacy efforts	



Gaps/Challenges in EiE and DRRM	Recommendations on Regional Strategies and Cooperation Mechanisms	Recommendations on Post-2015
• Need to build capacity of policy makers in DRRM concept • Too much time spent on framework plan; lack of implementation action • Need to define or justify grassroots implementation in the absence of national policies • Lack of specific policies on man-made disaster, environmental, impact, etc.	34. Strengthen regional cooperation • Make a case for increasing resource allocation for MOEs DRRM-EiE initiatives/ programs • Establish and maintain database on disaster impact on education • Propose a Ministerial Declaration on Strengthening the DRRM on Education • SEAMES to collate, gather and disseminate information and guide regional advocacy 35. Strengthen external linkages • SEAMEO to engage with Global Alliance for DRR in the education sector • SEAMEO to initiate/ explore/coordinate considerations of HFA1 in education sectors and HFA2 key areas of focus	

Source: Regional Conference on EiE and Disaster Preparedness, 10-12 December 2013, Philippine Department of Education

1.3 Education in Emergencies

Education is a human right that should be enjoyed by all regardless of age, sex, or socio-economic standing. The enjoyment of this right becomes even more critical during times of emergency or disaster where socio-political infrastructure and systems become compromised, if not totally disintegrated.

“The Inter-Agency Network for Education in Emergencies (INEE) is an open global network of practitioners and policymakers working together to ensure all persons the right to quality education and a safe learning environment in emergencies through to recovery.” (INEE 2010)

INEE Minimum Standards for Education: Preparedness, Response, Recovery (2010) is an international resource to help guide post-disaster planning, monitoring and evaluation of education in emergencies (http://www.ineesite.org/index.php/post/inee_minimum_standards_overview/). These were developed and packaged into a handbook to “enhance the quality of educational preparedness, response and recovery, increase access to safe and relevant learning opportunities and ensure accountability in providing these services.”

INEE provides standards and benchmarks in five areas: foundation standards (coordination, community participation and analysis), access and learning environment, teaching and learning, teachers and other education personnel, and education policy (**Figure 5**). These standards are consistent with the integrated approach to school disaster management in the context of both education sector and national disaster management. The standards are organized in the following domains:

Foundational Standards

These standards should be applied across all domains to promote a holistic, quality response. These standards focus on ensuring participation and inclusiveness in the planning, implementation, monitoring and evaluation of EiE programs. The standards cover the areas of *Community Participation*, *Coordination*, and *Analysis*.

Community Participation standards look at processes and activities that describe the state of empowerment which allows collective and informed decision-making to ensure education in emergency. The standard on *coordination* requires that various actors work well together, under the leadership of the education sector, in a timely, transparent, and results-oriented manner with accountability to the affected community. The standards on *analysis* tackles timely assessment of education needs during emergencies and development of appropriate and evidence-based responses.



Access and Learning Environment

Standards in this domain focus on access to safe and relevant learning opportunities. They highlight “critical linkages with other sectors such as health, water and sanitation, nutrition and shelter that help to enhance security, safety and physical, cognitive and psychological well-being” of both learners and teachers.

Teaching and Learning

These standards focus on critical elements that promote effective teaching and learning. They highlight the important benchmarks for curricula; training, professional development and support; instruction and learning processes; and assessment of learning outcomes. These are founded on the premise that a capable teacher and a dynamic educational system will facilitate access to safe and relevant learning for all.

Teachers and Other Education Personnel

Standards in this domain cover administration and management of human resources in the field of education. These standards ensure that recruitment and selection, conditions of service, and supervision and support are made available and implemented in an effective and rational manner.

Education Policy

Standards in this domain focus on policy formulation and enactment; and planning and implementation. The goal is to have local education policy and systems guided by national legislation and policy as well as international agreements and standards.

MINIMUM STANDARDS FOR EDUCATION:

Preparedness, Response and Recovery

Foundational Standards			
Community Participation Standards: Participation and Resources – Coordination Standard: Coordination – Analysis Standards: Assessment, Response Strategy, Monitoring and Evaluation			
Access and Learning Environment	Teaching and Learning	Teachers and Other Education Personnel	Education Policy
Standard 1: Equal Access – All individuals have access to quality and relevant education opportunities.	Standard 1: Curricula – Culturally, socially and linguistically relevant curricula are used to provide formal and non-formal education, appropriate to the particular context and needs of learners.	Standard 1: Recruitment and Selection – A sufficient number of appropriately qualified teachers and other education personnel are recruited through a participatory and transparent process, based on selection criteria reflecting diversity and equity.	Standard 1: Law and Policy Formulation – Education authorities prioritize continuity and recovery of quality education, including free and inclusive access to schooling.
Standard 2: Protection and Well-being – Learning environments are secure and safe, and promote the protection and the psychosocial well-being of learners, teachers and other education personnel.	Standard 2: Training, Professional Development and Support – Teachers and other education personnel receive periodic, relevant and structured training according to needs and circumstances.	Standard 2: Conditions of Work – Teachers and other education personnel have clearly defined conditions of work and are appropriately compensated.	Standard 2: Planning and Implementation – Education activities take into account international and national educational policies, laws, standards and plans and the learning needs of affected populations.
Standard 3: Facilities and Services – Education facilities promote the safety and well-being of learners, teachers and other education personnel and are linked to health, nutrition, psychosocial and protection services.	Standard 3: Instruction and Learning Process – Instruction and learning processes are learner-centered, participatory and inclusive.	Standard 3: Support and Supervision – Support and supervision mechanisms for teachers and other education personnel function effectively.	
	Standard 4: Assessment of Learning Outcomes – Appropriate methods are used to evaluate and validate learning outcomes.		

Figure 5: Minimum Standards for Education: Preparedness, Response and Recovery

Source: INEE Minimum Standards on Education in Emergencies. 2010

The INEE Minimum Standards for Education in Emergencies were used as a framework for succeeding chapters of the toolkit.



CHAPTER 2

INITIATIVES AND INNOVATIONS FOR SAFER SCHOOLS IN SOUTHEAST ASIA

Anchoring on the INEE Minimum Standards for Education (MSE), this chapter will take an in-depth look at the three pillars of the Safe School Framework, namely safe learning facilities, school disaster management, and risk reduction and resilience education. It highlights the role of the education sector in developing school-based solutions or projects that will strengthen the schools' safety in the context of disaster risk reduction and response. The discussion provides basic information on the “how to’s” of implementing activities for each key area ensuring school safety.

Specifically, the chapter includes

- discussion on specific pillars,
- suggested tools, and
- case stories illustrating good practices of school-based DRRM programs or projects and action points.



How Safe is your School?

Before we cast our nets into the vast ocean of discourse on the promotion of disaster resilient school communities, it would be useful to look into our own backyard to determine our present state of safety and preparedness.

We invite you to go through this self-assessment checklist by answering each question with a 'yes' or a 'no'. Assign one (1) point for every YES answer. The total number of points corresponds to your score for this test.

Tool 1: Site Assessment Checklist



PILLAR OF COMPREHENSIVE SAFE SCHOOL	YES	NO
Multi-hazard Assessment - Have all natural hazards posing a threat to schools been identified? - Are these risks assessed periodically? - Are the school population and the local community aware of the risk? - During a hazard event, does the school serve as a shelter? Has it been designed to do so?		
Safe School Buildings - Were the school buildings designed to meet building code standards? - Did (Does) the building code provide guidance on hazard resilient design? - Was the soil tested before the school was built? - Are mechanisms in place to ensure school maintenance is financed and executed? - Are school furnishings and equipment designed and installed to minimize potential harm they might cause to school occupants?		





PILLAR OF COMPREHENSIVE SAFE SCHOOL	YES	NO
School Disaster Management - Does a disaster management committee exist in the school or the local community? - Do natural hazard events regularly create disruptions in the school calendar? - Is there a backup plan to ensure that school operations continue? - Does your school have a disaster preparedness plan? A contingency plan? - Has a safe location been identified if the school must be evacuated? Is the passage to that location also safe? - Are the school population and local community aware of how they can reduce their vulnerability to the damaging impacts of a hazard event? Are they actively taking measures to do so?		
Risk Reduction and Resilience Education - Do students, teachers, staff, and school administrators know what to do before, during and after a hazard event? - Is DRR integrated in your school's curriculum? - Are DRR instructional materials and educational resources available to all students and teachers? - Are drills conducted in your school? - Are there activities conducted outside the classroom setting to promote disaster preparedness and awareness?		

Source: Guidance Notes for Safer School Construction. International Strategy for Disaster Risk Reduction, Inter-Agency Network for Education in Emergencies and the World Bank

What your score means:

14-20 Your school is safe and resilient. In both structural and non-structural aspects, your school is relatively prepared for an emergency.

8-12 Your school is moderately safe but may not be that resilient yet. You need to look into the key aspects which need strengthening.

0-7 Your school is not safe. There is a need to assess your current state, identify gaps and formulate measures to fill them.

Take heart if your school did not make the mark. This toolkit was developed to help schools attain the desired level of safety that provides the springboard for resiliency. These ratings are indicators of the relative status of your school. The state of school safety runs through a spectrum of milestones or set of activities and conditions that need to be achieved to get to the next level.

To help us better understand how to make schools safer, let us look at the different spheres of the Safe School Framework.

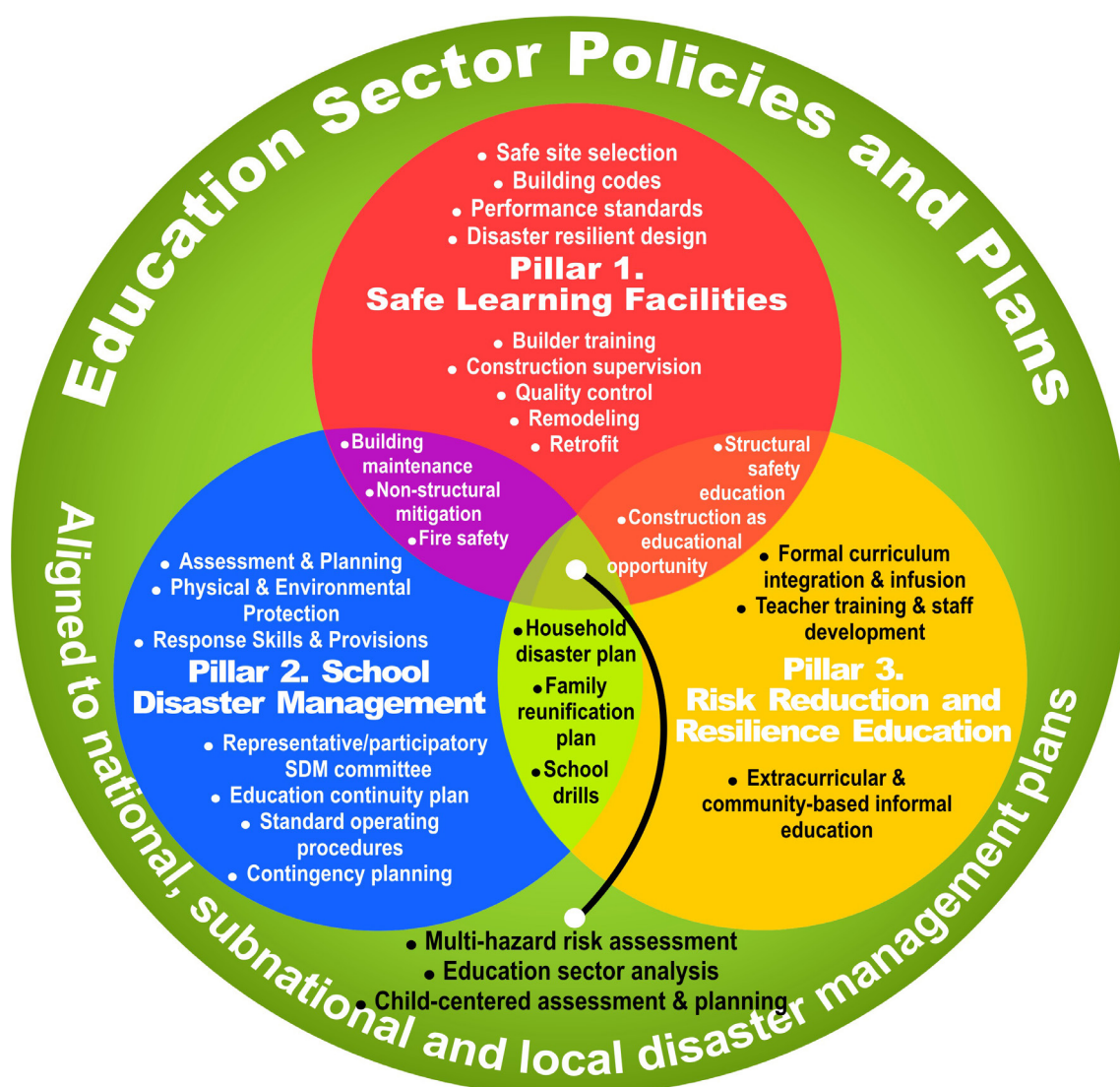


Figure 6: Safe School Framework

Source: Comprehensive School Safety, Save the Children

2.1 Safe School Framework and Education in Emergency Standards

A safe school is at the heart of fostering resiliency. The comprehensive Safe School Framework (**Figure 6**) aims to protect students and school staff during natural and man-made hazards, to ensure continuous access to education even during times of emergency, and to build up disaster resilience among the school community through education.



The education sector is responsible for formulation of policies and development of plans guided by this framework that should be aligned with the disaster management program at the national, regional, district and local school site levels.

Multi-hazard risk assessment is an important element underpinning the planning for Comprehensive School Safety. It provides the necessary evidence to guide identification of needs and formulation and implementation of appropriate programs to fill in the gaps toward school safety.

The following section details each pillar with recommended tools to guide you in applying the concepts. School-based DRRM good practices from SEAMEO Member Countries are interspersed within the discussion as examples from which lessons can be drawn. These serve as guideposts and illustration on how countries in the region can move towards making their schools safe and the school-community disaster-resilient.

2.1.1 Pillar 1: Safe Learning Facilities

The INEE MSE's dimension on **Access and Learning Environment** requires that “learning environments be secure, and promote the protection and mental and emotional well-being of learners. Furthermore, education facilities are to be conducive to the physical well-being of learners.” The indicators stress that the learning environment should be “free from dangers that may cause harm to learners and the learning structure and site be accessible to all, regardless of physical ability.”

The domain includes standards on *Equal Access, Protection and Well-Being, and Facilities and Services*.

The key indicators under the standard on ‘Equal Access’ are as follows:

- Learning structures and sites are accessible to all.
- Sufficient resources are available and ensure continuity, equity and quality of education activities.

The key indicators under the standard on ‘Protection and Well-Being’ are as follows:

- Schools and other learning environments are located in close proximity to the populations they serve.
- Access routes to the learning environment are safe and secure for all.
- The learning environment is free from dangers that may cause harm to learners.
- The community is involved in decisions concerning the location of the learning environment, and in establishing systems and policies to ensure that learners are safe and secure.

The key indicators under the standard on ‘Facilities and Services’ are as follows:

- Learning sites and structures are safe and accessible for all learners, teachers and other education personnel.
- Temporary and permanent learning environments are repaired, retro-fitted or replaced as needed with disaster-resilient design and construction.
- Learning spaces are marked by visible protective boundaries and clear signs.
- Physical structures used for learning sites are appropriate for the situation and include adequate space for classes, administration, recreation and sanitation facilities.
- Class space and seating arrangements meet agreed ratios of space per learner and teacher in order to promote participatory methodologies and learner-centered approaches.
- Community members, including young people, participate in the construction and maintenance of the learning environment.
- Adequate quantities of safe water and appropriate sanitation facilities are provided for personal hygiene and protection, taking into account sex, age and people with disabilities.
- Skills-based health and hygiene education is promoted in the learning environment.
- School-based health and nutrition services are available to address hunger and other barriers to effective learning and development.
- Schools and learning spaces are linked to child protection, health, nutrition, social and psychosocial services.

The pillar of *Safe Learning Facilities* is founded on these standards. It looks into the structural and non-structural aspects of the learning environment, which the school community should strive to establish and maintain.

Structural component

The safety of a school learning rests on both the integrity and durability of the structure and the stability of the site on which it is built. Aside from this, the following are important aspects that contribute to the safety of the school facility:

- ✓ Construction methodology
- ✓ Building configuration
- ✓ Building modifications
- ✓ Structural capacity
- ✓ Structural deterioration

It is vital that the facility where children spend most of their time is structurally sound. The following section details the various aspects of structural safety and suggests ways to assess this.



a) Site Selection/Assessment

It is important to determine whether the environment or area where the school is built (or will be built) is stable and free from possible risks due to hazards. Local building codes require that building site be sanitary, hygienic and safe. For school sites intended for formal education, these should be at a safe distance, free from streams or bodies of water, and source of polluted air. It should also be situated far from a volcanic site or other establishments that could be a potential source of fire or explosion.

In the Philippines, the national Sanitation Code⁵ requires that traffic hazards should also be avoided but with consideration for ensuring accessibility to public transport. The land area shall be large enough to permit playgrounds, athletic fields and school gardens. The layout of the school compound should make provision for open spaces as temporary evacuation sites for earthquake, fire and other emergencies.

b) Adherence to Building Design Standards and Structural Soundness

Local building code and other regulatory issuances should guide the planning and construction of the school building and other ancillary structures intended for formal/informal education.

International consultations have recommended that existing schools be assessed and prioritized for retrofitting to incorporate disaster mitigation, and include features which consider local conditions. The facility should also ensure access for students and staff with disabilities. When using local materials and resources, it is also recommended that minimum standards on safe school building be developed and complied with.

Local building and sanitation codes also entail specifications for the following:

- ✓ requirements of local fire department for prevention of fire hazards
- ✓ sufficient ventilation
- ✓ optimum lighting
- ✓ flooring

⁵ Philippine Sanitation Code, Chapter 6, Section 41



Case Story 1: SMPAPHRSB's Structural Renovations for a Safer School, Brunei Darussalam

In Sekolah Menengah Pengiran Anak Puteri Hj Rashidah Sa'adatol Bolkiah (SMPAPHRSB), a secondary school in Lumut, Brunei, structural renovations were made in areas which pose potential hazards such as laboratories, kitchens, and workshops, and areas with slippery floors or are flood-prone. Emergency routes and assembly areas were identified and proper signage put up for everyone's guidance.

Below is a suggested tool to help you assess the structural soundness of the building and appropriateness of the site of your school (or proposed school):

Tool 2: School Building Safety Checklist



School Building Safety Checklist

Identify any structural safety concerns that may require further investigation. You may need the support of a qualified engineer or architect to undertake this assessment with you. If any of these conditions apply to your buildings, you will need to investigate further with professional engineering help. The structural safety of buildings may be at risk as a result of any of these conditions:

1. LOCATION and SOIL

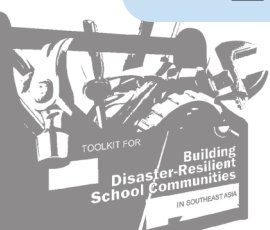
- ☐ Marshy soil
- ☐ On top or next to fault line
- ☐ On a steep slope
- ☐ Below or on a landslide-prone slope
- ☐ In a flood plain or stream bed
- ☐ Soil not compacted prior to construction

2. AGE OF BUILDING and BUILDING CODES

- ☐ Constructed prior to implementation and enforcement of building codes
- ☐ Constructed without regard for compliance with building codes
- ☐ Building codes do not address the hazards you face

3. LOAD CARRYING SYSTEM

- ☐ Reinforced concrete building with discontinuous, uneven, or poorly connected moment frame
- ☐ Masonry, stone, and adobe without an earthquake tie beam
- ☐ Adobe with no horizontal or vertical reinforcement
- ☐ Masonry without regular cross-walls and small window and door openings



4. BUILDING HEIGHT

- ☐ 4+ storey poorly constructed reinforced concrete
- ☐ 2+ storey unreinforced masonry

5. DESIGN

- ☐ Different stories have same height, but have openings of different sizes and locations
- ☐ Different stories have different heights.
- ☐ Very long and narrow rectangular building
- ☐ “L”-shaped, “H”-shaped, “T”-shaped, or cross-shaped building without isolation joints
- ☐ Flood water cannot flow easily through or around the building

6. CONSTRUCTION DETAILING (Reinforced concrete construction)

- ☐ Insufficient or non-overlapping vertical steel in columns and beams
- ☐ Transverse steel not closed 135 degrees
- ☐ Unclean sand and aggregate mixed with concrete
- ☐ Concrete not vibrated to remove air bubbles
- ☐ Roof not securely fastened to structure

7. WATER DAMAGE

- ☐ Rainwater leaks from roof inside the building
- ☐ Interior dampness or smell

Source: School Disaster Management, Save the Children; Education Facilities Manual, Department of Education, Philippines

For areas that are earthquake-prone, below is another suggested tool to help you assess how earthquake-prone your school is.

Self-Check for Earthquake Safety is a 12-point questionnaire that you can use to assess the earthquake readiness of your school.

Tool 3: Self-check for Earthquake Safety



Q	Question	Response	Point
1	Who built or designed my school?	A. Built or designed by a licensed civil engineer/architect.	1
		B. Not built by a licensed civil engineer/architect.	0
		C. It is not clear or unknown.	0
2	How old is my school?	A. Built in or after 1992.	1
		B. Built before 1992.	0
		C. It is not clear or unknown.	0
3.	Has my school been damaged by past earthquakes or other disasters?	A. No or yes but repaired.	1
		B. Yes but not yet repaired.	0
		C. It is not clear or unknown.	0
4.	What is the shape of my school?	A. Regular (symmetrical, rectangular, box-type, simple)	1
		B. Irregular/complicated	0
		C. It is not clear or unknown.	0
5.	Has my school been extended or expanded?	A. No or yes but supervised by a civil engineer/architect	1
		B. Yes, but not supervised by a civil engineer/architect	0
		C. It is not clear or unknown.	0

Q	Question	Response	Point
6.	Are the external walls of my school 6-inch (150 mm) thick concrete hollow blocks (CHB)?	A. Yes, it is 6-inch.	1
		B. No, it is thinner than 6-inch.	0
		C. It is not clear or unknown.	0
7.	Are steel bars of standard size and spacing used in walls?	A. Yes (10 mm diameter, tied and spaced correctly).	1
		B. No, few and smaller than 10 mm.	0
		C. None or unknown.	0
8.	Are there unsupported walls more than 3 meters wide?	A. None, all supported walls are less than 3 m. wide.	1
		B. Yes, at least one unsupported wall is more than 3 m. wide.	0
		C. It is not clear or unknown.	0
9.	What is the gable wall of my school made of?	A. Light materials, properly anchored CHBs, no gabled wall.	1
		B. Not properly anchored CHBs, bricks, stones	0
		C. It is not clear or unknown.	0
10.	What is the foundation of my school?	A. Reinforced concrete	1
		B. Stones or unreinforced concrete.	0
		C. It is not clear or unknown.	0
11.	What is the soil condition under my school?	A. Hard (rock or stiff soil).	1
		B. Soft (muddy or reclaimed)	0
		C. It is not clear or unknown	0
12.	What is the overall condition of my school?	A. Good condition.	1
		B. Poor condition.	0
		C. It is not clear or unknown.	0

Please sum up the points of questions 1 to 12.

Total SCORE	Evaluation and Next steps
11-12 points	Though this seems safe for now, please consult experts for confirmation.
8-10 points	This requires strengthening, please consult experts.
0-7 points	This is disturbing! Please consult experts soon.

Source: Philippine Institute of Volcanology and Seismology (Phivolcs), Japan International Cooperation Agency (JICA) and Rappler

Non- structural component

Non-structural elements refer to the operational processes and systems that support the continuing safety and stability of the facility. Measures that are not connected with the weight-bearing system of the building but concern those that are in the hands of users are equally important aspects of a safe school facility.

- ✓ Repair and maintenance
- ✓ Protect/ alternative supply

Measures to reduce specific hazards are also important components of a safe school facility.

- ✓ Fire Prevention and Safety Measures
- ✓ Provision for Open Spaces as Temporary Evacuation Sites for Earthquake, Fire and other Emergencies
- ✓ Adherence to Building Design Standards and Structural Soundness
- ✓ Provision of Water, Sanitation and Hygiene Facilities
- ✓ Water System and Wastewater Disposal System
- ✓ Road Safety
- ✓ Proper Garbage Disposal



a) Fire Prevention and Safety Measures

Non-structural safety elements also include fire prevention and readily available fire suppression equipment. Special attention is required to make sure that all building occupants can safely exit in case building evacuation is necessary. In case of earthquake and storms, the main considerations are injury prevention both within and immediately outside buildings.



Photos sourced from the internet

b) Water, Sanitation and Hygiene Facilities

Part of a safe learning environment is the provision of water, sanitation and hygiene facilities. The water system and wastewater disposal system should be in compliance with the local regulatory requirements.

Tool 4: Essential Short-Term Measures Required to Protect Health in Schools

Essential short-term measures required to protect health in schools



- ☐ Provide basic sanitation facilities (with separate facilities for boys and girls) that enable school children and staff to go to the toilet without contaminating the school grounds or resources such as water supply. This may entail measures as basic as digging temporary pit toilets, or defining separate defecation and urination areas outside the school, and rotating those areas to avoid a rapid build up of contamination.

Note: The risk of transmission of soil-based helminths increases with the use of defecation fields. Use of shoes or sandals helps to provide protection from hookworm infections.

- ☐ Provide water and soap (or ash) for handwashing after going to the toilet and before handling food. This may be achieved using simple and economical equipment, such as a pitcher of water and a basin.
- ☐ Provide handwashing facilities designed for 10-15 students washing hands in groups (see GIZ prototype).
- ☐ Provide safe drinking water from a protected groundwater source (spring, well or borehole), or from a treated supply, and keep it safe until it is drunk. Untreated water from unprotected sources can be made safer by simple means such as boiling or filtering, or by using simple household water treatment systems (e.g., locally available chlorine solution). School children and staff may have to bring water from home if the school does not have a safe water source nearby.
- ☐ Promote deworming to treat students with common intestinal worm infections. Deworming is easy, cheap, and safe for both infected and non-infected children.
- ☐ Fence the school grounds so that a clean environment can be maintained. Fencing may be made cheaply with local materials.
- ☐ Plan and implement improvements so that adequate conditions for the long term can be achieved as soon as possible.
- ☐ Promote hygiene to increase children's understanding of the importance of hygiene and a clean school environment.

Source: Water, Sanitation and Hygiene Standards for Schools in Low-Cost Settings, WHO, 2009





Case Story 2: Toul Tumpung Primary School's Group Hand Washing and Tooth Brushing Activity, Cambodia

Toul Tumpung Primary School in Cambodia is one of the school beneficiaries of the German Agency for International Cooperation (GIZ) Fit for School program, particularly the 'Group Hand Washing and Tooth Brushing' activity. The initiative aims to raise awareness on health and sanitation among students and teachers as part of preventing epidemics in schools.

The school only had six faucets and one toilet for students. Through the project and with support from Right Smart organization, the school acquired more water and sanitation facilities. The students now have safe water source and sanitary amenities for handwashing and toothbrushing.



Photos by GIZ

c) Proper Garbage Disposal

Local sanitation code dictates the requirements for proper waste disposal in schools. The local government should provide adequate and efficient system of collecting, transporting and disposing refuse. Waste segregation is encouraged and the school administration should ensure provision of appropriate and sufficient receptacles for biodegradable and non-biodegradable wastes. Some schools have even set up their own materials recovery facility.



Case Story 3: Cannosian Convent's Reduce, Reuse, Recycle for a Flood-Free School, Malaysia

In the years 2006 and 2011, Segamat, Johore, Malaysia experienced two big floods that resulted in extensive damage to school property. A study conducted by the Fire Department revealed that clogged drainages and garbage-laden rivers were among the causes of the floods. In response to this finding, the primary school Cannosian Convent developed a campaign to promote awareness on proper waste disposal and integrated waste management in the science subjects in the Grade 6 level. This activity aimed to prevent the improper disposal of plastic waste which would reduce pollution and the risk of flooding.

For one month, the students collected used plastic bags which they placed in special recycle bins. The accumulated amounts of plastic were recorded and these were made into 'smart pillows' which could be used for outdoor activities such as camping. The pillows could also be used in the evacuation centers during floods because they are waterproof and easy to bring around. The campaign included educating students about the need to manage plastic waste in the right way through science and other subjects. The project gave recognition and incentives to the class/es which had collected the most number of used plastic bags.



Tool 5: Hazard Preparedness Checklist



A. Do check that:

- ☐ All classroom doors, doors of high-occupancy rooms, and doors to outside open outwards
- ☐ Exit pathways are kept clear
- ☐ Non-structural building elements are securely fastened to the building to resist wind or earthquake shaking
- ☐ Fire suppression equipment is located appropriately and maintained in good working condition
- ☐ Flammable and combustible materials are limited, isolated, eliminated, and separated, away from dangerous interactions and heat sources
- ☐ Electrical systems are maintained and are not overloaded
- ☐ Classrooms have two exits wherever possible. (Sometimes the second exit is a window.)

B. If you face earthquakes and windstorms:

- ☐ Move heavy items below head level
- ☐ Tightly secure tall and heavy furniture and appliance to walls, floors and ceilings. (e.g., use L-brackets to walls or spring-loaded adjustable tension rods to ceiling or wedges under bottom front, or strip barrier fastened to tabletop, as appropriate)
- ☐ Fasten cabinet doors and drawers with latches that will hold shut during shaking
- ☐ Secure heaters and cooling systems suspended inside or outside of building
- ☐ Fasten liquid propane gas tanks, fire extinguishers and other gas cylinders to the wall
- ☐ Protect glass that may break into large shards (e.g., rearrange furniture, use window film, curtains, or install strengthened glass.)
- ☐ Secure heavy and important electronic items to table top or floor using straps and clips, buckles or velcro
- ☐ Secure lighting fixtures to ceiling

- ☐ Fasten pictures on closed hooks
- ☐ Limit, isolate, eliminate or secure hazardous (poison, flammable) materials

C. And for floods:

- ☐ Locate offices and classrooms above ground level
- ☐ Create suspended shelving high up to store supplies and equipment during rainy season and raise important items above possible flood level
- ☐ Use waterproof containers for storage
- ☐ Limit, isolate, eliminate or secure hazardous (poison, flammable) materials above flood level

Source: RiskRed.Toolkit for School Disaster Resilience and Readiness



Case Story 4: : MIN Jejeran's Risk Mitigation Plan, Indonesia

As part of risk mitigation, vehicles in the school premises of MIN Jejeran (Jejeran State Islamic Elementary School) in Indonesia are parked in an orderly fashion facing towards the exits of the compound for fast and efficient evacuation. The desks in the classrooms are arranged in a manner that will facilitate efficient emergency evacuation. The school management installed fire extinguishers at strategic areas and posted evacuation maps and signages as part of the evacuation plan. They also developed a contingency plan for earthquake and fire that involves the community and stakeholders.





Case Story 5: San Rafael National High School's DRRM Plan with Focus on School Safety, Philippines

San Rafael National High School is located near the boundary of Manila and Navotas in the Philippines. The school community faces risks from floods and biohazards. In response to these hazards, the school developed their DRRM plan with the aim of equipping the students and their parents, teachers, and school staff with the knowledge and skills on disaster preparedness.

Activities include:

- **Safeguarding our Children: An Early Warning, Timely Response Action Guide for Students at Risk**, a core of adopted strategies – this guide was developed to help identify the early warning signs that relate to violence and behaviorial problems, to facilitate recognition, reporting and effective use of the early warning signs, and to develop appropriate action to assist student with disturbing behavior.
- **Recruitment and training of San Rafael Junior Police** – this is an innovation in teaching citizenship, civics and peace education of the school in partnership with the city government of Navotas, the Navotas Philippine National Police and other government partners. The program aimed to organize an auxiliary force called 'Junior Police' at the national high school. The ultimate goal is to give the youth a road map that leads to positive behavior and prevents them from getting involved in crime. The program also intends to have the trainees commit themselves to preserving the peace in the community while acquiring self-discipline in school and the community.
- **Dengue and leptospirosis information campaign** – an intensive information campaign for the prevention of dengue and leptospirosis under the leadership of the local government. The campaign emphasized the importance of cleanliness in and outside their homes, school and community.
- **First Aid training** – conducted for students and teachers.
- **DRRM training for PTA members.**
- **Quarterly fire and earthquake drills.**



Students at SMA N1 Kretek in Indonesia drew graffiti on school walls and inside the classrooms to make the learning environment fun and as a means of reminder to the students about disaster preparedness.



Photo by SEAMEO INNOTECH



Photo by SEAMEO INNOTECH



Photo by SEAMEO INNOTECH

The following tool is a good resource in planning for school safety. The tool incorporates assessment and planning phase (e.g., risk mapping, evacuation plan, hazard mapping, resource mapping) which will be discussed under the School Disaster Management section.

Tool 6: School Disaster Plan



ASSESSMENT & PLANNING	
	We hold a school disaster planning meeting every 12 months. We identify our risks and use this checklist for our planning.
	We identified the safest places in the school and in each room in case of disasters we face (e. g., earthquake: away from windows, large and heavy objects that can fall, and objects like heaters that can cause fire).
	We identified exits and alternative exits from our school and building.
	We searched for and identified hazards in our school (e.g., furniture or equipment that can fall or slide during earthquake or flood) and our environment (e.g., hazardous materials sites).
	We know our out-of-area contact person(s) and phone number(s): (ideally cell phone for text messaging) It's: _____
	We know that we will only use the telephone in case of physical emergency after a disaster. We will use radio and television for information.
	We know where we would reunite Inside the school: _____ Outside the school: _____ Outside the neighborhood: _____ and we have a private message drop location outside our school.
	We made our copies of important documents, and key addresses and phone numbers. We have one set with our out-of-area contact and/or we keep one in our evacuation go-bag.
	We are spreading the word to everyone we know.
	We participate in emergency planning with our community.
	We make our expectations known to local, regional and national policy-makers.

PHYSICAL PROTECTION

For earthquake: We have fastened tall and heavy furniture, appliances, large electronics, lighting fixtures and other items that could kill us or our students, to wall stud or stable surface. For storm: We have shutters or similar window protection

We know never to light a match, lighter, or any other flame after an earthquake until we are sure there is no danger of escaping gas anywhere around.

Our building has been designed and built according to seismic, wind or flood codes, or it has been inspected by a qualified engineer, and required repair or retrofit has been completed.

We maintain our building, protecting it from damp, and repairing damage when it occurs.

For earthquake: We have put latches on cabinets, secured televisions, computers and other electronic items, and hung pictures securely on closed hooks to protect ourselves from things that could injure us, or would be expensive to replace.

We have a fire extinguisher and maintain it once a year.

We have secured school 'heirlooms' and items of cultural value that could be lost to future generations.

We have limited, isolated, and secured any hazardous materials to prevent spill or release.

We keep flashlights with fresh batteries, by our beds. For flood: We keep flotation device or life-jacket on the highest floor in the building. For fire: We have cleared away fire hazards from around our home. For water and debris flow: we have created channels and are prepared to make sandbags.

We have protected ourselves from glass breaking with heavy curtains, window film or shutters.

We consciously reduce, reuse and recycle.



RESPONSE CAPACITY: SKILLS & SUPPLIES

	We know how to use a fire extinguisher.
	We know how to turn off our electricity, water and gas.
	For advanced warning: We understand early warning systems and know how to respond. For earthquake: We have practiced “drop, cover and hold” and identified safest places next to strong low furniture, under strong table, away from windows. If our home is adobe with a heavy roof, we have practiced running out to a clear space.
	We have gathered survival supplies in our home and made up evacuation bags for our school, home and car (including one gallon of water per person per day and food for three days, prescription medications, water, high energy food, flashlight, battery, first aid kit, cash, change of clothing, toiletries and special provisions we need for ourselves, including elderly, disabled, small children, and animals).
	We know principles of incident command systems or similar standard emergency management system for organizing post-disaster self-help in our community.
	We have learned first aid, light search and rescue, fire suppression, wireless communication, swimming, or community disaster volunteer skills.

Source: Seeds of Safety, Save the Children

Risk Reduction Plan

UNICEF defines Disaster Risk Reduction as ‘a systematic approach to identifying, assessing and reducing risks’ posed by hazards. DRR aims to minimize vulnerabilities and disaster risks throughout a school community“ to avoid (prevent) or limit (mitigate and prepare for) the adverse impacts of natural hazards, as well as to facilitate sustainable development.”

When a school community’s capacity to cope with the impact of a hazard is inadequate, disaster results. Measures for mitigation, preparedness and advocacy are key components of a risk reduction plan that is developed based on the results of a comprehensive assessment of hazards, vulnerabilities and capacity.

Below are some basic planning steps in preparing a Risk Reduction Plan.

Step 1. Involve staff, students, and school community in developing and discussing your plan.

Step 2. Based on your risk assessment, consider structural, infrastructural, environmental and non-structural measures identified on your checklists.

Discuss:

- ✓ Who can get affected by these?
- ✓ Where?
- ✓ Why?
- ✓ What can be done to reduce these risks?

Step 3. List the many small steps that you can take to improve your safety. Use the Status Update column to track your progress.

Tool 7: Simple Risk Reduction Plan

Risk	Location of Risk	Affected People/ Group	Activity to Reduce Risk	Person(s) Responsible	Resources Required	Status Update
1.						
2.						
3.						
4.						



The following is an example of school hazard identification conducted by the Bayint Naung Team, School Council at the SHS NO. 1 in Kungyangon, Myanmar:



Case Story 6: Bayint Naung Team, School Council, SHS NO. 1 Kungyangon, Myanmar

Identification of Hazards in the School Vicinity

Hazards and hazardous sites identified in the school vicinity are listed below:

1. There is a main road in front of the school which predisposes students to traffic accidents.
2. The lack of road sign “School area, drive slowly” in the vicinity of the school further increases the risk for traffic accidents.
3. Electric wires are noticed hanging loosely near the wire meshes of windows in the school. This can lead to electrocution and fire in the school.
4. There is a lake in the school compound and children can drown by accident. Precautionary measures need to be put in place.
5. There is a stream 10 yards away from the school and there is possibility of flooding when rainfall is heavy and may affect the school.
6. During and after heavy rains, children can slip on the pavement and in the school compound and get hurt.
7. Broken glass and metal scraps are found among the grass in the school compound, increasing risk of injury among school children.
8. Grasses grow tall around the compound of the school and increases the risk of snake bites.
9. There are large trees around the school compound. These trees or their branches may break during bad weather causing damage to the school and injury to people.
10. Some of the school buildings are disaster-prone and were constructed many years ago.
11. The drains in the school compound are partially blocked and water is stagnant allowing proliferation of mosquitoes.
12. Flies are seen among the food stalls. There is danger that students can get infected from contaminated food.



Case Story 7: Koharagi Junior High School's Project: Altitude Display, Japan

For the students of Koharagi Junior High School in Kesennuma City in Japan, the “Project: Altitude Display ” was an opportunity to educate their fellow students and community members on the level of risks through installation of signs which indicate the approximate elevation of specific points, on telephone poles throughout the school zone. It was also a venue for collaboration between the local residents and the school community which helped strengthen their ties and cooperation.

The students set three major objectives for this project. The first was to simply install the sign above sea level on telephone poles so the disaster response management teams and local people will know the altitude at specific points along the zone. The sign color changes depending on the elevation which serves as an alert for people. The use of color codes helps teach even younger children about the level of elevation and guides their evacuation behavior. The second was to strengthen ties with the community through collaboration with the local residents. The third was to create a tradition of the lessons, so that the prevention behavior will last.

“Being involved in program maintenance will ensure that we never forget the Great East Japan Earthquake” one student pointed out. “In Miyagi Prefecture, we now have an annual ‘Day of Earthquake and Tsunami Disaster Prevention’ every November 5th.”



Here is a set of tools to guide school heads in planning for a safe learning environment.

Tool 8: Administration Office 'Go-Box'



DESCRIPTION	READY	MISSING	INITIALS / DATE
School Disaster and Emergency Plan Binder			
Student Emergency Contact Cards			
First Aid Kit			
Keys			
Megaphone			
Radio and extra batteries			
Flashlight and extra batteries			
Pens / Marking pens			
Notepads			
Staple/staples/paper clips			
Masking tape			
Sheet			
Blanket			
Student prescription medication			

Source: INEE Handbook 2012

Tool 9: School Emergency Supplies Bin



DESCRIPTION	READY	MISSING	INITIALS / DATE
Water (rotated into stocks)			
Mats or blankets (student-supplied)			
Emergency Radio			
Incident Command System necklaces (and vests)			
Soap			
Shovel			
Long-lasting food (rotated into stocks)			
Rope			

Source: INEE Handbook 2012

Tool 10: Classroom 'Go-Bag' or Shelter-in-Place Bucket (for each class)

DESCRIPTION	READY	MISSING	INITIALS / DATE
Current Class Roster			
One (1) clean sheet			
Three (3) marking pens			
Plastic Bags			
Pens			
Notepad			
Supplies for student activities (optional)			



Source: INEE Handbook 2012

Tool 11: Student Comfort Bag

DESCRIPTION	READY	MISSING	INITIALS / DATE
½ l. bottle of drinking water			
One (1) high energy / long life snack			
Whistle and mini flashlight			
Family photo and/or comfort note			



(For each student, supplied by parents where possible; in a sealed or tied plastic bag)

Source: INEE Handbook 2012



2.1.2 Pillar 2: School Disaster Management

The **Foundational Standards** domain of the INEE MSE requires that community members and affected groups participate actively, transparently and without discrimination in analysis, planning, design, implementation, monitoring and evaluation of education responses. It is also important that local community resources are identified, mobilized and used to implement these planned activities both for providing learning opportunities as well as ensuring the safety of learners and teachers.

Specifically, standards under the **Community Participation Standards** include **Participation** and **Resources**.

The key indicators under the standard on ‘Participation’ are as follows:

- The emergency-affected community, through its chosen representatives, is involved in prioritizing and planning education activities to ensure effective delivery of the education program.
- Children and youth are involved in the development and implementation of education activities.

The key indicators under the standard on ‘Resources’ are as follows:

- Communities, education personnel and learners identify education resources in the community.
- Community resources are mobilized to strengthen access to education, protection and the quality of the education program.
- Stakeholders recognize and support the capacity of communities, and education programming is designed to maximize the use of local skills and capacities.

Moreover, **Coordination Standards**, also under the **Foundational Standards** domain, focus on ensuring that “mechanisms for education are in place and support stakeholders working to ensure access to and continuity of quality education.”

The key indicators under the standard on ‘Coordination’ are as follows:

- Education authorities, who are responsible for fulfilling the right to education, assume a leadership role for education response, including convening and participating in coordination mechanisms with other education stakeholders.
- An inter-agency coordination committee coordinates assessment, planning, information management, resource mobilization, capacity development and advocacy.
- A range of levels and types of education are considered in coordination activities.

- Transparent mechanisms for sharing information on the planning and coordination of responses exist within the coordination committee and across coordination groups.
- Joint assessments are carried out to identify capacities and gaps in education response.
- All stakeholders adhere to the principles of equality, transparency, responsibility and accountability to achieve results.
- Transparent mechanisms for sharing information on the planning and coordination of responses exist within the coordination committee and across coordination groups.
- Joint assessments are carried out to identify capacities and gaps in education response.
- All stakeholders adhere to the principles of equality, transparency, responsibility and accountability to achieve results.

Lastly, the **Analysis Standards** of the Foundational Standards domain also require that timely assessment of the education needs during an emergency situation is conducted in a comprehensive and participatory manner. The results of the assessment inform the response, which should include a clear description of the problem and a documented strategy for action. Specifically, standards under the **Analysis Standards** include **Assessment, Response Strategy, Monitoring, and Evaluation**.

The key indicators under the standard on ‘Assessment’ are as follows:

- The assessment analyzes existing and potential threats to the protection of learners, using a structured risk assessment of threats, vulnerabilities and capacities. An initial rapid education assessment is undertaken as soon as possible, taking into account security and safety.
- Core stakeholders are involved in identifying what data need to be collected; in the development, interpretation and refinement of indicators; and in information management and dissemination.
- A comprehensive assessment of education needs and resources for the different levels and types of education, and for all emergency-affected locations, is undertaken with the participation of core stakeholders, and updated on a regular basis.

The key indicators under the standard on ‘Response Strategy’ are as follows:

- Baseline data are collected systematically at the start of a programme.
- Emergency education response strategies reflect a clear understanding of the overall data.
- Education response strategies prioritize the safety and well-being of all children and youth, including those who are vulnerable or have special education needs.



The key indicators under the standard on ‘Monitoring’ are as follows:

- There are effective systems for regular monitoring of education response activities in emergency situations through to recovery.
- Education response activities are monitored to ensure the safety and security of all learners, teachers and other education personnel.
- Vulnerable people are regularly consulted, trained in data collection methodologies and involved in monitoring activities.
- Disaggregated education data are systematically and regularly collected and inform education responses.
- Education data are analyzed and shared at regular intervals with all relevant stakeholders, especially affected communities and vulnerable groups.

The key indicators under the standard on ‘Evaluation’ are as follows:

- Regular evaluations of education response activities produce credible and transparent data and inform future education activities.
- All stakeholders, including representatives of the affected community and education authorities, are involved in evaluation activities.
- Lessons and good practices are widely shared and inform future advocacy, programmes and policies.

The standards under the **Teachers and Other Education Personnel** domain recognize the importance of the participation of teachers and other education personnel in decision-making and their own professional development in the design of an emergency education project.

Processes for identification, recruitment and selection of teachers and other education personnel should be non-discriminatory, participatory and transparent and require gender balance and community representation. Teachers and other education personnel should have relevant experience and skills and should be appropriately compensated. Affected communities should participate in defining the codes of conduct, roles and responsibilities, supervisory mechanisms, conditions of work, contractual arrangements, compensation and working entitlements. The standards also ensure that the rights of teachers and other education personnel to support and guidance, particularly during crisis situations, are protected.

Specifically, standards under the **Teachers and Other Education Personnel** domain include **Recruitment and Selection, Conditions of Work, and Support and Supervision.**

The key indicators under the standard on ‘Recruitment and Selection’ are as follows:

- Clear, appropriate, non-discriminatory job descriptions and guidelines are developed before the recruitment process.
- A representative selection committee selects teachers and other education personnel based on transparent criteria and an assessment of competencies, taking into account community acceptance, gender and diversity.
- The number of teachers and other education personnel recruited and deployed is sufficient to avoid over-sized classes.

The key indicators under the standard on ‘Conditions of Work’ are as follows:

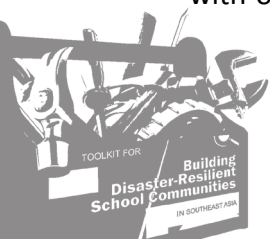
- Compensation systems and conditions of work are coordinated among all relevant stakeholders.
- Compensation and conditions of work are described in contracts, and compensation is provided regularly.
- Teachers and other education personnel are allowed to organize to negotiate terms and conditions.
- A code of conduct, which includes clear implementation guidelines, exists and is well- respected.

The key indicators under the standard on ‘Support and Supervision’ are as follows:

- Adequate teaching and learning materials and space are available.
- Teachers and other education personnel are involved in professional development that contributes to their motivation and support.
- A transparent, accountable supervisory mechanism provides for regular assessment, monitoring and support for teachers and other education personnel.
- Performance appraisals for teachers and other education personnel are conducted, documented and discussed regularly.
- Students regularly have the opportunity to provide feedback on the performance of teachers and other education personnel.
- Appropriate, accessible and practical psychosocial support is available to teachers and other education personnel.

These standards form the bases for the pillar of **School Disaster Management**.

When emergencies happen in school, it is important to have an identified group of people who are responsible for providing a coordinated and effective response to emergency and disaster situations. A **school disaster risk reduction and management group (SDRRMG) or committee** is a school-based organization made up of different school officials and staff, student leaders and community members. The school head or principal is tasked with organizing this group which is responsible for the protection of the health, safety



and well-being of all members of the school community, namely, the faculty, support staff, volunteers, caretakers, and students. The group also ensures that prevention and preparedness systems are in place to minimize the negative impact of disasters.

The group consists of a chair, a vice-chair and different committees with specific functions. The following committees may be identified: supplies, security, communication, transportation, rescue, relief, fire management, damage control, early warning, evacuation, and first aid.

The SDRRMG is tasked with conducting an assessment of the existing hazards in the school and the vulnerability and capacity of the school community. Results of this assessment inform the development of a **school disaster management plan**. The plan ensures that students, teachers and school staff know the necessary action to be taken in the event of a disaster. The plan identifies the students and teachers responsible for specific tasks along with the responsibilities of support actors such as school administrators and health sector staff, for disaster preparedness, response and recovery. The plan also outlines the strategies to communicate DRR messages, the measures and processes for early warning system, and procedures for evacuation.

A school disaster risk reduction management group is important for the coordination of an effective response to emergency and disasters among the members of the school community. The main task is to lead the establishment of prevention and preparedness systems at the school level to minimize the impact of disasters.

The following are important considerations in the SDRRMG formation:

Who should be involved?

- ✓ school officials
- ✓ teachers
- ✓ students
- ✓ community leaders

It is important to match the skills, abilities, talents and interests of the potential members with the committee functions.

What are the functions of the chair and committees under the SDRRMG?

The number of committee seats as well as designated positions in an SDRRMG varies, depending on the school's needs and assets. While there is no one correct model, the following 13 position descriptions provide a starting point for organizing your group (as practiced in the Philippines).

Tool 12: Suggested School Disaster Risk Reduction and Management Group Composition and Function

Chair

- Convenes the SDRRMG.
- Identifies, designates and activates a school DOC.
- Coordinates with the Municipal Disaster Risk Reduction and Management Committee (MDRRMC) and the *Barangay* (Village) Disaster Risk Reduction and Management Committee (BDRRMG) for appropriate support in the event of an evacuation.
- Prepares with teachers and students the school disaster management and contingency plans.
- Maintains an active relationship with the chairpersons of the MDRRMG and BDRRMG.
- With technical assistance from various local agencies, initiates and conducts training in disaster management activities in school.
- Coordinates arrangements for and directs all drills and exercises.
- Exercises command of and responsibility for the implementation of school disaster management and contingency plans.
- Arranges for and supervises the procurement and distribution of required supplies and equipment.
- Directs and supervises evacuation activities during drills and actual disaster situations.

Vice chair

- Performs the functions of the SDRRMG chair in his or her absence.
- Assists the chair in organizing the SDRRMG and defining the roles and responsibilities of each committee member, as appropriate.
- Assists the chair in selecting SDRRMG members and designating various committees deemed necessary in the interest of public safety.
- Performs other functions as may be assigned by the SDRRMG chair from time to time.



Supplies committee

- Assists the SDRRMG chair in procuring and distributing supplies and equipment.
- Identifies where supplies may be found and arranges for pick-up and dispersal.
- Acts as the designated receiver of all supplies and materials.

Security committee

- Organizes the barangay *tanod* (watch guards) and activates their security functions to augment the manpower requirement of the dispatched personnel of the Philippine National Police (PNP).
- Secures evacuees and property in the area of operation.
- Implements and enforces personnel identification and control by checking unauthorized vehicles and persons in cordoned off areas.
- Responds to alarm signals or other suspicious activities, and reports any unusual occurrences to the higher authorities concerned through the SDRRMG chair.
- Performs escort duties in the transport of persons, supplies and equipment.

Communication committee

- Prepares the school communication plan and protocols.
- Using predetermined warning signals, informs the school community of warnings and advisories during the preparatory and evacuation stages.
- Maintains coordination with the Provincial Disaster Risk Reduction and Management Committee (PDRRMC), MDRRMC and BDRRMC communication teams for regular updates on impending threats and advisories.
- Keeps a record of all communication and warning messages.
- Acts appropriately on all communications pertaining to disasters.

Transportation committee

- Conducts an inventory of evacuation vehicles and contacts private vehicle owners to solicit their support in case emergency transport is needed.
- Prepositions evacuation vehicles at the designated pick-up points during the preparedness stage.
- Identifies all available modes of transport in the barangay, municipality and province, and makes use of these options when appropriate.
- Supports the transport needs of the school during emergency operations.

Rescue committee

- Organizes and trains rescue service teams.
- Seeks training support in coordination with the public school district supervisor (PSDS) and School Division Superintendent (SDS), Red Cross (RC), Bureau of Fire Protection (BFP), or Office of Civil Defense (OCD).
- Requests budget appropriation to support training requirements.
- Where there are mass casualties, conducts search, rescue and recovery operations in school.
- Coordinates for emergency vehicle assistance (e.g., ambulances).
- Ensures that members of the rescue service teams are skilled in first aid and life-saving techniques.

Relief committee

- Coordinates with the Municipal Social Welfare and Development Office (MSWDO) for relief assistance.
- Assists in organizing and facilitating the preparation and distribution of relief goods.
- Receives relief donations such as canned food, clothing, medicines, household utensils, equipment needed for emergency operations and materials for temporary shelters.
- Assists the BDRRMC chair in preparing relief status reports for submission to the MDRRMC.

Fire management committee

- Organizes the fire brigade team.
- Coordinates with higher education authorities and the BFP for technical assistance in the conduct of training for the organized fire brigades.
- Provides firefighting instruction through available sources, such as local fire departments.
- Ensures that firefighters know their stations, alarm signals and the locations of firefighting equipment in their area of responsibility.
- Deploys firefighting personnel to areas where there are outbreaks of fire to extinguish or contain fire while awaiting the arrival of regular firefighting forces.
- Provides firefighting personnel with a ready supply of water.
- Works closely with the teaching and non-teaching staff, students and parents on matters of fire control and prevention.



Damage control committee

- Develops damage control plans specific to each anticipated hazard.
- Deploys appropriate personnel after any disaster to restore damaged utilities or report conditions that require outside assistance.
- Conducts school clearing after the calamity.
- Supervises the clearing of clogged waterways or canals.
- Maintains the physical facilities of evacuation centers and conducts damage assessments in the affected areas.

Early warning committee

- Prepares the official school warning plan and system.
- Performs observation of potential hazards and monitors these conditions.
- Reports observations to the SDRRMG chair for analysis and the issuance of appropriate advisories.
- Confers with the SDRRMG chair regarding real-time observations of hazards that may require a preparatory advisory or an evacuation movement.

Evacuation committee

- Develops and continuously reviews the school evacuation plan.
- Makes sure designated safe holding areas are always kept ready to accommodate students in case of an emergency.
- In coordination with higher education authorities, prepares evacuation centers to handle internally displaced persons.
- In coordination with the transportation committee, determines safe evacuation routes.
- Leads teachers and students to safe holding areas during emergencies.

First aid committee

- Prepares a medical kit for the school evacuation center.
- Coordinates with the Department of Health (DOH), Red Cross, and other health agencies for first aid and medical self-help training.
- Directs first aid operations and health services, and controls access to medical supplies.
- Ensures the safe storage and handling of food and drinking water at the evacuation center.
- Maintains adequate sanitation and hygiene standards within the evacuation center.

Source: Save the Children. Nurturing Safe Schools. Manila, 2010



Case Story 8: Sekolah Menengah Pengiran Anak Puteri Hjh Rashidah Sa'adatul Bolkiah's "We Care" Programme, Brunei Darussalam

The Sekolah Menengah Pengiran Anak Puteri Hjh Rashidah Sa'adatul Bolkiah (SMPAPHRSB), a secondary school in Lumut, Brunei, has an extensive disaster preparedness programme. While the school has not experienced any disaster, its "We Care" for safety programme endeavors to increase awareness among students, teachers, school staff and the immediate community on the importance of safety and security and the capacity for responsible and efficient action in preparation for and response to a disaster.

The school established a school-based disaster management committee (SBDMC), which reviewed the strengths and weaknesses, of both the DRM action plans and the school's structural features. The results of the review formed the basis of a long-term safety awareness programme and the planned renovation of the school building and compound. The SBDMC consists of teachers, staff and students who were trained by the national disaster management agency. The committee is responsible for training others in the next phase of the project.

The SBDMC conducted fire and emergency drills and other training sessions on health and safety for teachers and student leaders. They networked with the National Disaster Management Centre (NDMC), police department, fire department and health department for the required technical resource.

To facilitate child-centered disaster risk reduction, student DRR (SDRR) and Emergency Response Teams (ERT) can be formed with the support of teachers and SDRRMG members. These SDRR and ERT can assist the SDRRMG and other school staff in leading safety and security actions during times of emergency.



Case Story 9: Daraga National High School's Emergency Response Teams, Philippines

The DRR program of Daraga National High School in Daraga, Bicol in the Philippines facilitated the creation of the Bulilit Emergency Response Teams (BERT), Students Emergency Response Teams (SERT), and Teachers Emergency Response Teams (TERT). Students from each year level elected their own BERT and SERT officers. These teams are key groups tasked with responding to emergency situations in the school, such as providing first aid treatment. During drills, they also act as the lead facilitators.





Photos by Daraga National High School

Figure 7: Bulilit Emergency Response Team



Case Story 10: Abellana National High School's Rescue Group, Philippines

A school-based rescue unit was established in the Secondary School of Abellana National High School in the Philippines in 2003 as a result of a shooting accident that left a student dead. The incident made a significant impact on a member of the school faculty who initiated the formation of the rescue organization which aims to reduce fatalities during disasters and emergencies. Strategies include information dissemination, training and partnership with other relevant government agencies.

The Abellana National School Rescue Group Inc. conducts two-day disaster preparedness training for youths in the barangays (villages) of Cebu City as part of their project which was initiated in June 2011 and continues up to the present. They train the youth on basic first aid, basic life support, basic rope techniques, basic firefighting and emergency rescue and transport.

The Rescue Group partners with the Bureau of Fire Protection during fire rescue demonstration for different establishments and companies and during Fire Prevention Month. They also assist the firefighters in fire suppression, assisting evacuees and provision of medical services.

What activities can be undertaken by an SDRRMG?

Once organized, the SDRRMG conducts a risk assessment to identify potential source of risks from relevant hazards to which the school community is exposed.

The results of the assessment will inform the development of the School Disaster Management Plan. This includes a detailed explanation of strategies for early warning, communication and evacuation procedures.

The group should also designate an area of the school where the committees could meet during normal times and to convene during an emergency or a disaster to plan for and take action according to their respective functions. This will serve as the Disaster Operations Center.

Other functions of the group include networking with other Disaster Management groups at the national and sub-national level to ensure inclusion of the school in the disaster management plans at these levels. The group would also be involved in capacity building activities on DRR and communicating DRR information to students and other members of the school community.

“I believe that we were able to overcome the AH1N1 outbreak because of teamwork—it is the main quality of our school that worked. Under the leadership of our principal, we formed a task force that screened the students’ body temperature and encouraged the use of face masks and hand sanitizers. Students with body temperature exceeding 38 degrees were sent to the nearest clinic to be quarantined. The screening was done every morning until the Ministry declared that the epidemic was over.”

Saiful, Teacher at the SMPAPHRSB, Brunei





Case Story 11: State High School No. 1 Kungyangon's School Disaster Management Committee, Myanmar

The State High School No. 1 Kungyangon in Myanmar developed its School Disaster Management Plan (SDMP) through the collaboration of the school's Board of Trustees, the Parent-Teacher Association members, the district and township level administrative authorities, school council members, teachers and students. The plan, which aimed to promote DRR in school, was written in a simple way to facilitate ease of understanding and acceptance by concerned members of the school and community.

In order to make SDMP sustainable and achieve long term benefits, DRR education activities are incorporated in the School Activities Calendar. Activities included in the School Disaster Management Plan (SDMP):

1. Formation of School Disaster Management Committee (SDMC)
2. Preparation of the School Disaster Management Plan
3. Activities to raise awareness on natural disasters among students, teachers, parents and communities
4. Identification of risk factors and resources in the school by students and teachers
5. DRR education orientation for SDMC members
6. Organizing disaster preparedness and response activities
7. Sharing of the plan with local authorities, community leaders and practice DRR activities frequently
8. Preparation of a map (risk and resource map) to show possible types of disaster that can affect the school and community and existing risk factors and another to show where to get assistance in case of disaster to minimize loss
9. Monitoring, evaluation and improvement of all the SDMP activities mentioned above

The SDMC has three sub-committees: 1) sub-committee for planning and assigning tasks, 2) for disaster risk assessment, and 3) for resource mobilization. Under these sub-committees, emergency teams are formed with members consisting of school staff and students. These teams implement activities according to the SDMP under the supervision and guidance of the SDMC. The Emergency Teams are categorized as Early Warning team, Evacuation Team, Search and Rescue Team, Relief, Resettlement and Rehabilitation Team, and Health Care Team. Each team has well-defined tasks and responsibilities during the pre-, during and post-disaster phase.

LANGKAH-LANGKAH PEMETAAN RISIKO

1. MENENTUKAN DAERAH BERBAHAYA

Daerah yang beresiko secara alamiah atau karena aktivitas manusia adalah daerah yang mempunyai ancaman bencana alam. Menentukan daerah beresiko perlu memperhatikan karakteristik daerah yang beresiko, ancaman yang ada, dan kemampuan masyarakat untuk menghadapi ancaman tersebut.

2. MENENTUKAN DAERAH BERBAHAYA

Daerah beresiko adalah daerah yang mempunyai ancaman bencana alam. Menentukan daerah beresiko perlu memperhatikan karakteristik daerah yang beresiko, ancaman yang ada, dan kemampuan masyarakat untuk menghadapi ancaman tersebut.

3. MENENTUKAN DAERAH BERBAHAYA

Daerah beresiko adalah daerah yang mempunyai ancaman bencana alam. Menentukan daerah beresiko perlu memperhatikan karakteristik daerah yang beresiko, ancaman yang ada, dan kemampuan masyarakat untuk menghadapi ancaman tersebut.

Ruang pertemuan
kampung besar

Kawasan hutan yang
dibakar untuk lahan

Daerah rawan bencana
karena banjir

Aktivitas pertanian
di daerah banjir

Kemudahan akses
ke lokasi bencana

Kemudahan akses
ke lokasi bencana

Kemudahan akses
ke lokasi bencana

Kemudahan akses
ke lokasi bencana

Kemudahan akses
ke lokasi bencana

Kemudahan akses
ke lokasi bencana

Kemudahan akses
ke lokasi bencana

Kemudahan akses
ke lokasi bencana

EARTHQUAKE EVACUATION ROUTE AND HAZARD MAP

D.O. LIWAG NATIONAL HIGH SCHOOL

Ito. Domingo, Vinzons, Cam. Norte

Legend :

- Evacuation Room
- Non-Evacuation Room
- For Improvement
- Earthquake Prone
- Electrical Hazard
- Chemical Hazard
- Fire Prone
- Accident Prone
- Flood Prone
- Animal and Insect Bite

2. Resource map

The resources available within the school and immediate surroundings are plotted out in a resource map. This provides important information on the source of assistance for the students, teachers and school staff before, during and after a disaster.

3. Evacuation plan

An integral component of an evacuation plan is the clearly identified safe evacuation sites, whether on-campus or off-campus, where the school population may converge in cases of emergencies that would require evacuation (e.g., fire, earthquake, bomb threat, etc.). The plan also includes establishing appropriate evacuation routes, identifying and assigning emergency focal persons within the school community, and creating a set of clear evacuation guidelines. The guidelines should be able to describe the necessary procedures to be undertaken during evacuation. A list of contact numbers of relevant government agencies or institutions (e.g., fire department, police department, hospitals, churches, etc.) should also be prepared.



Case Story 12: SMP Negeri 2 Imogiri's Disaster Preparedness Activities, Indonesia

SMP Negeri 2 Imogiri in Indonesia, a school situated about a kilometer away from the epicenter of the devastating 2006 earthquake, is an example of a program conceptualized as a result of the disaster. The local government initiated the development of the school's Disaster Preparedness Plan which considered not just risks from earthquake but other natural disasters such as flood, landslide, fire, and hurricane.

Teachers, students and the school staff attended a DRR training after which participants were mobilized to comprise the Disaster Emergency Preparedness Team. The team crafted an evacuation plan which includes a map showing the emergency exits and safe passageway around the school building and compound. They also conduct simulation drills and regular workshops on DRR to keep everyone's knowledge and skills fresh and updated.

Tool 13: Evacuation Procedures



On-Campus Evacuation

The need to evacuate a building on campus should occur after the decision has been made that it is unsafe to remain in the building.

- ☐ If it is determined an evacuation is needed, school staff should assemble students and use the pre-designated evacuation routes to report to the assigned on-campus location.
- ☐ School staff must conduct a roll call at the evacuation area to ensure that all students are accounted for.
- ☐ Students who are missing or left behind due to serious injury should be immediately reported to school officials.
- ☐ School staff should identify any students who need medical attention and provide appropriate care.
- ☐ School staff should remain with their students and help to calm them.
- ☐ If it is determined school buildings are safe to re-enter, school staff will lead students back to their classrooms quickly and calmly. A roll call should be conducted once all students are back in the room.
- ☐ Students should be debriefed to calm fears about the evacuation (see Tool 23: Conversation Guide for Debriefing).

Off-Campus Evacuation

- ☐ Off-campus evacuation is implemented after a decision is made that it is unsafe to remain on campus and evacuation to an off-site assembly area is required.
- ☐ If it is determined an evacuation is needed, school staff should assemble students and use the pre-designated evacuation routes to report to the assigned off-campus location.
- ☐ School staff must conduct a roll call at the evacuation location to ensure that account is made for all students.
- ☐ Students who are missing or left behind due to serious injury should be immediately reported to school officials.
- ☐ The Superintendent of Schools should be immediately notified of the evacuation.

Source: Adapted from the San Francisco Unified School District School Site Emergency Plan





Figure 10: Evacuation Map of SMA Negeri 1 Kretek, Indonesia



Figure 11: Evacuation Map of SMP Negeri 2 Imogiri, Indonesia

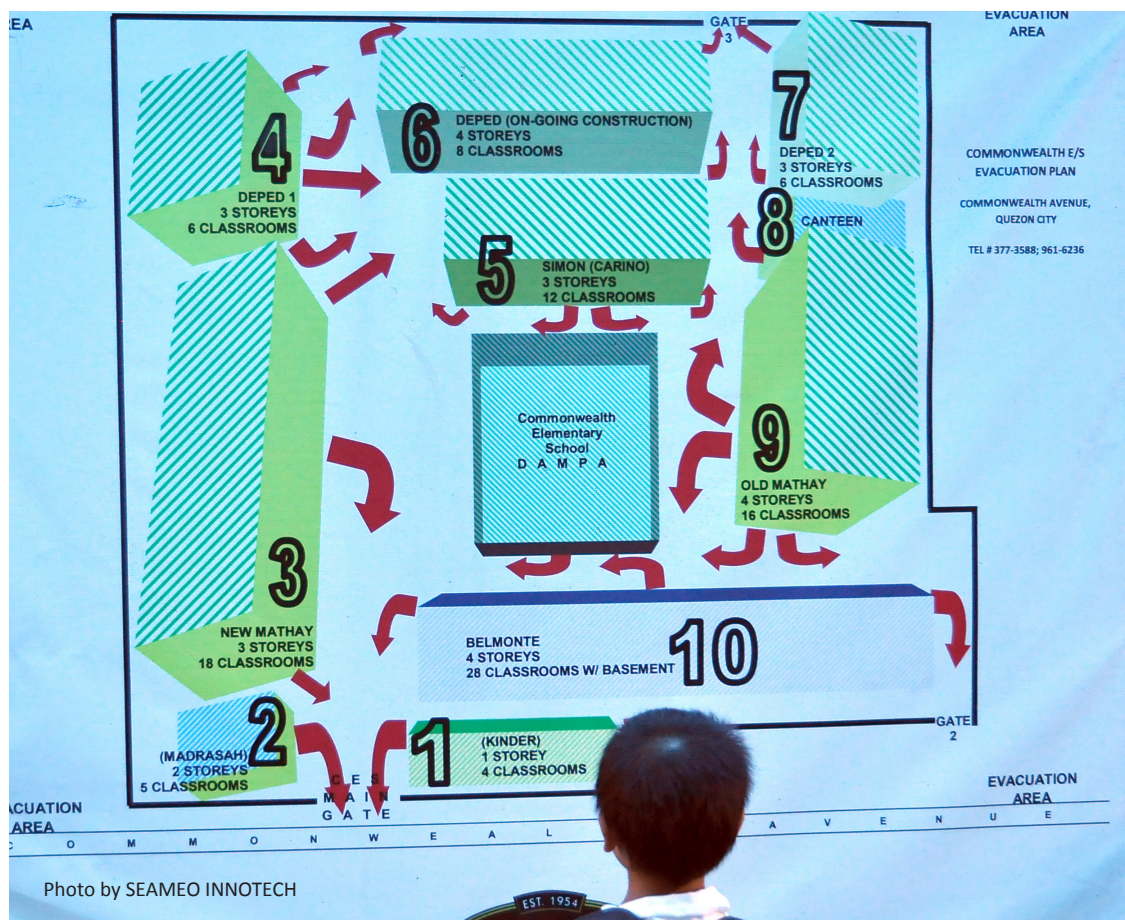


Figure 12: Evacuation Map of Commonwealth Elementary School, Philippines

4. School Resiliency Plan which is integrated in the School Improvement Plan (SIP)

The above-mentioned outputs can form part of the overall School Resiliency Plan (SRP). The SRP, which identifies the activities that are important before, during and after a disaster, should be incorporated in the School Improvement Plan to ensure needed resources are allocated for the completion and/or sustainability of the SRP.



Case Story 13: Prek Taroat Primary School and Bakheng Primary School's Children's Council, Cambodia

Prek Taroat Primary School and Bakheng Primary School are located in the suburbs of Phnom Pehn City, along Tonle Sap Lake in Cambodia. These schools experience floods which expose the students, teachers and staff to risk of drowning and biohazards such as water-borne diseases. To enhance their capacity for disaster risk reduction and preparedness, the schools developed their DRR Programs. An important component is the formation of Children Councils, which are actively involved in conducting hazard vulnerability and capacity assessment (HVCA) and in the development of the DRR plan. The program employs child-to-child approach to raise awareness on DRR and to promote hygiene and sanitation.

The School Support Committee for DRR, which consists of the School Director, teacher coordinator and representative from the District Office of the Ministry of Education, Youth and Sports (MOEYS), holds quarterly meetings to assess the implementation of the DRR plan.

As a result, there is an increased level of understanding of DRR concepts and measures for preparedness and response among the students and teachers. Cleaner school environments and improved hygiene and sanitation behaviour among the students are also achieved. The child's rights approach of the programme activities has also resulted in the teachers' improved recognition of the need for and practice of the proper way to interact with the students.

“The School Disaster Risk Reduction Management Committee works hand-in-hand with the Barangay (Village) Disaster Risk Reduction Committee in formulating strategies and plans to effectively and efficiently respond to various hazards that may confront the community. This collaboration becomes a solid assurance among the students to make them feel confident and secured since they know that everybody is working together to ensure everyone's safety.”

Principal of Lomopog Elementary School
Lomopog, North Cotabato, Philippines

Tool 14: School Disaster Readiness and Resilience Checklist

Here is a suggested checklist which may be used to guide the assessment, planning and implementation of activities to ensure a school's readiness and resilience.



School _____ Date _____

1. Ongoing committee guides the school disaster management process.

- ☐ An ongoing committee is tasked with leading school disaster management on an ongoing basis.
- ☐ School disaster management has the full support of school leadership.
- ☐ School disaster management committee takes lead in ongoing planning for prevention, mitigation, response and recovery.
- ☐ School disaster and emergency management plan is reviewed and updated at least annually.

2. Assessment and Planning for Disaster Mitigation takes place continuously.

- ☐ Hazards, vulnerabilities, risks, capacities and resources are researched and assessed.
- ☐ Mitigation measures are identified and prioritized for action.
- ☐ Building evacuation routes and safe assembly areas are identified.
- ☐ Area evacuation and safe havens for family reunification are identified, as needed.
- ☐ Educational continuity plans are in place for recurring hazards and high impact hazards (including alternate locations and transitional learning spaces as needed).

3. Physical protection measures are taken to protect students and staff and facilities.

- ☐ School buildings and grounds are maintained and repaired for disaster resilience (e.g., against moisture, termites, fungus).
- ☐ Fire prevention and fire suppression measures are maintained and checked regularly.
- ☐ Safety measures related to building non-structural elements, furnishings and equipment are taken to protect students and staff from hazards within the building (especially due to earthquakes, severe weather etc.).
- ☐ Measures are taken to protect equipment and materials from wind and water damage (from floods, storms).



- ☐ School infrastructure, including access routes, shelters and safe havens are developed as needed and maintained for safety.
- ☐ Crime, vandalism, and bullying prevention measures are maintained and students and staff feel safe and secure on school premises.
- ☐ Measures are taken to provide clean drinking water, food security, drought and hazardous materials protection (e.g., rainwater harvesting, school gardens, solid waste management, erosion prevention).

4. School personnel have disaster and emergency response skills and school has emergency provisions.

- ☐ School personnel are ready to organize disaster response using a standard emergency management system (e.g., incident command systems).
- ☐ School personnel receive training in a range of response skills including, as necessary: building and area evacuation, first aid, light search and rescue, student supervision, shelter, nutrition and sanitation.
- ☐ School maintains first aid supplies.
- ☐ School maintains fire suppression equipment.
- ☐ School maintains emergency water, nutrition and shelter supplies to support expected staff and students for a minimum of 72 hours.

5. Schools have and practice policies and procedures for disasters and emergencies.

- ☐ Policies and standard operating procedures are adopted to address all known hazards.
- ☐ Standard operating procedures include: building evacuation and assembly, evacuation to safe haven, shelter-in-place, lockdown, and family reunification procedures.
- ☐ School has identified the safe assembly and everyone knows how to go there after building evacuation.
- ☐ School personnel have and practice procedures to ensure safe student reunification with emergency contacts identified in advance by parents or guardians.
- ☐ School drills are held at least twice yearly to practice and improve upon disaster mitigation and preparedness skills and plans. One of these drills is a full scenario drill to practice response preparedness⁶.

Source: Seeds of Safety, Save the Children, 2013

⁶ Risk RED, 2012.

2.1.3 Pillar 3: Risk Reduction and Resilience Education

All individuals should have access to quality and relevant education opportunities, even in times of emergency. The INEE MSE'S domain on **Access and Learning Environment** requires that there be a promotion of the protection and psychosocial well-being of learners, teachers and school personnel.

With specific focus on the **Equal Access** standard under this domain, the key indicators include:

- No individual is denied access to education and learning opportunities because of discrimination.
- A range of formal and non-formal education opportunities is progressively provided to the affected population to fulfill their education need.
- Through training and sensitization, communities become increasingly involved in ensuring the rights of all members to a quality and relevant education.

The **Teaching and Learning** domain, on the other hand, requires the use of culturally, socially and linguistically relevant curricula to provide formal and non-formal education appropriate to the particular context and needs of learners. Instruction and learning processes should also be learner-centered, participatory and inclusive. Teachers and other education personnel should also receive periodic, relevant and structured training according to their needs and circumstances. Under this domain, standards provide guidance to ensure that instruction and learning processes are learner-centered, participatory and inclusive and that appropriate methods are used to evaluate and validate learning outcomes.

The domain includes standards on *Curricula, Training, Professional Development and Support, Instruction and Learning Process, and Assessment of Learning Outcomes*.

The key indicators under the standard on 'Curricula' are as follows:

- Existing curricula are reviewed for appropriateness to the age or developmental level, language, culture, capacities and needs of the learners affected by the emergency. Curricula are used, adapted or enriched as necessary.
- Where curriculum development or adaptation is required, it is conducted with the meaningful participation of stakeholders and considers the best interests and needs of the learners.
- Curricula address life skills, literacy, numeracy and core competencies of basic education relevant to given stages of an emergency.



- Curricula address the psychosocial well-being needs of teachers and learners in order for them to be better able to cope with life during and after the emergency.
- Learning content, materials and instruction are provided in the language(s) of the learners and the teachers, especially in the early years of learning.
- Curricula and methods of instruction respond to the current needs of learners and promote future learning opportunities.
- Curricula and instructional materials are gender-sensitive, recognize diversity and promote respect for learners.
- Sufficient teaching and learning materials are provided, as needed, in a timely manner to support relevant education activities. Preference is given to locally available materials for sustainability.

The key indicators under the standard on ‘Training, Professional Development and Support’ are as follows:

- Training opportunities are available to male and female teachers and other educational personnel, according to needs.
- Training is appropriate to the context and reflects learning objectives and content.
- Training is recognized and approved by relevant education authorities.
- Qualified trainers conduct training courses that complement in-service training, support, guidance, monitoring, and classroom supervision.
- Through training and ongoing support, teachers become effective facilitators in the learning environment, using participatory methods of teaching and teaching aids.
- Training includes knowledge and skills for formal and non-formal curricula, including hazard awareness, disaster risk reduction, and conflict prevention.

The key indicators under the standard on ‘Instruction and Learning Process’ are as follows:

- Teaching methods are appropriate to the age, developmental level, language, culture, capacities, and needs of learners.
- Teachers demonstrate an understanding of lesson content and teaching skills in their interaction with learners.
- Instruction and learning processes address the needs of all learners, including those with disabilities, by promoting inclusiveness and reducing barriers to learning.
- Parents and community leaders understand and accept the learning content and teaching methods used.

The key indicators under the standard on ‘Assessment of Learning Outcomes’ are as follows:

- Continuous assessment and evaluation of learners’ progress towards established objectives inform teaching methods.
- Learners’ achievement is recognized and credits or course completion documents are provided accordingly.
- Assessment and evaluation methods are considered fair, reliable, and non-threatening to learners.
- Assessments are relevant to learners’ future educational and economic needs.

The **Education Policy** domain centers on the importance of having emergency education programmes founded on national and international education policy. This domain requires that emergency education plan take into account national and international educational standards and policies, demonstrate commitment to the right to education; demonstrate responsiveness to the learning needs and rights of people affected by crisis; and include steps to ensure access to quality education for everyone.

The domain includes standards on *Law and Policy Formulation*, and *Planning and Implementation*.

The key indicators under the standard on ‘Law and Policy Formulation’ are as follows:

- National education laws, regulations and policies respect, protect and fulfill the right to education and ensure continuity of education.
- Laws, regulations and policies ensure that every education facility rebuilt or replaced is safe.
- Laws, regulations and policies are based on an analysis of the context that is developed through participatory and inclusive processes.
- National education policies are supported with action plans, laws and budgets that allow a quick response to emergency situations.

The key indicators under the standard on ‘Planning and Implementation’ are as follows:

- Formal and non-formal education programmes reflect international and national legal frameworks and policies.
- Planning and implementation of educational activities are integrated with other emergency response sectors.
- Emergency education programmes are linked to national education plans and strategies and are integrated into longer-term development of the education sector.



- Education authorities develop and implement national and local education plans that prepare for and respond to future and current emergencies.
- Financial, technical, material and human resources are sufficient for effective and transparent development of education policy, and for planning and implementation of education programmes.

These standards guide the component of **Risk Reduction and Resilience Education**.

An important aspect of school safety is the non-structural component which focuses on ensuring adequate and appropriate knowledge, attitude and skills of students, teachers and school staff for disaster preparedness and response.

The integration of DRR concepts and messages in the school curriculum facilitates learning and teaching in a holistic manner and provides opportunity for application of learning in real-life situations during emergency. DRR instructional materials can complement the communication of DRR concepts and preventive measures to the students.

Engaging students in extra-curricular activities can supplement the learning gained inside the classroom. Opportunities for hands-on learning both in and out of the classroom are a sure way of making children understand, appreciate, practice and retain DRR information.

Communication campaigns which target community members are also important part of this school safety element. Such campaigns aim to raise awareness on DRR among parents, care givers, community leaders and other sectoral representatives.

Integration of DRR in the school curriculum

Integrating DRR in the school curriculum requires a higher level of commitment and coordination – from the national government to regional or local levels – not only among agencies involved in the education sector but also with agencies involved in disaster risk reduction and management – and down to the school level. Incorporating DRR themes in the daily lesson plans of various subjects is an effective way of ensuring that students will understand and appreciate the concepts of risk mitigation and disaster preparedness and response. Following are recommended steps on how to facilitate this process.

Tool 15: Recommended Steps in Integrating DRR in School Curriculum

Recommended steps for DRR integration in the curriculum:



- Step 1:** Formulation of legislation at the national level that requires mainstreaming of DRR in school curriculum. There should be accompanying compliance and accountability process.
- Step 2:** Adoption of a clear policy for mainstreaming DRR in the school curriculum and proper communication within the education ministry and to other government agencies with corresponding allocation of resources
- Step 3:** Establishment of a multi-sectoral committee (or equivalent) with clear mandates, authority, mechanisms and resources to lead in the mainstreaming of DRR in the school curriculum.
- Step 4:** Integration of DRR in the school curriculum during the regular curriculum review and development cycle (and eventual institutionalization as part of the national curriculum development process).
- Step 5:** Development of accurate and adequate instructional materials integrating DRR and approval by relevant authorities.
- Step 6:** Training of teachers and relevant education personnel on teaching DRR as part of the school curriculum
- Step 7:** Progressive assessment of learning outcomes to ensure that DRR-related curricular changes are adapted to current and actual needs.

Source: Towards a Learning Culture of Safety and Resilience – PILOT Version

UNESCO suggests the following tool for curriculum developers be used as a baseline study exercise or at various points in the DRR curriculum development process. Principals and teacher trainers may also use this exercise for DRR curriculum awareness training with teachers.



The Five DRR Dimensions in the Curriculum

The checklist below can be employed as a framework for curriculum review and development purposes as follows:

- Exploring current DRR provision according to the five dimensions across the whole curriculum.
- Exploring current DRR provision according to the five dimensions in the curriculum of particular subjects.
- Checking the weights given to each dimension in successive drafts of curriculum during development.

Process:

1. Participants form small groups perhaps arranged by subject(s) or grade(s);
2. They are given a handout explaining the five dimensions together with copies of relevant curricula;
3. Groups copy the checklist on to a large sheet of chart paper;
4. They examine the degree to which each dimension is addressed in the subject(s) or grade(s) in question;
5. Having determined the degree, they tick the appropriate box and write in bullet point notes on where and how in the curriculum the DRR dimension is being addressed;
6. Using a marker pen of a different color, they make a bullet list of ideas on how the treatment of each dimension might be improved and/or increased by filling in all boxes to the right of the one initially completed (e.g., if they have checked 'Hardly at all,' they write in suggestions on how the dimension might be 'Somewhat' or 'Strongly' addressed;
7. Each group presents its work; and
8. General discussion follows reviewing findings and determining entry points and priorities for DRR curriculum development.

Tool 16: Five Dimensions of DRR: Curriculum Checklist



DRR Dimensions	Hardly at all	Somewhat	Strongly
Dimension 1: Understanding Mechanisms			
Dimension 2: Becoming Safety Wise			
Dimension 3 : Understanding Risk Drivers and How Hazards Can Become Disasters			
Dimension 4: Building Community Risk Reduction Capacity			
Dimension 5: Building an Institutional Culture of Safety and Resilience			

Source: Towards a Learning Culture of Safety and Resilience – PILOT Version

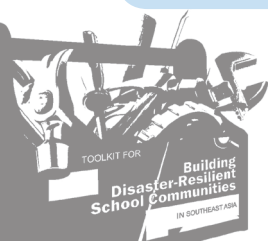
Moreover, the following checklist will further help in ensuring that all relevant considerations were carefully examined in integrating DRR in the curriculum.

Tool 17: Factors to be Considered in Integrating Disaster Risk Reduction in the Curriculum



- ☐ Are *legal/regulatory mechanisms* and *educational policies* in place to enable the mainstreaming of DRR curricula?
- ☐ Is DRR curriculum development working in step with the national cycle of *curriculum review and revision*?
- ☐ Is ongoing *textbook and learning materials development* happening to widen, deepen and further systematize integration of DRR curricula and effect qualitative improvement across the DRR provision?
- ☐ Are the means in place to ensure textbooks contribute to the *participatory learning* that DRR requires?
- ☐ If DRR curriculum development is part of a pilot project, are strategies and actions of sufficient *impact and influence* in place to ensure continuance and movement to scale?
- ☐ Is there a national initiative in train to identify *core messages, key concepts, key knowledge and key competencies and skills* for DRR and to embed them in the national primary and secondary curriculum?
- ☐ If a special subject for DRR is being developed, are efforts in place to also ensure that *DRR appears elsewhere in the curriculum*?
- ☐ Is DRR being folded into significant and already existent *crosscutting curriculum themes and dimensions* such as education for sustainable development, environmental education, education for citizenship?
- ☐ If schools are participating in 'special events' in disaster risk reduction, are they ensuring that *learning from the experience is connected to classroom learning*?
- ☐ Are DRR curricula being developed through a *proactive and fully committed partnership* between the ministry responsible for education and the ministry responsible for disaster and emergency management?
- ☐ Are other *key stakeholders fully and actively involved at the national and local levels*?
- ☐ Is DRR curriculum development and implementation being *evaluated and researched* and are findings being fed back into improving practice?
- ☐ Is there at least one educational research center or higher education unit in the country undertaking *systematic research* and enquiry into DRR curriculum, teaching and learning?
- ☐ Can DRR practices be described as '*research-informed practices*'?
- ☐ Are *coordination and dissemination mechanisms* in place for sharing of noteworthy practices?
- ☐ Is a *sustained funding flow* available for DRR curriculum development and integration, and for movement to scale?

Source: Disaster Risk Reduction in School Curricula: Case Studies from Thirty Countries, UNESCO, UNICEF



Curriculum

The DRR education should cover the following:

- Understanding the science and mechanisms of natural disasters

While these are traditionally taken up in natural and physical sciences and geography, there is now a shift to a ‘broader, multidisciplinary and socially oriented approach to disaster-related education.’ Several countries have taken efforts to cover this in various subjects across different levels.

- Learning and practicing safety measures and procedures

These include acquiring knowledge about early warning signals and evacuation procedures, as well as skills such as basic first aid and participation in drills and exercises. The basic measures and behavior to keep oneself safe are essential to DRR education. These competencies are generally obtained through extra-curricular activities.

- Understanding risk drivers and how hazards can become disasters

This facilitates the examination of the elements at work in the occurrence of disaster risk, namely, the presence of the hazard, and the vulnerability and adaptive capacity of the exposed community. Including this in the curriculum instills a sense of empowerment and a consciousness among the students that they can do something to mitigate the risks by looking at the local conditions which influence these various elements.

- Building community risk reduction capacity

This includes involving students in hazard, vulnerability and capacity assessments and development of DRR action plans. This equips the learners with the knowledge, skill and attitude for greater participation in DRR management.

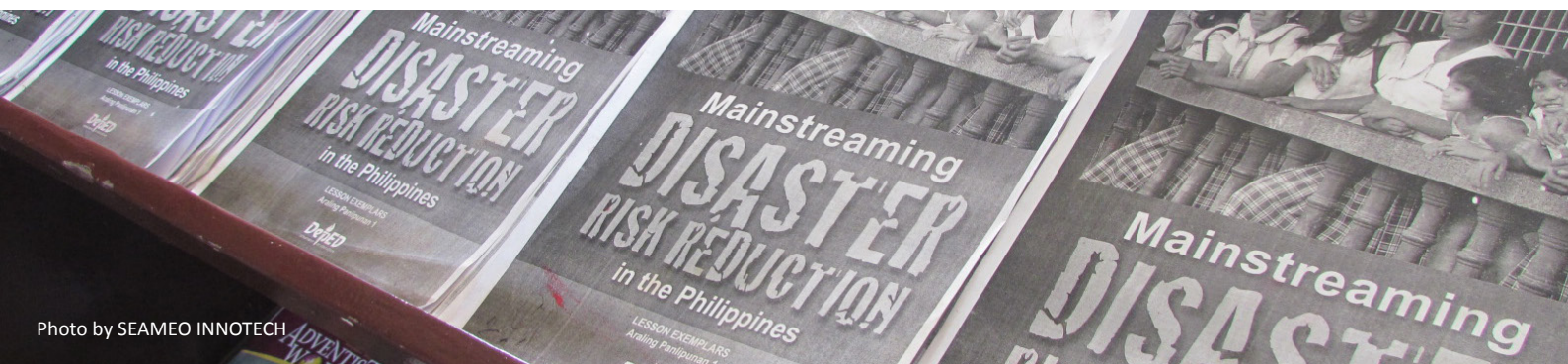


Photo by SEAMEO INNOTECH

Figure 13: Lesson Exemplars on DRR, DepEd, Philippines



Case Story 14: DRR in SDN 2 Parangtritis's Curriculum, Indonesia

The students of SDN 2 Parangtritis, also in Indonesia, learn about disaster risk reduction from subjects such as natural science, geography, social studies, social science, art, and even mathematics. By integrating the content of DRR in this way, most of the lessons can be creatively linked to the basic concepts of the different subjects, complementing them and in the process making them more interesting and understandable.

In Art class, for example, the teachers make use of a folkstory entitled “Ande-ande SSB (Ande-ande Disaster Preparedness School). This way, children are more interested and retain the lessons on disaster emergency preparedness.



Case Story 15: DRR in Swimming Class at the LyTu Trong Secondary School, Vietnam

LyTu Trong Secondary School in Vietnam is located on intersecting rivers and experiences flooding when there are strong rains. Statistics show that an average of 10 children drown every day during such times. Since the school is always flooded, the school board developed a project that can help save lives of students by teaching them how to swim. Swimming class for 6th graders is conducted every 6 o'clock in the morning. To date, 300 students have learned how to swim.

Aside from reducing the drowning incidents, the project has also improved the health and physical condition of the students. Around 98% can now swim and these remarkable results have led other schools to adopt the project. There is continuous monitoring of the children's swimming skills. The school holds regular competitions as a form of skills evaluation.





Case Story 16: Wat Soumpouathong School's Green Technology for Disaster Response and Preparedness, Thailand

Located next to the Maenam Thajeen (Thajeen River) in Suphan Buri Province in Thailand, Wat Soumpouathong School is prone to flooding every year. In 2010 to 2011, the river level was so high that the school had to be closed for 70 days because of severe flooding. The director and teachers conceptualized a project that will equip the students with essential Disaster Risk Reduction (DRR) skills to help them remain more positive during the recurrent floods. They believed that with greater knowledge and awareness about related environmental issues, students will have a better perspective about the hazards they experience.

Upon analysis of the situation, the director and teachers saw that students are forced to stay at home when schools are rendered inaccessible due to the floods, with their families also in need of food and clean drinking water. The project sought to provide them with the knowledge and skills to better cope with such adverse conditions, teaching them options for constructive activities while at home such as cultivating food and implementing other “green” initiatives that will help protect the environment.

The DRR training model included designing a lesson plan on DRR with focus on science subjects with discussion on identification, prevention, and treatment of diseases and injuries resulting from floods and exercises to simulate emergency situations to help students gain the skills required for disaster preparedness and response. The lessons also covered application of local technologies and indigenous materials used in times of disasters which were developed through consultation workshops with the students and their parents. These are the solar box model, materials for easy water filter, worksheets or exercises for DRR and technology model learning. Lesson plans also include recycling of paper and other materials, and use of leaves as compost.

The project also included teaching the students to maintain a ‘life bag’ containing flashlight, mirror, life vest, water, canned goods, pocket knife and matches. The students also learned how to make an evacuation plan.

The project facilitated the sharing of the knowledge and technology to students of other schools, their parents and the community. It showed that having adequate knowledge, appropriate skills and the proper attitude can turn a negative situation into a more positive experience.

To further help in developing and/or improving a DRR curriculum, following is a suggested checklist containing the elements of an effective DRR curriculum.

Tool 18: Elements of DRR Curriculum



- ☐ Are students receiving *cumulative exposure to disaster risk reduction* through the primary and secondary grade levels?
- ☐ Are students within each grade level receiving *reinforced exposure to disaster risk reduction across the curriculum*?
- ☐ Does the disaster risk reduction curriculum consider *multiple hazards*?
- ☐ Is there space within the curriculum for students to consider and *address local and community hazards and disaster risk reduction practices*?
- ☐ Does the curriculum explain the *causes and effects of hazards*?
- ☐ Does the curriculum explain that disaster risk multiplies according to the level of *hazard and degree of vulnerability* but that it can be reduced according to societal and individual capacity to cope?
- ☐ Does the curriculum concretely address *disaster prevention, mitigation, preparedness and resilience building*?
- ☐ Does the curriculum establish *synergies with co-curricular or extra-curricular disaster risk reduction initiatives*?
- ☐ Does the curriculum treat both *rapid onset and slow onset disasters*?
- ☐ Does the curriculum include *climate change education*?
- ☐ Does the curriculum explore *gender aspects of disaster risk reduction*?
- ☐ Does the curriculum consider disaster risk reduction education within a *framework of education for sustainable development*?
- ☐ Does it also establish *synergies with emergency education, environmental education, child and human rights education, child-friendly education and life skills education*?

Source: Disaster Risk Reduction in School Curricula: Case Studies from Thirty Countries, UNESCO, UNICEF



The curriculum should also be reflective of the desired learning outcomes. The following checklist serves as a guide in developing DRR learning outcomes.

Tool 19: Developing DRR Learning Outcomes



- ☐ Is a comprehensively articulated *list of DRR learning outcomes* available for both primary and secondary curricula as a whole?
- ☐ Are fully articulated *subject and grade specific* lists of DRR learning outcomes available?
- ☐ Do the lists give *equal weight to knowledge and understanding, skills and attitudinal/disposition* learning outcomes?
- ☐ Are DRR knowledge and understanding, skills, and attitudinal and dispositional learning outcomes *systematically widened and deepened grade by grade*?
- ☐ Are learning outcome lists *periodically evaluated and revised* in the light of accumulating experience?
- ☐ Is the *range of learning and teaching approaches* employed fit for the purpose in terms of realizing the *spread of agreed learning outcomes*?
- ☐ Have clear and direct *linkages between learning outcomes and forms and styles of assessment* been established?

Source: Disaster Risk Reduction in School Curricula: Case Studies from Thirty Countries, UNESCO, UNICEF

Capacity Building

Part of the curriculum integration process is the training of teachers and other education personnel on how they will teach DRR as part of the curriculum. They should be equipped with DRR and other essential skills to promote the learners' physical and emotional well-being and ensure that instruction is learner-centered, participatory and inclusive.

The following checklist will help assess the readiness of a teacher to teach DRR as part of the school curriculum.

Tool 20: Key Features of DRR Teacher Professional Development



- ☐ Is a DRR handbook or manual available to teachers?
- ☐ Does the handbook or manual offer guidance on both DRR lesson content and the facilitation of interactive learning?
- ☐ Is DRR teacher training made available covering both DRR content and practice in interactive learning?
- ☐ Is post-training aftercare made available to teachers in the form of trainer visits to schools, follow-up sharing sessions and structured co-evaluation of lesson facilitation?
- ☐ Is intermediate and advanced training to hone the professional skills of the 'DRR reflective practitioner' made available?
- ☐ Is training in the facilitation of affective (emotional) learning offered so as to meet the psychosocial needs of students?
- ☐ Is DRR teacher guidance available on a website or through a practical professional journal?
- ☐ Are principals trained in DRR curriculum and in the leadership of DRR development in their schools?
- ☐ Are school inspectors and local school system administrators made familiar with DRR curriculum initiatives through training sessions so they are best placed to support in-school curriculum development?
- ☐ Is inter-sectoral training in DRR made available so that teachers, media personnel and others can reinforce DRR messages in formal, non-formal and informal learning settings?
- ☐ Is initial teacher training in DRR teaching and learning available?
- ☐ Is university-based in-service professional development in disaster risk reduction education available?

Source: Disaster Risk Reduction in School Curricula: Case Studies from Thirty Countries, UNESCO, UNICEF



Learning Materials

Instructional materials for conveying DRR messages and concepts should be packaged in an attractive manner, and structured in a way that engages the learners. Many resource materials have been developed by Member Countries and various organizations to serve as reference for teachers.

In the Philippines, elementary school teachers developed a workbook, entitled “My Little Book on Disaster Preparedness with support from Save the Children. Intended for elementary students in Grades 1-6, the workbook discusses various hazards common in the country and includes activities to reinforce the concepts such as puzzles, games, quizzes and riddles. Christian Aid developed “Disaster Strikes: Teaching Resources” – a package of materials which includes worksheets, films and poster – to help learners understand the nature of disasters, their impact on countries around the world, and how to cope with and lessen their impact.



Figure 14: Sample Instructional Materials used by Member Countries

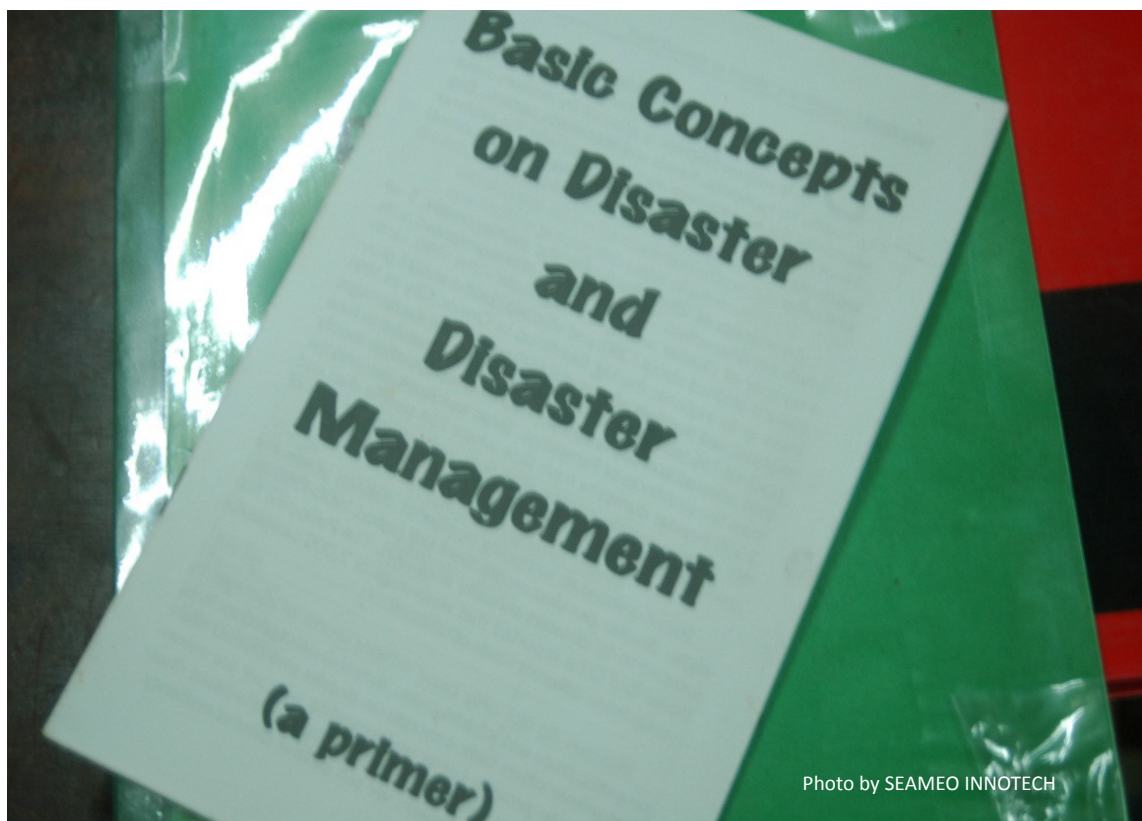


Figure 15: A Primer on Disaster Management prepared by the Binitayan Elementary School, Philippines



Figure 16: Ministry of Education and Culture, Indonesia

Learning Pedagogies

There are various strategies to complement DRR-infused lesson plans. Methods to impart DRR knowledge and skills should provide opportunities for active learning and interaction among students, and even with the community.

Some examples of teaching strategies that facilitate active learning are:

- ✓ Celebration of Disaster Consciousness Week/Month
- ✓ Flag ceremony
- ✓ Quarterly drills (e.g., earthquake simulation, fire drills, etc.)
- ✓ Field trips
- ✓ Inviting resource speakers such as firefighters, police officers, search and rescue groups, officers of local disaster risk reduction and management council
- ✓ Day and overnight camps
- ✓ After-school clubs
- ✓ DRR campaigns and competitions (e.g., art competition)
- ✓ Use of songs, folklore and dances



Figure 17: Tsunami Dance Performance at the SDN 2 Parangtritis, Indonesia

Source: SDN 2 Parangtritis



Figure 18: Art Competition on DRR at SMP Negeri 2 Imogiri, Indonesia

Source: SMP Negeri 2 Imogiri

Song on Earthquake Preparedness

Kalau ada gempa (if there's an earthquake)
 Lindungi kepala (protect your head)
 Kalau ada gempa (if there's an earthquake)
 Masuli kolong meja (hide under the table)
 Kalau ada gempa (if there's an earthquake)
 Hindasi pecahan kaca (stay away from broken glass)
 Kalau ada gempa (if there's an earthquake)
 Lapid ke tempat terbuka (run into an open space)

Figure 19: A Song Used at the SMP Negeri 2 Imogiri, Indonesia

Case Story 17: Jejeran State Islamic Elementary School's DRR Education Program, Indonesia



As part of the schools' DRR program, the MIN Jejeran (Jejeran State Islamic Elementary School) in Indonesia, required their teachers to integrate DRR in Math, Civil Education, and Fial (Islamic Law, Indonesian language). To complement the lessons, students launched a DRR campaign making use of magazines, posters and peer-to-peer approach for information dissemination. They also conduct mock drills three times a year to ensure that students and teachers alike know what to do during emergency and disaster. The simulation drills also serve as tool for evaluating the school emergency plan.



Figure 20: DRR Campaign in MIN Jejeran, Indonesia

Source: SMP Negeri 2 Imogiri

(Left) Sixth Grade students design DRR-themed posters. The posters are then printed and used as campaign media. (Right) A bulletin board (wall magazine) is utilized to post DRR information.

It is important to provide opportunities for learning and practicing effective response procedures such as through safety drills. Disaster risk reduction behavior which is focused on preparedness is important because the students, teachers and school staff gain confidence, acquire a vigilant attitude and exhibit the capacity to respond to emergency situations, having been equipped with the necessary knowledge and skills.

Following is a suggested checklist to better prepare teachers for the conduct of drills.

Tool 21: Drill Preparedness Teachers Checklist



Teachers: Prepare yourselves

- ☐ School Emergency Evacuation Route map is posted in your room. On it mark your room clearly in a contrasting color. If you do not have one, please obtain it from the school office.
- ☐ Emergency Go-Bag or Go-Bucket Checklist, Emergency Notebook/Clipboard Checklists, and Student Comfort Kits Checklist are complete.
- ☐ All of these supplies are in place and are easily transportable for evacuation or field trips.
- ☐ Confirm whether you will have any special duties. Get to know your buddies in neighboring classes. If your name does not appear on your emergency organization matrix or if you do not have a class, please be prepared to report to the incident command center.
- ☐ Check that you know the location of your fire extinguisher and recall the acronym to remind you how to use it: P.A.S.S. Pull the pin, aim at the base of the fire, squeeze the nozzle and sweep at the base of the fire.
- ☐ It is highly recommended that you complete your own Family Disaster Plan at home and your plan with your own childcare providers. Please prepare yourself at home and at work in the event you are needed to stay longer than your scheduled day. The principal or designee will release staff members as the needs change. If you have very extenuating circumstances discuss these with your Principal NOW, not during an emergency.
- ☐ Plan a quiet activity that students can do in the assembly area in the event of a real emergency or a drill.
- ☐ In case of disaster before or soon after the end of the school day, please be prepared to return to school to provide assistance to students.



Teachers: Prepare your students

- ☐ Encourage your students to take all drills very seriously.
- ☐ Practice building evacuation with your classroom and with neighboring classroom. Make sure that your students know the four rules for building evacuation: Don't talk! Don't push! Don't run! Don't turn back! Students should know that if there is an earthquake when they are outside of a classroom (during break or lunch or if they are somewhere), they should exit with the nearest class and should NOT go back inside. If they are between classes, they should assemble in the outdoor emergency assembly area with their next period class.
- ☐ Review the Emergency Evacuation Routes. Prepare four monitors who will work as buddies and lead the way, carefully checking to make sure that the route is clear. (This is of most importance for classes on second floor or without easy access to open space outdoors.)
- ☐ If you face earthquake risks, practice "Duck, Cover, and Hold" drill, having students hold their position for 45 seconds. You may count together: one-one hundred, two one-hundred, etc.
- ☐ Teachers in science labs should demonstrate to students how to extinguish any flames and isolate any hazardous materials in use.
- ☐ Make sure that students understand Disaster and Emergency Student Release Procedures. Inform students that only their parent(s), guardian(s), or other adult(s) listed on their Emergency Contacts Card will be allowed to pick them up from school in a real emergency. Explain the "Request Gate"/"Reunion Gate" idea and reasons.

Teachers and Students: Prepare your parents

- ☐ Teachers are to pass out drill announcements and parent letters to their students to take home.
- ☐ Confirm with parents that their Emergency Contact Form is up-to-date, and explain the importance of the reunification procedures.
- ☐ Reassure parents that their children will be safe at school until they arrive.

Source: School Disaster Management, Save the Children

Augmenting the drill preparedness checklist above is a scenario building tool used by Commonwealth Elementary School in the Philippines for their earthquake drill.

Tool 22: Scenario Building Tool used by the Commonwealth Elementary School, Philippines



Earthquake Scenario for Commonwealth Elementary School

The following earthquake scenario for Commonwealth Elementary School is derived from the Metro Manila Earthquake Impact Reduction Study (MMEIRS). The study details an impact scenario of a magnitude of 7.2 earthquake along the west valley fault, the worst case scenario for Metro Manila December 2013, 2:40 in the afternoon.

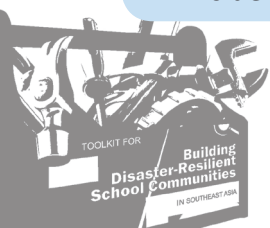
The pupils of Commonwealth Elementary School are already inside their respective classrooms, and teachers have begun the class lectures. Some have just opened their textbooks and notebooks. Students are surprised by a sudden jolt, and a booming sound can be heard outside. The teachers immediately stopped the classes as they feel dizzy from the unexpected ground shaking.

The pupils started to look worried as the hanging objects shook violently. They attempted to stand and get out of the room but were unable to steadily move. They all dropped to the floor. The teachers gave loud instructions to the students to calm down, move away from windows and other falling objects, cover their heads with their protective head gear and remain in that position until the shaking stops. As earthquake stops at approximately 2:41 pm, teachers in-charged of emergency exit immediately check for possible route of exit for pupils' and teachers' guide.

At the school grounds, people observed that the trees were violently shaken. Leaves and small branches fell on vehicles in the parking lot. Some glass windows shattered and broken pieces were scattered along the pavement. Concrete walls of old buildings showed some cracks and plasters started to disintegrate. Lights in all buildings flickered and finally went out. There was no electricity. Some school staff tried to make calls through their cellular phones but could not get through.

As the ground shaking dissipated, the teachers of Commonwealth Elementary School immediately gave instructions to the students to calmly leave the rooms and go to the open grounds. The students began to move as fast as they could, leaving their bags and things behind. Assigned students in each class took with them their emergency kits. Students from rooms located on the ground floors were the first to arrive at the evacuation area, closely followed by those coming from the upper floors. Older students guided their classmates toward the staircases. Students were asked to move cautiously in places where there were scattered debris. As they evacuated, the floors intermittently moved as aftershocks continued to shake the school buildings.

At the evacuation area, the principal gave instructions to specific teachers to assess the situation of the school. Students belonging to the same class grouped together. Respective teachers conducted headcount to check if everyone was present and accounted for. Those with minor injuries were treated by the schools first aid team. After checking the students in the assembly, the teachers learned that six students were still inside the buildings.



Meanwhile, several students noticed smoke coming out from one of the buildings and pointed it out to the teachers. The principal ordered one teacher to call the nearest fire station and another to inform city officials about the situation in the school. He asked all teachers to instruct the students to wait for their parents to fetch them. They were not allowed to leave the school grounds without a parent or guardian. He also instructed the security guards to log all students leaving the school grounds with their parents.

One teacher heard through his battery-operated radio that according to the Philippine Institute of Volcanology and Seismology (Phivolcs), an earthquake severely hit Metro Manila and nearby regions. This large-magnitude earthquake was generated by the West Valley Fault.

News of damage to buildings, residential houses and other infrastructures trickled in. There was no electricity in Metro Manila and no report yet when it will be restored. Telephone lines as well as cellular networks were down. Water was gushing to the surface due to broken pipes. Some vehicles damaged by falling debris were abandoned and left in the middle of the street. The Metro Rail Transit (MRT) and Light Rail Transit (LRT) systems stopped operations as some parts of the railway tracks had been bent and twisted. Fires had broken out in several areas because of electrical short circuits, and explosion of petroleum and gas tanks caused them to spread. Hospitals were receiving numerous injured patients, and emergency stations had to be set up outside of the hospital building. Airports, and both north and south wharfs had also temporarily stopped operations.

Source: Commonwealth Elementary School



Figure 21: Earthquake Simulation at Commonwealth Elementary School

Practicing 'duck, cover and hold, in class; children gather in safe place while protecting their heads with improvised head cover; first aid treatment given to injured students

The emotional and psychosocial needs of students after a traumatic event (e.g., earthquake aftermath) should also be considered. Teachers and other focal persons need to be ready to manage the different emotions of students by debriefing them. The following conversation script provides guidance in holding a debriefing session.

Tool 23: Conversational Guide for Debriefing



Opening

This event has shaken all of us. Let's take a little time to reflect on what has happened so we can come to terms with it. I'm going to ask some questions that will help us gradually process what happened. I would like you to let everyone have their own answers – no interrupting, arguing, or judging what anyone says.

Objective Questions

Imagine you were a video camera recording what you have seen and heard happening since the first events.

- What actions, words, phrases, objects, and scenes are recorded in your tape?
- When did you first notice that a disaster was happening?

Let's get everything out – the first events, then everything that has happened since – so we all have as full a picture as possible of what has happened to this point. Be sure to give everyone a chance to contribute some of his or her experience.

Reflective Questions

- What were your first reactions?
- What shocked or frightened you most about this incident?
- What images or previous experiences were triggered for you?
- How else did you find yourself reacting?

Interpretative Questions

- What impact has this had on you personally? How are you different now?
- How are we different as a group or as a society as a result of these events?
- How has our view of the world changed?
- What might have been some contributing factors to why this happened?
- What might be some of the underlying issues behind all of this?
- What might we learn from this?

Decisional Questions

- What can we do to deal with the situation in the short term?
- What are some things we can do to begin to deal with the underlying issues and prevent events like this from happening again?
- What can we do to help each other?

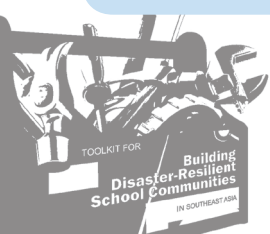
Closing

We will undoubtedly continue to reflect on this. If you need help, please be sure to ask for it.

Hints

Some of these questions are difficult to answer, so if there are few spoken answers, don't worry. The very fact of raising these questions and following this flow allows deeper reflection later. It may be helpful to print out the questions for people to take with them for later reflection.

*This conversation is adapted from a conversation in "The Art of Focused Conversation for Schools"
by Jo Nelson*



“What I learned from my experiences of earthquakes is to be calm. We should never panic during earthquakes, instead we should take the necessary measures for us to be safe such as hiding under a table, staying away from trees and buildings, going immediately to the assembly point, and finding a safe place. In our school, the safest place is the schoolyard. Also, if someone is wounded, we must help this person evacuate. We were also advised to cover our heads with our bags while evacuating.”

Fauzi, Indonesia

“Our school has a project on disaster preparedness. Every 26th of the month, an earthquake simulation is held for us to be ready in case disaster strikes. Since this is a regular drill, we somehow feel that disaster is not something different. It can happen anytime, and it is unavoidable.”

Luna, Indonesia

Projects implemented both in school and in the community reinforce the lessons learned in the classroom and provide opportunity for application in actual settings. DRR activities that can be initiated in the community include:

- ✓ Community awareness campaigns
- ✓ Service projects such as tree and mangrove planting, river and coastal clean-ups, setting up a Child Friendly Space, setting up school or community vegetable gardens, orchards, trees and compost pits.



Case Story 17: SMK Matunggol's Green Earth Campaign, Malaysia

The school community of SMK Matunggol in Malaysia is exposed to the hazards of soil erosion and flooding. To reduce the risks due to these hazards, the school head and teachers launched a Green Earth Campaign promoting tree planting. They also mobilized the students to take out the soil from the drainage system once a month to declog the water flow. The Sabah Department of Environment provided funds for the activities while the Kudat Forestry Department conducted symposium on the importance of keeping the earth green. The Kudat Agriculture Department donated the Green Earth Kit and the Public Works Department provided technical support. HBN Enterprise, a private company, contributed human resource and tools.

As a result, the school is now safe from flash floods and soil erosion. There is also income generation through the pineapples harvested from the school plantation and are sold to the community.

- ✓ Children and the youth are the best messengers of lessons learned in school. Child-to-child approach has been employed by several member countries and non-government organizations to reach children in the community who may not have the opportunity to attend school.



Case Story 18: DRR through the Red Cross Youth Movement at the Camotes Secondary School, Philippines

Camotes Secondary School is the first and one of the oldest public secondary schools established in Camotes Islands in the Visayan province of Cebu in the Philippines. It is situated near the open sea making it vulnerable to typhoons, storm surge and sea-level rise.

In view of these risks, the school initiated a local solution to address their vulnerability to hazards. The school recognizes the value of building a culture of preparedness and resiliency with particular focus on children and the youth since they are among the most vulnerable groups when disasters occur. This led to the formation of the Disaster Risk Reduction Red Cross Youth Movement in partnership with Plan International (NGO) which initiated the mobilization of the student volunteers.

Mainstreaming DRR through Red Cross Youth Movement is an education program that aims to integrate DRR activities in the school activities through institutionalization of the Red Cross Youth Organization (RCYO). The group, which is open to students from Grades 7 to 10, was formed to facilitate increased awareness on climate change (CC) and its impact, to mobilize the students in the greening of their municipality as part of mitigation efforts, and to encourage participation of the youth and students in the DRRM plan and program. It is also envisioned that the program will facilitate the development of student leaders to become champions for DRR activities.



The tool below helps in ensuring that selected DRR pedagogies help the students to understand, appreciate and relate to the DRR lessons, and are responsive to student needs.

Tool 24: Elements of Effective DRR Pedagogy



- ☐ Is learning and teaching directed towards realizing *skills and attitudinal and dispositional learning outcomes* as much as *knowledge and understanding learning outcomes*?
- ☐ Does learning stay in the classroom or does it also take place in *wider school and community contexts* (the 'field')?
- ☐ Are students given opportunities to practice disaster risk reduction skills in real life contexts through *action learning*?
- ☐ Are children offered the opportunity to assume a *catalytic role and horizontal forms of leadership* within local community disaster risk reduction?
- ☐ Is *interactive learning* a regular feature of the DRR classroom?
- ☐ Is *experiential learning* (around both actual and surrogate experience) a regular feature of DRR lessons?
- ☐ Do students *work in teams* to undertake DRR-related enquiry and research?
- ☐ Are students encouraged to engage with hazard and disaster at an *emotional/feelings level*?
- ☐ Are students called upon to *exercise their imaginations* through DRR learning?
- ☐ Are efforts made to use textbooks in *interactive and action-oriented ways*?
- ☐ Are special efforts made in terms of *sensitive classroom facilitation* when disaster risk reduction learning is happening in *post-trauma contexts* and/or contexts are marked by *slow onset disaster*?

Source: Disaster Risk Reduction in School Curricula: Case Studies from Thirty Countries, UNESCO, UNICEF

Learning Assessment

Evaluation of student learning may be done at the end of the school year or at predetermined periods during the school years. This is called summative assessment. This facilitates assessment of learning relative to intended learning outcomes. Formative assessment, on the other hand, is ‘an integral, ongoing component in the learning process.’ It identifies what is being learned throughout the school year and provides opportunity for fine-tuning both methods, timing of lessons and other aspects of the learning process. **Tool 25** will help determine if the teacher’s selected student assessment tools measure the achievement of desired student learning.

Some examples of student assessment tools⁷ are:

- Written (including computer-based) exams/tests/quizzes
- Oral questions/quizzes such as multiple choice questions; true-false questions; ranking exercises (e.g., ranking statements according to given criteria); scales (e.g., five-point Likert scales)
- Essays/papers
- Journals/diaries
- Analysis of case study or fictional scenarios
- Exhibitions
- Projects
- Interviews (e.g., individual/group focus group)
- Portfolios
- Observations
- Self-/peer assessment
- Oral presentation/demonstration (e.g., plays, skits, role plays, miming, singing, speeches, debates, storytelling)
- Simulations Artifacts (e.g., drawing, student notebooks)

⁷ INEE. Guidance Notes on Teaching and Learning. New York, 2010; INEE, WHO. Skills for Health. 2003



Following is a suggested checklist that outlines the key features of a DRR learning assessment.

Tool 25: DRR Student Assessment



- ☐ Is there summative assessment of students' DRR learning?
- ☐ Is there also ongoing formative assessment of their DRR learning?
- ☐ Is portfolio assessment of student DRR learning in place, drawing upon and bringing together a range of assessment modalities?
- ☐ Is equal assessment space given to DRR-related skills and attitudinal development as to acquisition of knowledge and understanding?
- ☐ Is assessment an interesting and welcomed aspect of student learning?
- ☐ Does the teacher feed learning from assessment into lesson revision and classroom facilitation?

Source: Disaster Risk Reduction in School Curricula: Case Studies from Thirty Countries, UNESCO, UNICEF

2.2 Education Continuity Plan

It is the responsibility of the Education sector, particularly the school officials in the locality, to ensure access to education and learning opportunities for everyone at all times, particularly during times of disaster and emergency. Part of the DRR plan of a school is the identification of measures to ensure provision of continuous education.

In cases where schools become unavailable to student learning due to hazards such as flooding, fire, and other security risks, alternative delivery modes (ADM) of learning may also be considered.

One example is the home-based learning program in Singapore. Singapore's **School Continuity through Home-based Learning** addresses the need for continued access to learning especially during emergencies and disasters when schools need to be closed.

Components of the home-based learning program include:

- Development and dissemination of the Curriculum Continuity Plan (CCP) checklist to schools. Part of the CCP Checklist is the home-based learning.
- Production of Home-based Learning (HBL) lesson guide, templates for weekly timetable and schedule for broadcast of education program (in the event of complete closure of the school)
- Successful implementation for affected schools

The program relies on information technology (IT) so that students could continue their learning at home. Lessons are sent through the internet. If the students do not have access to IT facilities, schools send hard copy of the lessons through the postal system. Lessons could also be accessed through television broadcasting and video format.

Monitoring is done through mail, hand delivery, telephone, email and the school learning management. Parents are informed of their learning activities and study schedules so that they can help monitor their children's progress.

Teachers undergo training on home-based instruction. The practice of internet-based learning has become a regular component of Singapore's educational system. Every year, students undergo week-long home-based learning at home. Schedules vary for the different levels.⁸

⁸ Department of Education, Disaster Preparedness and Education in Emergencies. Notable Practices and Programs in Selected Southeast Asian Countries, 2014





Case Story 19: MOE Singapore's "Whole of MOE Approach"

The Ministry of Education in Singapore, through the Security and Emergency Planning Office (SEPO), develops and implements emergency systems and security plans for MOE Head Quarters (HQ) and schools. SEPO manages the emergency and security operations and readiness in schools and MOE HQ. It also develops and conducts emergency training courses and exercises for MOE HQ, schools and post-secondary education institutions or PSEIs (MOE Singapore official website).

In dealing with health-related outbreaks, the MOE takes a "whole of MOE approach" consisting of the MOE, the schools, the institution of higher learning, and special schools, all working together to abate a crisis. The MOE's strategic goals on pandemic preparedness include a) early detection and isolation, b) social distancing, and c) continued emphasis on personal hygiene and social responsibility.

Activities for early detection and isolation include temperature-taking and visual screening in mainstream schools, kindergartens and Special Education (SPED) schools; issuance of travel advisories and Leave of Absence (LOA). School staff and students shall exercise social responsibility by declaring their travel history if they have been to affected countries and to stay at home for seven days before returning to schools.



Source: Presentation of Tay Tiong Beng, Deputy Director, SEMPO, MOE Singapore at the Regional Conference on EiE and Disaster Preparedness, 10-12 December 2013, Philippines

Under social distancing, schools in Singapore were closed as a precautionary measure to prevent the students from contracting the virus in public places. When the schools reopened, the students underwent a briefing on SARS and had to disinfect their desks and monitor their own temperature twice daily. School closure is widely viewed in Singapore as an effective measure for reducing the spread of pandemic influenza not only within schools but also within an entire community. Reducing child-to-child interaction will not only break the fast-acting chain of transmission in schools, but will also reduce the

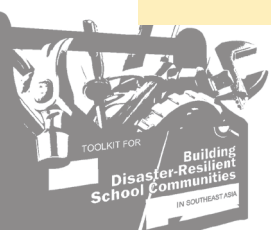
spread of disease from children to adults. Schools across Singapore could close when there is confirmed entry of a highly lethal pandemic virus or during the initial stages of a pandemic when lethality may be uncertain (Preparing for a Human Pandemic Influenza in Singapore).

Other activities for social distancing involved: a) special recess arrangements (i.e., staggered recess timings, and assigned seating arrangements at canteen to contain any possible spread and facilitate contact tracing); b) special classroom arrangements (adopted frontal teaching and arranged rows of single desks; c) restrictions on staff meetings to ensure staff meetings involve not more than 15% of the teaching strength, or be suspended entirely); d) progressive zoning in hostels (in terms of rooms, floors and blocks); e) campus zoning in institutes of higher learning (students leave their classrooms only during stipulated timeout periods and within certain physical zones on campus); and f) home-based learning. In event of full school closure, the MOE disseminates the Curriculum Continuity Plan (CCP) checklist to schools, Home-based Learning (HBL) lesson guide, templates for weekly timetable and schedule for broadcast of educational programmes.

Selective school closure (i.e., closing only those schools with infected children) will be considered if the virus is determined with a high degree of certainty to be significantly less lethal than the government's baseline planning assumptions. For extended school closure, students will continue to receive education through mediums such as the Internet, broadcast media, digital medium (e.g., CD-ROM) or print medium delivered through postal services.

When schools are closed, working parents of young children will have to make alternative childcare plans during the normal workdays. Creating childcare groups is one way to share the burden among parents. However, these groups should be kept small to reduce the probability of disease spread. When pandemic progresses, childcare requirements will likely be eased to some extent since parents and relatives may also be telecommuting. For older children and teenagers, parents will be advised to ensure that they do not congregate in large groups outside of school (Preparing for a Human Pandemic Influenza in Singapore).

To promote social responsibility, the MOE issues the H1N1 education package to schools before school opening; students and staff were briefed on good personal hygiene; and, parents and students were reminded on social responsibility (e.g., students will stay home, if not feeling well). The package includes a set of slides for teachers to use in educating and advising their students, posters to be displayed at strategic locations within the school to raise student awareness, as well as pamphlets for students to bring home and share with their parents. The pamphlets will include messages on good hygiene practices and social responsibility.



Singapore's pandemic flu response plan enables affected schools to shift to online learning. They practice the e-learning drill quarterly, and the entire country shifts to e-learning for a week every quarter to ensure emergency preparedness across the country. Following is a sample continuity plan adopted by Singaporean schools during the avian flu pandemic:

Tool 26: Sample Continuity Plan in Singapore



GREEN	YELLOW	ORANGE – Schools/Campuses may close in this phase	RED – School/Campus Closures
• Lessons and exams as normal • Leave of Absence (LOA) Students to access materials from e-learning system (LMS) • Isolate leave of absence (LOA) students for exams	• Lectures, tutorials, and laboratory sessions continue as normal • Home Quarantine Order (HQO) students to access materials from e-learning system • Isolate sick students for exams	• Stop mass lectures and activities; replace by e-learning, if possible • Tutorial via online tutors • Laboratory sessions as normal, if possible; via online labs, if possible • HQO students to access materials from e-learning system	• E-learning only via remote access for students from various locations, including homes • Hold exams on e-learning systems, if possible; otherwise, postpone exams

Adapted from NTU Business Continuity Plan: Singapore, 2006

Other examples of alternative delivery modes for education continuity are contained in the **Flexible Learning Options for Learners** in the Philippines.

To ensure the right of each Filipino to education, the National Disaster Coordinating Council (NDCC, now NDRRMC), issued the Policy Guidelines on Child Rights-based Disaster Management in cooperation with the Office of Civil Defense, Council for the Welfare of Children, and UNICEF. The policy mandates DepEd and the Commission on Higher Education (CHED), in coordination with the Department of Interior and Local Government and local disaster coordinating councils, to provide recreational and education activities and alternative learning sessions for displaced children and out-of-school-youth.

To ensure the continuity of student learning in the event that classrooms or any alternative venues of learning are not available due to natural calamities or armed conflicts, DepEd offers flexible learning options (FLO). Examples of these include the Modified In-School Off-School Approach (MISOSA) and the Enhanced Instructional Management by Parents, Community and Teachers (e-IMPACT) for elementary students.

MISOSA allows children to learn at home or in their communities. It involves the use of self-instructional materials that contain the lessons for the day, including the learning objectives, the activities to work on, exercises and questions to answer. It combines formal and non-formal learning activities to address the lack of classrooms, learning materials and teachers. It also taps community resources for instructional materials or knowledge source.

The innovation was found to be most useful by DepEd Maguindanao Division in providing education to children who are affected by armed conflict.

The e-IMPACT extends educational services beyond formal elementary education. It was developed to address the high student population and dropout rates. It is a management system in which parents, teachers, and community members collaborate to provide children quality education at less cost. Through the system, children become active participants of the learning process.

The e-IMPACT learning materials are based on the national curricula of the DepEd. It institutes multigrade instruction as a pedagogical strategy involving older students (e.g., grade six) guiding younger students (e.g., grade one) supported by programmed instruction, peer learning, self-instruction and individualized tutorial and remediation.

It has three primary modes of delivery: 1) programmed teaching, 2) peer group learning, and 3) individual study.

This system was effective in Albay when there was suspension of classes during natural calamity. Children brought home their learning modules and were responsible for their own learning, as agreed in a learning contract they have signed together with their peer learning groups.

The e-IMPACT could be used for learners in evacuation centers where an instructional supervisor (teachers) could come and bring modules and monitor the progress of the learners.⁹

⁹ SEAMEO INNOTECH, e-IMPACT Guidebook and Flexible Learning Options Guidelines





Figure 22: Programmed teaching under e-IMPACT



Case Story 20: Binitayan Elementary School's Strategy for Continued Education, Philippines

An elementary school in the Philippines served as an evacuation center for community members affected by the same typhoon Reming in 2006. The use of the school as temporary shelter for the evacuees was supposed to be for a month only but it was extended for several months. As soon as it was possible, the teachers decided to continue conducting classes so as not to totally disrupt the schooling of the children. The evacuees were requested to vacate the classrooms during the day and stay in the tents that were perched up in the school grounds so they could hold classes. They continued with this routine from November 2006 until February of the following year when all the evacuees were moved to temporary shelters in other barangays.

During those times, they opted to concentrate on teaching four major subject areas only—English, math, science and Filipino, or the Makabayan, plus character education. They also had to shorten the time allotment for each subject area in order to finish each day's lessons by lunchtime.

Despite the difficulties, the teachers managed to hold classes in the afternoons for the school children from the nearby Bañadero Elementary School. Some of these emergency classes were later on transferred to another school where the evacuees could be accommodated better. This also addressed the problem of overcrowding in the school premises.

The teachers and school staff cited the cooperation among the barangay officials and the evacuees as key to the continuation of classes in the midst of the adverse situation. The psychological intervention from the Department of Health (DOH), in cooperation with the local government units, also helped in enabling the teachers and the students to cope with the aftermath of the disaster. All teachers were taught how to help the students overcome the trauma of the experience through drawing exercises where students are asked to put into drawing what they experienced during the typhoon. This is a creative way of releasing fears felt during the disaster.



Case Story 21: J. Marquez Elementary School's Flexi-Curriculum Project, Philippines

The Flexi-curriculum Project of the J. Marquez Elementary School in Cotabato City in the Philippines is part of the Disaster Risk Reduction Management program of the school. It was an offshoot of Project BAKWET (Bigay Alalay sa Karunungan Wagi at Edukasyon para sa Taong Nangangailangan), which was developed at the time when disastrous floods severely affected the school and community. Classes were suspended indefinitely during those times and the school principal, together with his faculty and staff, developed a plan to continue holding classes despite the circumstances.

The flexi-curriculum program was designed to reach out to the learners and ensure that they still enjoy their right to education despite the emergency situation. The first step was to identify the school staff who would be available and to create committees to take charge of the different tasks needed to set up the program. They next conducted a campaign to track down students through radio announcements and house to house visits. Once they were able to round up the students, the program was implemented and classes resumed within a reasonable period of time at the Mega Market in Cotabato City.

Other preventive measures identified in the strategic plan include regular conduct of DRRM seminar-workshops, drills and information dissemination in the classrooms.

The school's DRRM project ensures that the students are not only safe during and after an emergency situation but also are able to gain access to education even while sheltered in evacuation centers. An important part of the curriculum is preparedness for natural and man-made disasters. The project also provides emotional support to displaced families through various interventions like management of trauma and other psychosocial problems.



“I think in spite of the difficulty of the children to go outside of their comfort zones, they still managed to attend the emergency classes at the Mega Market. In turn, I tried my best to make them feel safe and protected. I also reminded them of the earthquake and fire drills we did in the past, and re-oriented them on what to do in case of emergency or disaster.”

“Even as we ourselves become victims of disasters, we teachers need to exhibit strength, maintain presence of mind and a positive attitude for the benefit of our pupils. To leave our homes in order to respond to the call of duty can be overwhelming. During the flood, it was also an effort on our part to leave our families behind so we can facilitate the flexi-curriculum classes at the Mega Market for almost a month. We all know that we were doing it for our common welfare, so it was important to support one another and work together towards recovery.”

Teacher Merlina, J. Marquez Elementary School, Philippines

The school should develop a plan to ensure continuation of classes in the midst of various situations that may arise due to the emergency/disaster. To do this, consider the following aspects of education continuity in identifying specific steps:

Tool 27: Sample Education Continuity Plan



1. MAKE UP DAYS/HOURS

If school is disrupted for up to _____ days per school year, we can make up for school hours as follows (include shifts, etc.):

Action

2. ALTERNATIVE SCHOOL LOCATION

If school is disrupted for up to _____ days per school year, we can hold classes in an alternative location.

Action

3. ALTERNATE MODES OF INSTRUCTION

How can we keep up with school work, accelerate learning, use peer-to-peer instruction?

Action

4. SURGE CAPACITY

Who can provide teaching and administrative support, if many staff are unable to work, or need help?

Action

5. PLANNING FOR SCHOOL CLEAN-UP (e.g., in event of flood)

Action



6. PLANNING FOR LIMITED USE OF SCHOOL AS TEMPORARY SHELTER

Is our school likely to be needed as a temporary shelter?

☐ Yes ☐ No ☐ Maybe

For how long?

Do we have space set aside for this? Where?

What on-site supplies would be needed, and where will these come from?

How will we protect our school facilities, equipment and supplies?

Do we have rules for the use of our school, and how will they be respected?

7. TEMPORARY LEARNING FACILITY

What would we need in order to set up temporary learning facilities in case of prolonged lack of use of school facility?

Action

Source: School Disaster Management, Save the Children

The tools presented in this chapter will hopefully provide the school community the opportunity to prepare better and to address education in emergencies. The following section offers an extensive list of DRRM materials that can further support planning activities.



Photo by J. Marquez School of Peace

CHAPTER 3:

USEFUL ANNOTATED ANTHOLOGY OF DRRM MATERIALS FOR EDUCATORS

In the course of school-based interviews conducted by SEAMEO INNOTECH in five Southeast Asian countries (Cambodia, Indonesia, Lao PDR, Thailand and the Philippines), it was noted that school heads and teachers are in need of more resource materials on disaster risk reduction, climate change, education in emergencies, school safety and other related topics to help them improve their current school-based disaster risk reduction programs and DRR-based lesson plans. Many schools have no internet access and electricity, and some cannot reproduce publications because of their limited budget.

This chapter is a compilation of resource materials which have been generously shared by Ministries of Education, NGOs and INGOs to give school communities the necessary tools on DRR. These materials are now accessible for schools to use and to share with their communities.

Annex 2 consists a list of resource materials compiled by SEAMEO INNOTECH which are arranged according to themes (see description below). The matrix also contains contact information of the authors or publishers.

Resource materials are classified according to the three pillars of School Safety that were discussed in the preceding chapter.

3.1 Safe School Facilities

Materials falling under this theme are further classified into the two sub-themes:

- a. *Structural safety* – materials that contain information on physical construction to reduce possible impacts of hazards, or application of engineering techniques to achieve hazard-resistance and resilience.
- b. *Climate Change Adaptability* – materials which focus on initiatives and measures to reduce the vulnerability of natural and human systems to the actual or expected effects of climate change.

3.2 School Disaster Management

These are materials which focus on the systematic process of using administrative decisions, organization, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters. It comprises all forms of activities, including structural and non-structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of hazards. Also included are materials which discuss measures taken to detect, contain, and forestall events or circumstances which, if left unchecked, could result in a disaster. Such information would be useful in promoting disaster risk reduction in school communities.

3.3 Risk Reduction and Resilience Education

These are materials containing information on activities that enable structured learning to continue in times of emergencies. Materials that focus on child-led and child-centered participation and capacity building of children during disasters also fall under this theme. Other sub-themes include:

- a. *Gender* – materials that contain DRR policy and practice on gender, gender vulnerabilities of both men and women, and promotion of gender-sensitive approaches to DRR.
- b. *Persons with Disability and Emergencies* – materials that contain information on evacuation, search and rescue programs during emergencies for persons with disability.
- c. *Health and Disaster Risk Reduction* – materials that contain information on climate change effects on health, environmental impact on health, health and disaster risk, health facilities and services, health facility preparedness, mental health, public health, water and sanitation, psychosocial support, safe hospitals, and trauma management.
- d. *Animals in Emergencies* – materials that contain information on how to ensure the safety and well-being of farm animals and pets during emergencies.



ANNOTATED ANTHOLOGY



Photo by PAP Hajah Rashidah Secondary School

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
THEME 1: SAFE SCHOOL FACILITY			
1. Multi-Hazard Mapping using GIS	UN International	Ms. Luiza Corvalho Director Residence Coordinator UN International Strategy for Disaster Reduction UN- Manila unic.manila@unic.org	<i>Description</i> The ACF Disaster Risk Reduction (DRR) Project has been implemented in Camarines Sur and Catanduanes to help reduce the population's vulnerability to hazards like typhoon, landslide, flood, storm surge, tsunami, and earthquake. <i>Highlights</i> Multi-hazard Mapping using Geographic Information System (GIS) is a pilot activity of ACF under the DRR Project. This information material includes a brochure and a CD intended for use and updating by provincial and municipal governments. The brochure describes the importance, process and possible problems faced in multi-hazard mapping. The CD contains the multi-hazard map database covering ACF project areas.
2. Philippines: Designing Defence against Climate Change	Inter Press Service	IPS-Inter Press Service International Association IPS – Inter Press Service c/o FAO Viale delle Terme di Caracalla 00153 Rome, Italy Tel. (+39) 06 57050053 Fax. (+39) 06 57050052 E-mail: headquarters@ips.org http://www.ips.org	<i>Description</i> As the impact of climate change worsens around the globe, a disaster-resilient village is poised to be a solution for urban poor battling the constant floods and typhoons that hit the Philippines. The article describes the different design concepts which were entries to the global architectural design competition dubbed Design Against the Elements (Date), which aims to build the first green, liveable, affordable and disaster-resilient village in the country.
3. UNICEF Child-Friendly School Designer Focuses on Climate Change	UNICEF Carlos Vasquez Education Section Technical Expert	The Child Protection Section Programme Division UNICEF NY childprotection@unicef.org www.unicef.org	<i>Description</i> Architect Carlos Vasquez designs child-friendly schools for UNICEF. His designs, which are built to withstand disasters caused by climate change, were presented at the Children's Climate Forum in Copenhagen. Here, he discussed the importance of sharing with developing countries the alternative technologies and designs for school environments that will be better able to withstand natural disasters.



KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
4. A trilingual Philippine Disaster (Typhoon) Guidebook (Isang gabay-aklat sa mga kalamidad (Bagyo) sa Pilipinas sa tatlong Wika)	The Japan Foundation, Manila	23/F Pacific Star Building, Sen. Gil Puyat Avenue corner Makati Avenue Makati City 1226 Philippines Tel: +632 811 6155 to 58	<i>Description</i> This guidebook is a product of the “disaster awareness project” of JFM which also served as the 4th annual teacher training program of the “Course on Japan for High School Classroom Instructions” in 2013. Its premise is that in a globalized society, it is common to have people who speak different languages living together. When the Great East Japan Earthquake hit the northern part of Japan on March 11, 2011, many foreigners from various countries residing or staying in Japan at the time also experienced the earthquake and tsunami. <i>Highlights</i> The material contains the following sections: A Brief History of Philippine Disaster (Typhoon) Hazard Map/ Evacuation Center Philippine Public Storm Signals Rainfall Warnings Useful Expressions during Disaster T(think), I(improvise), P(prepare), S(survive) Emergency hotlines
5. Bata, Kaya Natin 'To! Children can make a difference in building Safe and resilient communities	UNICEF PLAN	Mr. Red Batario Workshop Facilitator Executive Director Center for Community Journalism and Development 4th Floor FSS Building, 89 Scout Castor Street, Barangay Laging Handa, Quezon City Email: red.batario@gmail.com Ms Vicky Eleen Diopenes Workshop Coordinator / Documentor Email: vickydiopenes.asean@yahoo.com	The Orientation Workshop on Child-Centered Disaster Risk Reduction (CCDRR) aims to enhance the knowledge of civil society organizations and other stakeholders on what CCDRR is so that future efforts and plans on disaster risk reduction can further integrate the engagement of children. The specific objectives include: - To discuss and share current initiatives on Child-Centered Disaster Risk Reduction; - To examine and learn various innovative approaches and best practices in engaging children in disaster risk reduction and management, particularly as integrated with local government initiatives.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
6. Comprehensive Household Vulnerability and Risk Analysis Camarines Sur and Catanduanes Bicol Region	ACF International	Action Against Hunger ACF-USA 247 West 37th Street, 10th Floor New York, NY 10018 USA Phone: +1 (212) 967-7800, +1 (877) 777-1420 Fax: +1 (212) 967-5480	The objective of this study is to conduct a comprehensive household vulnerability and risk analysis study in the province of Catanduanes and Camarines Sur and publish the result for local governments, scientific warning agencies, development planning and finance agencies and the local population.
7. The Enigmatic Bengkulu Earthquake of 2007	Institute Technology Bandung	M.T. Zen Emeritus Professor in Geophysical Engineering Department of ITB Jl. Tamansari 64 Bandung 40116, Jl. Ganesha 10, Bandung 40132 Indonesia Tel: +62-22-2500935 AIC Secretariat Jl. Mampang Raya 76 Jakarta Selatan 12790 Indonesia Tel: +6221-7985179 Email: sekien@aseanic.org	The paper discusses various aspects of the Bengkulu 2007 earthquake.
8. Pilot Testing: Disasters Training for Schools	SEAMEO Tropical Medicine and Public Health (SEAMEO TROPMED)	SEAMEO Secretariat Mom Luang Pin Malakul Centenary Building, 4th Floor 920 Sukhumvit Road., Klongtoey, Prakanong Bangkok 10110, Thailand Tel : +66 (0) 2391-0144 Fax : +66 (0) 2381-2587 Email : secretariat(at)seameo.org	The training package has six modules to develop the competencies of school heads in performing their functions effectively before, during and after emergencies.



KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
9. Disaster Resilience Starts with the Young: Mainstreaming Disaster Risk Reduction in the School Curriculum	ASEAN-UNISDR Technical Cooperation	The ASEAN Secretariat Public Outreach and Civil Society Division 70A Jalan Sisingamangaraja Jakarta 12110, Indonesia Tel: (62 21) 724-3372, 726-2991 Fax : (62 21) 739-8234, 724-3504 E-mail : public.div@asean.org www.asean.org	Showcased in this report are good practices in mainstreaming disaster risk reduction in the school curriculum. The good practices compiled in this report offer unique perspectives of and approaches to mainstreaming disaster risk reduction in the school curriculum.
10. Guidance Notes on Safer School Construction Global Facility for Disaster Reduction and Recovery	Global Facility for Disaster Reduction and Recovery GFDRR Secretariat	Global Facility for Disaster Reduction and Recovery GFDRR Secretariat 1818 H Street NW Washington, DC 20433, USA Tel: 202 458 0268 Fax: 202 522 3227 Email: drm@worldbank.org www.gfdr.org INEE Secretariat c/o the International Rescue Committee 122 East 42nd Street, 14th floor New York, NY 10168-1289 Tel: 212 551 2720 Fax: 212 551 3185 Email: info@ineesite.org www.ineesite.org	The Guidance Notes on Safer School Construction presents principles and steps in planning for disaster resilient construction and retrofitting of school buildings. It has four components: 1. General information and advocacy points addressing the rationale for safer school buildings 2. Steps for planning safer school construction and/or retrofitting initiative 3. Basic design principles to make a school building more resilient to hazard forces 4. References to resources for more detailed, technical and context-specific information
11. Legacy of Disasters: The Impact of Climate Change on Children	Save the Children UK	1 St. John's Lane London, EC1M 4AR Telephone +44 (0)20 7012 6400 Fax +44 (0)20 7012 6963	The paper posts that global warming is a fact, and that it will have a dramatic impact on humankind. The likely effects of this warming – increasingly frequent and severe natural disasters, temperature extremes, a global rise in the sea levels – will be unevenly felt and will hit children in developing countries hardest of all. Yet despite political rhetoric about children being our future, the scale of the threat faced by today's children is barely acknowledged. When the danger to future generations of children is assessed, it becomes clear that the need for international action focused on children and climate change is vital.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
12. Education in Emergencies & Post-Crisis Transition Programme: Building Safe Learning Environment – Safe Schools Project	Philippine Report To The Royal Government Of Netherlands	Colin Davis, Deputy Representative Ma. Lourdes de Vera-Mateo, Education Chief Tel: (632) 9010166, (632) 7294524	This is a progress report on the Education in Emergencies & Post-Crisis Transition Programme “Building Safe Learning Environment (BSLE) – Safe Schools Project” of the Philippines for the Royal Government of Netherlands. It highlights the humanitarian and developmental interventions for education in emergencies in the Philippines of UNICEF with the Education Cluster partners.
13. Community Child Centered DRM Mainstreaming DRR in School (Save the Children’s Experience in Bicol)	Save the Children	Matilde Nida Vilches Emergencies Advisor Save the Children in the Philippines	This is a compilation of lesson plan exemplars bearing disaster risk reduction messages. It contains lesson plan for Grades 1 to 6 for all subjects and rating periods. For every lesson plan, a DRR competency is presented to allow the child to learn the many facets of disaster management.
14. San Francisco Unified School District School Site Emergency Plan	SFUSD	Fax: (415) 355-7305	The School Site Emergency Plan is designed for use as a school resource for prevention, mitigation, preparedness, response, and recovery planning and training. It functions as a template for meeting the requirements of the annual Safety Plan Process under Senate Bill 187, Education Code Section 35294, Statutes of 1998, and the National Incident Management System. It is designed to be an active document, updated as necessary to meet site, district, and community needs. The purpose of the School Site Emergency Plan is to provide a unified template for school sites to respond to and recover from an emergency, disaster, or event that disrupts normal school operations.
15. VCA Training Guide Classroom Training and Learning-by-Doing			The purpose of this training guide is to provide VCA facilitators with the necessary tools to train those who will be implementing the actual VCA. It is designed to enable volunteers with little or no experience of community-based participatory information gathering to complete a successful VCA under supervision.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
16. How to Conduct an Earthquake Drill in School	PHIVOLCS		This guide is prepared by the Philippine Institute of Volcanology and Seismology (PHIVOLCS), a service institute of the Department of Science and Technology (DOST) that is primarily mandated to mitigate disasters that may arise from volcanic eruptions, earthquakes, tsunami and other related geotectonic phenomena.
17. Earthquake Safety in Schools: A Primer for Teachers	PHIVOLCS		This guide is prepared by the Philippine Institute of Volcanology and Seismology (PHIVOLCS), a service institute of the Department of Science and Technology (DOST) that is primarily mandated to mitigate disasters that may arise from volcanic eruptions, earthquakes, tsunami and other related geotectonic phenomena.
18. PHIVOLCS and Disaster Risk Reduction in Education: School-Based Earthquake Preparedness	PHIVOLCS		This guide is prepared by the Philippine Institute of Volcanology and Seismology (PHIVOLCS), a service institute of the Department of Science and Technology (DOST) that is primarily mandated to mitigate disasters that may arise from volcanic eruptions, earthquakes, tsunami and other related geotectonic phenomena.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
THEME 2: SCHOOL DISASTER RISK MANAGEMENT			
1. Disaster and Emergency Preparedness: Guidance for Schools	International Finance Corporation World Bank	Health and Education Department 2121 Pennsylvania Avenue, NW Washington, DC 20433 USA www.ifc.org Thomas Davenport Director South Asia International Finance Corporation, World Bank Fax: +1 (202) 522 2398 Email: tdavenport@ifc.org General Inquiries: IFC Corporate Relations Tel: (202) 473-3800 Fax: (202) 974-4384	<i>Description</i> This Handbook is written for administrators, teachers, support staff, and other individuals involved in emergency and disaster preparedness at school. Its purposes are: • To guide administrators and staff in assessing risks and planning and carrying out physical protection measures; • To develop skills and provisions for disaster and emergency preparedness, response, and rapid recovery; • To support schools in developing disaster and emergency plans specific to their local needs and reflecting good practices internationally and nationally. <i>Highlights</i> Includes the following sections: • Assessment and Planning • Physical and Environmental Protection • Response Capacity Development • Practicing, Monitoring, and Improving It also includes checklists for various aspects of disaster preparedness in school.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
2. Disaster Risk Reduction In Emergency - A Guidance Note for Education Clusters and Sector Coordination Group	Global Education Cluster	E-mail: clusters@humanitarianresponse.info	<i>Description</i> The Disaster Risk Reduction (DRR) Guidance Note is a key component of the Global Education Cluster's response to increasing disaster risk. It details practical measures at a policy and programming level in school safety and DRR education, while recognizing the need for implementation in both formal and non-formal settings. DRR measures that can be taken before, during or after an emergency are set out in the Guidance Note. Measures are further broken down to what should happen at national, sub-national and the school and community level. While the Guidance Note is a stand-alone reference, a companion toolbox providing further examples, tools, initiatives and programmes is available through the INEE website http://www.ineesite.org/toolkit/Toolkit.php?PostID=1054 <i>Highlights</i> The strategies recommended in this Guidance Note aim to boost prevention, mitigation and preparedness. Recommended strategies and steps are delineated at the national, sub-national and school/community levels, grouped into two categories: 1) before an emergency and 2) during emergency response and recovery.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
3. Sri Lanka Teaching Disaster Risk Management in Sri Lanka's Schools	ECO-Education World Vision Germany Sector Project "Disaster Risk Management in Development Cooperation"	1295 Bandana Blvd Suite #118 St. Paul, MN 55108 MAP Tel: (651) 222 7691 Email: info@ecoeducation.org Germany Silvia Holten Tel: 49 6172 763 159 Email: presse@worldvision.de Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH - German Technical Cooperation – Education for Social Cohesion c/o Ministry of Education Isurupaya Sri Lanka Tel: +94-114-405055/56 Fax: +94-114-405057 Email: esc-moe@sltnet.lk www.gtz-esc.lk	<i>Description</i> This publication outlines Sri Lanka's new approach to dealing with natural hazards in the context of disaster risk management. Issues addressed: (i) the need for education in disaster risk management and Sri Lanka's policy of teaching disaster safety in schools; (ii) the 'Disaster Risk Management and Psycho-social Care' project; (iii) results from the project, including educational facilities being better prepared for emergencies; and (iv) factors for success, including motivating political decision-makers, coordinating inter- and intra-ministerial cooperation, and utilizing existing structures and processes to integrate disaster safety integration. <i>Highlights</i> This publication consists of six sections: Section 1 Introduction Section 2 explains the value of education in disaster safety with emphasis on taking a broad approach to disaster preparedness, starting at school level Section 3 describes how the project supported the strategy of the nation's education sector Section 4 looks in more detail at the successes achieved. Section 5 discusses the three most important factors that contributed to the success of the project. The summary enumerates the challenges and recommendations.

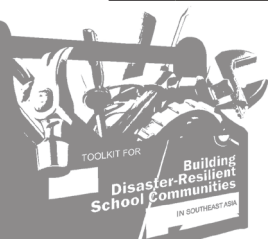
KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
4. Disaster Prevention for Schools Guidance for Education Sector Decision-Makers Consultation version, November 2008	UNISDR, Geneva	UNISDR Palais des Nations CH1211, Geneva, Switzerland Tel: +41 229178907-8 Fax: +41 229178964 Email: isdr(at)un.org www.unisdr.org Marla Petal 3 rue Henri-Blanvalet, 1207 Genève, Switzerland Email: mpetal@imagins.com	<i>Description</i> Guidance document for school administrators, teachers, education authorities, school safety committees and similar groups. Introduces disaster impacts on and prevention for schools; creating and maintaining safe learning environments; teaching and learning disaster prevention and preparedness, educational materials and teacher training, and developing a culture of safety. The material covers the following topics: • Disaster Impacts on Schools • Disaster Prevention for Schools • Assessing School Safety • Disaster Resistant School Construction • Prioritizing and Financing Retrofit and Replacement • Building Use and Maintenance • School Disaster Management • Protecting Educational Access with Continuity Planning • Tools for Maintaining Safe Learning Environments • Formal Curriculum for Disaster Prevention and Preparedness • Co curricular Education in Disaster Prevention and Preparedness • Educational Material • Tools for Adapting Educational Materials • Including all Children • Teacher Training and Capacity Development • Children as Disaster Reduction Catalysts • Local Organization – Focus on School Community Involvement • Sub-national Organization – Focus on Sustainability and Scaling up • National Leadership – Focus on Policy Setting • Regional and Global Support – Focus on Knowledge Sharing • Research and Evaluation

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
5. Disaster Risk Reduction through Schools: A Groundbreaking Project	Action Aid	Tel: +44 (0)20 7561 7538 Email: emergencies@actionaid.org www.actionaid.org www.unisdr.org www.reliefweb.int	<i>Description</i> Action Aid's five-year Disaster Risk Reduction through Schools project (2006-11) is operational in Bangladesh, India, Nepal, Ghana, Malawi, Kenya, and Haiti and will be replicated in the Democratic Republic of Congo and Zambia. Aims of the project: • Support the implementation of the Hyogo Framework for Action through innovative, grassroots DRR programmes • Build local communities' capacity to act on their own behalf and secure their basic rights, using Participatory Vulnerability Analysis • Advocate for governments to uphold their responsibilities to protect their populations <i>Highlights</i> Presents the key accomplishments of the project and progress to date. A mid-term independent review indicates that the project is making concrete contributions to all five pillars of the Hyogo Framework for Action. The project has already facilitated the transformation of over 100 local schools into community hubs for implementing disaster prevention measures.



KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
6. Education Cluster Strategic Plan 2011-2013	ECWG members 2010-2011:	Robert C. "Craig" Cook, MN '01, Chairman Explorers Club Washington Group Email: jk0308@aol.com Action Aid UK Supporter care Chataway House, Leach Road Chard, Somerset TA20 1FR Tel: +44 (0)1460 238000 Fax: +44 (0)1460 67191 Email: supportercare@actionaid.org Action Aid UK Head office 33-39 Bowling Green Lane, London, EC1R 0BJ, UK Tel: +44 (0)20 3122 0561 Fax: +44 (0)20 7278 5667 Email: supportercare@actionaid.org Corporate Headquarters American Institutes for Research 1000 Thomas Jefferson Street, NW Washington, D.C. 20007 Tel: (202) 403-5000, (877) 334-3499 Fax: (202) 403-5001	<i>Description</i> The Education Cluster Strategic Plan provides a framework to better focus and support the collective action of organizations involved in education preparedness, response and recovery. This plan elaborates the specific role and contribution of the Education Cluster and complements the INEE plan, covering the same period from 2011-2013. <i>Highlights</i> The content of the plan has been designed around four outcomes, encompassing twelve core initiatives. These reflect the priority areas of work and as part of an annual work plan enable allocation of responsibility for related outputs and activities across key actors.

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7. Community-Based Disaster Risk Reduction Project of Bicol Region, Philippines: Contingency Planning sa Barangay at Disaster Management Planning sa Eskwelahan tungo sa Pagpapatibay ng Komunidad laban sa Kalamidad “Handa na ba Kayo?”	ACF International - Philippine Mission Save the Children DRR Project Team	Mr. Martin R. Parreno National Nutrition Coordination Unit 2802, 28th Floor, 88 Corporate Center, 141 Sedeno St., Salcedo Village, Makati Philippines 1227	<i>Description</i> ‘Are you Ready/Prepared?’ is a training manual developed for at risk communities, for national and local government units, and other organizations focused on disaster risk reduction. <i>Highlights</i> This manual is based on the experiences of communities, schools, and local governments which joined the Strengthening Assets and Capacities of Communities and Local Governments for Resilience to Disasters (ACCORD). The first of four modules focuses on community-based disaster risk management; it tackles basic concepts, hazards, vulnerability, rights based approach, and contingency planning.



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8. Community-Based Disaster Risk Management	Asian Disaster Preparedness Center United Nations Economic and Social Commission for Asia and Pacific European Commission Humanitarian Aid Department (ECHO)	Ms. Vicky Puzon-Diopenes Information Manager Asian Disaster Preparedness Center (ADPC) P.O. Box 4, Klong Luang, Pathumthani 12120, Thailand Tel.: (66-2) 516-5900 to 5910 Fax: (66-2) 524-5360 E-mail: adpc@adpc.net www.adpc.net UNESCAP United Nations Building, Rajadamnern Nok Avenue, Bangkok 10200, Thailand Tel.: (66-2) 288-1450 Fax: (66-2) 288-1059 http://www.unescap.org/ European Commission Humanitarian Aid Office 200 rue de la loi B-1049 Brussels, Belgium Tel.: (32 2) 295 4400 Fax: (32 3) 295 4572 E-mail: echobangkok@ECHO-Bangkok.org	<i>Description</i> The objective of these Critical Guidelines is to enable development practitioners to follow common principles, processes and approaches in the identification, design, implementation, monitoring and evaluation of community-based projects on disaster risk management. <i>Highlights</i> The purpose of the CBDRM Field Practitioners' Handbook is to help equip CBDRM or CBDRM practitioners with theories and practical tools that can be applied in community work. The Handbook is divided into three parts: Part 1 Community-Based Disaster Risk Management: A Framework for Reducing Risk. The purpose of the first part is to clarify the basic concepts of CBDRM. Part 2 Resource Packs The second part covers essential tools for implementing various stages of the CBDRM process. It provides step by step instructions to facilitate specific activities. The topics covered are Participatory Project Cycle Management, Participatory Disaster Risk Assessment and Action, Formation and Training of Community Disaster Risk Management Organizations and Participatory Monitoring and Evaluation. Part 3 Major Considerations in Undertaking CBDRM The third part discusses Gender Conscious Approach to CBDRM and Disaster Risk Communication. There are three key concepts introduced in this handbook: • Community-Managed Implementation • Participatory Disaster Risk Assessment and Action • Gender Conscious Approach to Disaster Risk Reduction

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9. Reducing the Risks: A Framework for DRR in South-East Asia	International Federation of Red Cross and Red Crescent Societies South East Asia Regional Office, Bangkok	Mr. Al Panico Head of Operation International Federation of Red Cross and Red Crescent Societies P.O. Box 303 CH-1211 Geneva 19, Switzerland Tel: +41 22 730 42 22 Fax: +41 22 733 03 95	<i>Description</i> This document presents a Southeast Asia-specific disaster risk reduction framework that outlines the Red Cross Red Crescent approach to DRR. This framework is intended for the Red Cross and Red Crescent National Societies of Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste and Vietnam and focuses on the following hazards: typhoon/cyclone, (flash) flood, industrial disaster, drought, epidemic, landslide, wave/surge, fire, extreme temperature, earthquake and volcanic eruption, among others. <i>Highlights</i> Background on the framework Red Cross Red Crescent Commitments to DRR Southeast Asia Context Hazard and vulnerability trends in South-East Asia Status of Red Cross Red Crescent Work on DRR in Southeast Asia Roadmap on how the organization plans to achieve “safer and more resilient communities” in Southeast Asia
10. A Framework For Measuring Disaster Risk Reduction (DRR) Initiatives	Chris Piper Senior Training & Disaster Risk Management (DRM) Coordinator	FDC Head Office FDC House 137 Melbourne Street South Brisbane QLD 4101 Tel: +61 7 3217 2924 Fax: +61 7 3846 0342 Email: info@fdc.org.au http://www.fdc.org.au FDC Pacific Regional Office 6 Macgregor Road Suva, Fiji Islands Tel: +679 3100 855 Email: info@fdc.org.au ChrisPiper@fdc.org.au	<i>Description</i> This paper is an attempt to develop a workable Monitoring and Evaluation Framework for Disaster Risk Reduction. The paper is based on the premise that DRRM/DRR strategic planning should draw on best practice as carried out by governments and local communities at risk - by the former, as they develop their DRRM Plans at all levels; and by the latter as they in turn focus on community-based disaster risk management projects. <i>Highlights</i> The paper discusses the DRRM cycle, key global disaster related statistics, DRR programming, DRRM planning, and idealized DRR Solution Tree.

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11. Developing Resilient Schools and Resilient Students	Metropolitan Educational Research Consortium	Metropolitan Educational Research Consortium Virginia Commonwealth University, School of Education School of Education/MERC Oliver Hall - 4th floor 1015 W. Main Street P O Box 842020 Richmond, VA 23284-2020 Tel: 804.828.0478 Fax: 804.828.0479 Dr. James McMillan Exec. Director Email: jhmcmill@vcu.edu	<i>Description</i> Recent research by the Metropolitan Educational Research Consortium has led to the development of a resiliency model that helps explain why some at-risk students actually do well in school. The model suggests that four environmental factors come together to form a psychological support system that reinforces the personal traits that lead to resilience. <i>Highlights</i> Discusses the resiliency model and the various elements that nurture the personality traits leading to resiliency. Sections discuss how to operationalize the resiliency model and implement it in school.
12. Re-shaping Policy and Institutions for Integrating Climate and Disaster Resilience	Strengthening Climate Resilience	Richard Manning Chairman, Board Trustees www.csdrm.org Eldis Communities Institute of Development Studies (IDS) At the University of Sussex Brighton, BN1 9RE, UK Tel: +44 (0)1273 915815 Email: eldiscommunities@ids.ac.uk	<i>Description</i> This policy brief shares critical insights and learning from the second year of the Strengthening Climate Resilience (SCR) programme. <i>Highlights</i> The policy brief (i) introduces the Climate Smart Disaster Risk Management (CSDRM) approach and its three pillars of action; (ii) presents the results of the programme on localizing national policy and connecting knowledge for integrated responses; and (iii) proposes recommendations for national policy makers and donors.

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13. Experiences with and Preparedness for Emergencies and Disasters among Public Schools in California	National Association of Secondary School Principals, NASSP Bulletin	Ms. Megumi Kano Senior Researcher 405 Hilgard Ave, Los Angeles, CA 90095, United States bul.sagepub.com	<i>Description</i> This study assesses school experiences with, and preparedness for, emergencies and disasters. <i>Highlights</i> Data were collected by mail survey from 157 public schools in California, majority of which have experienced emergencies in recent years. Although respondents generally feel their school is well prepared for future emergencies, limitations are identified in their disaster plans, availability of emergency supplies, training, and inter-agency coordination, with some differences between primary and secondary schools.
14. Assessment Tool for Evacuation Center Services	National Disaster Risk Reduction and Management Council (NDRRMC) Office of Civil Defense, Department of Defense	Camp General Emilio Aguinaldo, EDSA Corner Bonni Serrano Avenue, Quezon City, Metro Manila, Philippines Tel: +63(2)9125296 Email: opcen@ndrrmc.gov.ph	<i>Description</i> A simple tool to enhance disaster preparedness and response capabilities at all levels, namely, policy-making, coordination, integration, supervision, monitoring and evaluation. <i>Highlights</i> Includes forms to collect and summarize data on: (Form 1) Evacuation Center Services (Form 2) Evacuation Center Demographic Data (Form 3) Community Evaluation Sheet (Form 4) Early Recovery and Medium Term Services



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15. Disaster Risk Reduction Resource Manual	Asec. Bro. Armin Luistro FSC Department of Education, Philippines with UNICEF Philippine Country Office, 2008	Department of Education DepEd Complex Meralco Avenue, Pasig City, Metro Manila, Philippines Tel: +632 635-9822, 631-0673 Fax: +632 635-9826 www.deped.gov.ph	<i>Description</i> The Manual provides school administrators, supervisors and school teachers with information needed to reduce risk and make schools safer. The Department of Education (DepEd), through the Technical Working Group of the Department's Disaster Risk Reduction Management, conceptualized the promotion of disaster awareness to help school communities manage impacts and reduce the risk of threats from natural and human-made disasters. <i>Highlights</i> This manual provides procedures, following the 4-phase strategy (Mitigation, Preparedness, Response, and Rehabilitation), that a school may employ before, during and after the occurrence of a disaster. It offers safeguarding mechanisms to protect and preserve personnel and students, DepEd property, school facilities, equipment, fixtures, instructional materials and school records. Chapter 1 – Overview of DRR Chapter 2 - Natural Hazards Chapter 3 - Human Induced Hazards Chapter 4 - Risk Profile of the Philippines Chapter 5 - The Philippine Disaster Risk Management System Chapter 6 - Ensuring Continuity of Instruction Chapter 7 - Ensuring Safety of DepEd Properties Chapter 8 - Monitoring and Evaluation of the Disaster Risk Management Implementation
16. Regional Training Course on Disasters for School Heads/Officials	World Health Organization Western Pacific	P.O. Box 2932 1000 Manila Philippines Tel: +63 2 528 8001 Fax: +63 2 521 1036 or 526 0279 For media inquiries, please contact: Tel: +63 2 528 9991 Fax: +63 2 528 9069 pio@wpro.who.int	<i>Description</i> A handbook for planning for emergencies and disasters in the school setting for use by school heads and officials. <i>Highlights</i> Includes the following sections: • Overview • Educational Goal • Course Objectives • Educational Philosophy and Teaching Learning Strategy • Course Modules • Tentative Schedule • Suggested Participants • Evaluation Indicators and Methods

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17. School Safety Manual	Asian Disaster Preparedness Center with the UNDP and the European Union, 2008	www.adpc.net Rohan Cooray Project Coordinator Tel: +94777-147-222 Email: rohancooray@gmail.com	<i>Description</i> This manual is intended to be used by the school principals, teachers, and students, parent-teacher associations and other concerned authorities for safe schools. <i>Highlights</i> Chapter 1 is an introduction to school safety with a discussion of the 5Ws and 1H of school safety, as well as the scope and limitations of the manual. The succeeding chapters tackle each step to be taken to achieve school safety: Chapter 2 Step I: Orientation of Teachers, Students and Others on Disaster Management and Mass Awareness in School Chapter 3 Step II: Constitution of the School Disaster Management Committee Chapter 4 Step III: Vulnerability and Capacity Assessment of the School Chapter 5 Step IV: School Disaster Management Plan (content and the hazard map) Chapter 6 Step V: Constitution of the Disaster Management Team and Capacity Building Chapter 7 Step VI: Dissemination of the School Disaster Management Plan Chapter 8 Step VII: Mock Drill Chapter 9 Step VIII: Evaluate and Update the Plan Annexes include Do's and Don'ts of Selected Disasters and Quick Reference for School Safety Indicators
18. Building Resilient Cities in the Philippines	Earthquake and Megacities Initiative (EMI), Inc.	2F Puno Bldg. Annex 47, Kalayaan Avenue, Diliman, Quezon City, 1101 Philippines www.emi-megacities.org Dr. Fouad Bendimerad Chairman Prof. Friedemann Nerzel Vice Chairman of the Board Mr. Jerome Zayas Technical Manager Email: jeromez@emi-megacities.org	<i>Description</i> EMI partners with local government units to provide the technical knowledge and capacity necessary to effectively comply with RA 10121. The material aims to guide LGU's to establish their LDRRM (local disaster risk reduction management) Office, set up their LDRRM system, develop their LDRRM Plan while optimizing their existing DRRM investments and resources, conduct hazards, vulnerability, and risk assessment, and build capacity and competency. <i>Highlights</i> Discusses the formation of the LDRRMO Phases of development of the LDRRM plan Activities for supporting LGUs



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19. What's the Plan, Stan?	Ministry of Education (New Zealand)	Level 3 (Reception) 45-47 Pipitea Street Thorndon Wellington Tel: +64 4 463 8000 Fax: +64 4 463 8001 Email: emergency.management@dia.govt.nz www.whatstheplanstan.govt.nz	<i>Description</i> What's the Plan, Stan is an initiative which aims to support teachers to develop their students' knowledge, skills and attitudes to respond to and prepare for an emergency. It serves as a guide for families for emergency preparedness. <i>Highlights</i> The Plan focuses on: • earthquakes • tsunami • volcanic eruptions • storms • floods • non-natural disasters
20. Building a Culture of Safety and Resilience to Disasters through Schools (A briefing paper)	Action Aid International	PostNet Suite 248, Private Bag X31, Saxonwold 2132, Johannesburg, South Africa Tel: +27 11 731 4500 Fax: +27 11 880 8082 Email: mail.jhb@actionaid.org Asia Hub Room B201, 2nd Floor, 60/1, Monriri Building, Samsennai, Phayathai, Bangkok 10400, Thailand Tel: +66 2 615 5130-3 Fax: +66 2 615 5134 Email: mail.asia@actionaid.org	<i>Description</i> This Action Aid briefing paper draws from a review of the role of education and knowledge in disaster risk reduction, "Let our children teach us!", prepared by Ben Wisner (2006). The review was commissioned by Action Aid on behalf of the International Strategy for Disaster Reduction (ISDR) system Thematic Cluster/Platform on Knowledge and Education. <i>Highlights</i> This briefing paper sets out evidence that proves governments cannot ignore the opportunity that schools and education offer in reducing the risk of hazards and disasters. The paper then sets out practical recommendations to help governments meet their commitment. These recommendations aim to facilitate government dialogue with citizens and guide the creation or integration of a national policy on disaster risk reduction.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
21. Approaches in Disaster Risk Reduction – Experiences, Present Status and Future Requirements	Active Learning Network for Accountability and Performance in Humanitarian Action (ALNAP)	Hari Krishna Humanitarian Country Representative (India) and Disaster Risk Reduction Advisor-Oxfam America ALNAP Overseas Development Institute 203 Blackfriars Road London SE1 8NJ United Kingdom Tel: + 44 (0)20 7922 0388 Fax: + 44 (0)20 7922 0399 Email: aln@aln.org	<i>Description</i> This paper reviews disaster preparedness initiatives in India. Quoting examples from Cuba's disaster preparedness programs, this paper emphasizes the need for adopting disaster risk reduction as a culture and conscious practice. <i>Highlights</i> Each sub-section discusses the various Approaches of Disaster Risk Reduction with further elaboration on the following: Oxfam Approach to Disaster Risk Reduction, UNICEF Approach of Community-Based Disaster Preparedness in West Bengal, UNDP's Community Level Risk Management Program, and the Culture of Preparedness - CUBA Model.
22. Community-Based Best Practices For Disaster Risk Reduction	United Nations Development Programme (UNDP) European Commission Humanitarian Office (ECHO)	Mr. Ndolamb Ngokwey Resident Representative United Nations Development Programme One United Nations Plaza New York, NY 10017 USA Tel: +1 (212) 906-5000 Email: publications.queries@undp.org	<i>Description</i> This compilation provides a comprehensive review and analysis of community-based best practices for reducing the risk of disaster from natural hazards affecting Southeast Africa and the Southwest Indian Ocean. It also provides new examples of how various actors and agencies have successfully implemented interventions to reduce risks from prevalent hazards and minimize damage and losses to property and livelihood. <i>Highlights</i> Chapter 1 discusses risks, hazards and vulnerabilities and how the multi-hazard approach in the targeted countries has been applied. Chapter 2 focuses on building in hazardous zones. For each country project, there is a discussion on the initiative, goals and objectives, lessons learned and potential for replication. Chapter 3 features the best practices in local level risk management, institutional support and community, community-based disaster preparedness project, community-based disaster risk reduction, sustainable natural DRR through policy change, community risk management, community-based disaster preparedness projects, and institutionalization of risk management. The last section focuses on trends in climate change adaptation and DRR, and how scientific knowledge is used in programme design.

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23. Building Disaster Risk Reduction in Asia: A Way Forward (ADPC Looks Ahead To 2015)	Asian Disaster Preparedness Center	Rohan Cooray Project Coordinator Disaster Management Center Project Office Tel: +94777-148-222 E-mail: rohancooray@gmail.com www.adpc.net	<i>Description</i> The paper discusses how ADPC will continue to emphasize the priority areas of informing and involving communities, support the application of expertise and investment to improve the built environment and the development of institutions, which will promote, guide and implement DRM. ADPC also presents its intent to address emerging risk issues including chemical, biological and radio-nuclear risks and conservation of historic areas through domestic capital markets in financing the improvements in the built environment. <i>Highlights</i> The paper covers promoting regional cooperation in DRRM; mainstreaming DRRM into development policy, planning, and implementation; community-based approaches to DRRM; disaster risk communication; investing, good governance, and capacity building for DRRM; managing public health risks; and managing climate variability and change.
24. Disaster Risk Reduction: NGO Inter-agency Group Learning Review	Eldis Communities Institute of Development Studies (IDS)	John Twigg Principal Research Associate Eldis Communities Institute of Development Studies (IDS) At the University of Sussex Brighton, BN1 9RE, UK Tel: +44 (0)1273 915815 Email: eldiscommunities@ids.ac.uk	<i>Description</i> This document is an outcome of disaster risk reduction projects carried out by Action Aid, Christian Aid, Practical Action, Plan and Tear Fund and funded by the UK Department for International Development (DFID). It used a 'peer review' approach where each agency offered significant project lessons to the group for discussion, with the most common and important themes selected for inclusion as learning points in this final report. <i>Highlights</i> The report was developed around four thematic areas: (i) choices and priorities in DRR; (ii) vulnerability and risk assessment; (iii) scaling up; and (iv) governance. It is aimed at 'contributing to the evidence base on disaster resilience and support future learning, influencing and fundraising by synthesizing and sharing learning from the portfolio of DRR projects undertaken by the group.'

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25. Private Sector Activities in Disaster Risk Reduction Good Practices and Lessons Learned	United Nations International Strategy for Disaster Reduction Secretariat (UNISDR)	Ms. Stefanie Dannenmann Programme Officer, UNISDR Platform for the Promotion of Early Warning Palais des Nations CH1211 Geneva, Switzerland E-mail: dannenmann@un.org	<i>Description</i> The UNISDR has collected original contributions that provide new insights into public-private partnerships based on disaster risk reduction work. This good practice publication focuses on projects that have shown innovative qualities and results, as well as potential for adoption on a broader scale. The goal is to foster public-private partnerships for disaster risk reduction and contribute to sustainable socio-economic development by reducing risk and vulnerability to natural hazards. <i>Highlights</i> This publication highlights seventeen examples of how the private sector engages in partnerships to reduce the risk of disaster. An attempt has been made to divide the examples into three partnership types. Many examples have been submitted from the Asia Region, especially from Japan where the private sector shows a strong commitment in disaster risk reduction. A fundamental lesson coming from these experiences is that disaster reduction partnerships work best when there is a clear vision, coordination and available funding. For ease of reference, each good practice is presented in the same format beginning with a short abstract and ending with the potential for replication.
26. A Guide To Community-Based Disaster Risk Reduction in Central Asia	United Nations International Strategy for Disaster Reduction Secretariat (UNISDR)	UNISDR Palais des Nations CH1211 Geneva, Switzerland Tel: +41 229178907-8 Fax: +41 229178964 Email: isdr@un.org www.unisdr.org	<i>Description</i> The present booklet covers only a small part of the broad knowledge and expertise now existing globally in the area of disaster management and disaster reduction. <i>Highlights</i> • Introduction to Disasters, Global Trends, Central Asia • Disaster Risk Reduction • Disaster Management Cycle • Hazard Assessment, Risk Assessment, Risk Awareness • Community-Based Disaster Risk Reduction Concept, Community-Based Approach to Disaster Risk Reduction, Disaster Risk Reduction as Part of Local Planning, Early Warning Systems • Public Awareness Starts at an Early Age, School Safety, Roles and Responsibilities of Media • Summary



KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
27. Mainstreaming Disaster Risk Reduction in Local Governance	Department of Interior and Local Government (DILG) Deutsche Gesellschaft für Technische	Department of Interior and Local Government (DILG) DILG NAPOLCOM Center EDSA corner Quezon Avenue, Quezon City, Philippines Tel: +632 925-0330 / 925-0331 Fax : +632 925-0332 www.dilg.gov.ph	<i>Description</i> Contains best practices in disaster risk reduction in different provinces of the Philippines. <i>Highlights</i> The Philippine Situation provides an overview of disaster management in the country. Best Practices in Disaster Risk Reduction features the different best practices in DRRM in both urban and rural settings in the Philippines. Initiatives in Mainstreaming Disaster Risk Reduction in Local Governance highlights examples of how DRR is mainstreamed in various aspects of local governance such as land use planning, local development planning, and schools. Experiences in community-based DRRM programs in Asia are also featured. Disaster Preparedness and Early Warning features experiences in setting up early warning systems for specific hazards and in disaster preparedness programs of Asian countries. Financing Disaster Risk Reduction discusses current and potential strategies to fund DRR programs. Outlook on Future Initiatives features future international DRR initiatives and Proposed Comprehensive Legislative Bill on DRRM of the Philippines.
28. Indigenous Knowledge for Disaster Risk Reduction: Good Practices and Lessons Learned from Experiences in the Asia-Pacific Region	UNISDR	Ms. Christel Rose Regional Program Officer UN Conference Centre Building, Rajdamnern Nok Avenue 10200 Bangkok, Thailand Regional Program Officer UN ISDR Asia and Pacific Email: rosec@un.org www.unisdr.org	<i>Description</i> The publication aims to build awareness about indigenous knowledge as an effective tool for reducing risk from natural disasters. <i>Highlights</i> This publication presents a collection of 18 indigenous risk reduction practices in several communities in the Asia-Pacific region.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
29. Reducing Risks, Saving Lives: Save the Children's Approach to Disaster Risk Reduction and Climate Change Adaptation	Save The Children	Mr. Michael Novell Field Office Director 1 Encarnacio St. corner Lapu-Lapu Avenue, Magallanes Village, Makati City, Metro Manila www.savethechildren.net New York advocacy office 777 United Nations Plaza #3A, New York, NY 10017, USA Tel: +1 212 370 2461 Email: debra.jones@savethechildren.org	<i>Description</i> Contains Save the Children's approach to DRR and CCA. <i>Highlights</i> Features definition of climate change adaptation, and the work of SC on DRR and CCA which covers five key areas: • Preparedness activities • Early warning activities • Mitigation activities • Activities that promote resilience • Activities that support communities' adaptive capacity to predicted climate change trends It also discusses how SC reduces risk through five areas of focus: Advocacy and Policy, Institution strengthening, Community, and Children's Role in Disaster. The material also enumerates SC's recommendations to governments and other sectors.
30. Promoting Traditions, Reducing Risks: A Community-Based Disaster Risk Reduction Project in West Bengal	UNICEF	Srdjan Stojanovic, UNICEF India Tel: +91 011 24606220 E mail: stojanovic@unicef.org	<i>Description</i> The main objective of the Community-Based Reduction Project is to build the capacity and resilience of vulnerable communities in disaster-prone areas and enable them to cope with the adverse impact of floods on life and livelihood. <i>Highlights</i> The project highlighted that "promoting traditional coping mechanisms" is the sustainable way forward to reduce vulnerability and mainstream CBRP to address the needs of the most vulnerable communities. The project identified and adapted natural mitigation measures to local contexts.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
31. UNICEF and Disaster Risk Reduction	UNICEF	Srdjan Stojanovic, UNICEF India Tel: +91 011 24606220 E mail: stojanovic@unicef.org	<i>Description</i> Discusses the projects and programs of UNICEF on DRR. <i>Highlights</i> Includes definition of DRR, importance of DRR to UNICEF, disasters and children's rights, UNICEF's approach to DRR, UNICEF's DRR goals, the link of DRR and the WASH sector, the global advocacy on DRR and children and DRR and education. The material also provides examples of UNICEF's work on DRR in various countries.
32. Disaster Risk Reduction in the Information Age	InfoDev	The World Bank 1818 H Street NW Washington, DC 20433, USA Email: info@infodev.org	<i>Description</i> The Disaster Risk Reduction in the Information Age (RISK) Project provides knowledge about innovative and effective uses of Information and Communication Technologies to improve community resilience in the face of natural disasters. The project works in tandem with the World Bank's Global Facility for Disaster Risk and Reduction and the Bank's regional disaster risk management response teams. <i>Highlights</i> This is a documentation of the proceedings of a two-day workshop training which covered the following topics: • challenges and key issues • best practices and critical success factors • latest trends, solutions and technologies • policy recommendations and opportunities for mainstreaming and more effective use of information and communication technologies (ICT) in the World Bank disaster risk management portfolio • how to make ICT a transformational enabler of better disaster risk management • critical success factors for effective application of ICT in this area • role of open source, mobile and other Web 2.0 tools • role of public-private partnerships

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
33. Local Governments and Disaster Risk Reduction Good Practices and Lessons Learned	UNISDR	Mr. Michele Cocchiglia Programme Officer, UNISDR secretariat Palais des Nations CN1211 Geneva, Switzerland E-mail: cocchiglia@un.org http://www.unisdr.org Dhruba Gautam, PhD Email: drgautam@nlink.com.np, drgautam@gmail.com, ndrcnepal@yahoo.com	<i>Description</i> This collection of good practices shows how building the capacity of local institutions is key to sustaining disaster risk reduction, and demonstrates the immediate impact of local and national political commitment to institutionalize disaster risk reduction. It also showcases collaboration between local and national governments, civil society organizations and international agencies. <i>Highlights</i> Bangladesh: The Comprehensive Disaster Management Programme: Empowering local governments Canada: The Ontario Provincial Hazard Identification and Risk Assessment El Salvador: Strengthening connections between communities and local government Fiji: Beyond early warning and response: Risk-sensitive local development France: Memo' Risks: Students survey community risk knowledge Indonesia: Many partners, one system: An integrated Flood Early Warning System (FEWS) for Jakarta Indonesia: The joint management of Merapi Volcano Japan: Watch and learn: Children and communities study mountain and urban risks Nepal: Community-based poverty reduction for disaster risk reduction Pakistan: Institution-building and capacity building for local governments Peru: Empowering local government as leaders in disaster reduction and recovery Philippines: A permanent provincial coordinating office for disaster risk reduction South Africa: Developing and managing water resources Vietnam: Building local capacity and creating a local government network for cyclone risk



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34. Characteristics of a Disaster-Resilient Community	Action Aid British Red Cross Christian Aid Practical Action Plan UK Tear fund	Email: j.twigg@ucl.ac.uk	<i>Description</i> This guidance note is for government and civil society organizations working on disaster risk reduction initiatives at community level, in partnership with vulnerable communities. It shows what a 'disaster-resilient community' might consist of and provides some ideas about how to progress towards resilience. <i>Highlights</i> The main section is a series of tables setting out the characteristics of a disaster-resilient community. These are organised under five areas of DRR intervention based on a framework developed by the UN International Strategy for Disaster Reduction: 1. Governance 2. Risk assessment 3. Knowledge and education 4. Risk management and vulnerability reduction 5. Disaster preparedness and response The tables also indicate the main characteristics of the 'enabling environment' necessary for community-level initiatives to succeed.

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35. Natural Hazards, UN Natural Disasters	The World Bank The United Nations	The World Bank 1818 H Street NW Washington DC 20433 Thomas Davenport Director South Asia International Finance Corporation, World Bank Tel: 202-473-1000 Fax: +1 (202) 522 2398 Email: tdavenport@ifc.org , feedback@worldbank.org www.worldbank.org	<i>Description</i> The report looks at disasters through an economic lens. Economists emphasize self-interest to explain how people deal with prevention, insurance, and coping. But lenses can distort as well as sharpen images, so the report also draws from other disciplines: psychology to examine how people may misperceive risks, political science to understand voting patterns, and nutrition science to see how stunting in children after a disaster impairs cognitive abilities and productivity as adults much later. Peering into the future, the report shows that growing cities will increase exposure to hazards, but that vulnerability will not rise if cities are better managed. The intensity and frequency of hazards in the coming decades will change with the climate, and the report examines this contentious subject, acknowledging all the limitations of data and science. <i>Highlights</i> Discusses four main findings: First, a disaster exposes the cumulative implications of many earlier decisions, some taken individually, others collectively, and a few by default. Second, prevention is often possible and cost-effective. Third, many measures—private and public—must work well together for effective prevention. Fourth, the exposure to hazards will rise in cities, but greater exposure need not increase vulnerability. The effects of climate change on increasing vulnerability to hazards are also included in the discussion.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
36. Changing Climate, Changing Disasters	Strengthening Climate Resilience	Climate Change Team Strengthening Climate Resilience Institute of Development Studies Brighton BN1 9RE UK Tel: +44 (0)1273 606261 Email: info@cslrm.org www.cslrm.org	<i>Description</i> Discusses how the Climate Smart Disaster Risk Management (CSDRM) approach helps to tackle disasters, poverty and adaptation through improved integration. <i>Highlights</i> The guide supports disaster risk practitioners to: (i) connect with colleagues in development and climate change adaptation by creating a shared 'language' of resilience; (ii) assess existing or develop new organisations, policies or programmes and build partner networks to fill capacity gaps; (iii) learn lessons and understand what 'climate smart' looks like in different contexts such as conflict-affected areas; (iv) use climate smart indicators and follow integration pathways that deepen existing ways of working; and (v) empower affected communities to learn and reflect by including them in discussions about their vulnerabilities and risks.
37. Strengthening Climate Resilience: The Southeast Asian Experience	Strengthening Climate Resilience	www.cslrm.org Eldis Communities Institute of Development Studies (IDS) At the University of Sussex Brighton, BN1 9RE, UK Tel: +44 (0)1273 915815 Email: eldiscommunities@ids.ac.uk	<i>Description</i> This report shares the journey of various actors in Southeast Asia who engaged in the Strengthening Climate Resilience programme's aim of better comprehending the challenges for disaster risk management presented by a changing climate. It shares the learning gained from and with several stakeholders on how best to define what climate smart disaster risk management entails. <i>Highlights</i> The report presents a brief description of the CSDRM approach and its application in the region. This is followed by the important lessons learnt from validating the CSDRM approach in Southeast Asia; advocating for a CSDRM approach; and conclusions on the evolving nature of CSDRM in the region. An annex presents case studies of the SCR partners in Southeast Asia, and the governance landscape for DRM and CCA policy in the three target countries.

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38. Mainstreaming Disability into Disaster Risk Reduction: A Training Manual	Handicapped International, Nepal 2009	Tel: +977 (1) 4378482 / 4374609 Fax: +977 (1) 4376983 Email: hinepal@hi-nepal.org www.handicap-international.org	<i>Description</i> This manual aims to build capacities to mainstream disability in disaster risk reduction. It enables those working in disaster management to take disability systematically into account in planning and implementation and to advocate for and technically support disability-inclusive disaster risk reduction. <i>Highlights</i> Includes the following sections: Session 1: Introduction to Disability Session 2: National and International Frameworks and Policies on Disability Session 3: Disability and Disaster Management: A Situation Analysis Session 4: Mainstreaming Disability into Disaster Risk Reduction: Practical Recommendations Session 5: Making IEC Materials Disability-Inclusive Session 6: Networking – Referring Persons with Disabilities to Specialist Services
39. Preliminary Database “Good Practices on Recovery (IRP)” and Total Disaster Risk Management (TDRM)-Good Practices	International Recovery Platform (IRP) Asian Disaster Reduction Center(ADRC)	International Recovery Platform Secretariat Hitomiraikan 5F 1-5-2 Wakinohamakaign-dori Chuo-ku, Kobe 651-0073, Japan Tel: +81-78-262-6041 Fax: +81-78-262-6046 E-mail: info@recoveryplatform.org www.recoveryplatform.org	<i>Description</i> The project’s objective is to quickly and effectively provide the key persons in charge of planning and implementing the recovery activities of national and local governments with useful, important and on-target knowledge for post disaster recovery through cross-disaster analysis of lessons learned from the recovery experiences from recent major disasters. <i>Highlights</i> Discusses the focus area of the International Recovery Platform, key activities for knowledge management, advocacy, training, capacity building, and enhancement of recovery operations. There is a link to 90 data resources. The material on Total Disaster Risk Management Good Practices features 28 good practices arranged according to disaster management phases.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
40. Disaster Risk Management Working Concept	Deutsche Gesellschaft für Technische	Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH Dag-Hammarskjöld-Weg 1-5 P.O.Box 5180 D-65726 Eschborn Tel: + 49 (0) 6196-79-0 Telefax: + 49 (0) 6196-79-6170 http://www.gtz.de	<i>Description</i> GTZ aims to bridge the gap between the perceived challenges and the necessary practical steps for addressing them. The present working concept provides a review of current approaches and GTZ services in disaster risk management. Intended audience includes relevant professionals, national and international institutions and organizations, and GTZ staff. <i>Highlights</i> Features discussion on: 1. Disasters as a challenge for developing countries and development cooperation 2. Approach and definitions 3. From disaster relief to disaster risk management 4. GTZ activities in disaster risk management 5. GTZ services

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
41. Participatory Vulnerability and Adaptation Assessment: The Sorsogon City Experience	UN Habitat	UN Habitat Headquarters P.O. Box 30030, GPO, Nairobi, 00100, Kenya Tel: (254-20) 7621234 (Operator) / 7623120 (Information Services Section) Fax: (254-20) 7624266/7624267/ 7624264/7623477/624060 E-mail: infohabitat@unhabitat.org http://www.unhabitat.org/ Media and Press Relations Tel: (254-20) 762 5518/3065 Email: habitat.press@unhabitat.org	<i>Description</i> Presents the following: 1. Identification of the relationship of the risks and hazards with recipient subject 2. Identification of the vulnerability at various levels: individual, household, village, ecosystem, sub-basin, basin, national <i>Highlights</i> • The Process - key steps in the Sorsogon vulnerability and adaptation assessment process • Framework • Realities on the ground and actions made • Key findings • Analyzing the sensitivities, current and project vulnerabilities and adaptive capacity • Developing the local climate change action plan
42. Natural Disaster Preparedness Plan: A Facilitator Guide	Asia/Pacific Cultural Center for UNESCO (ACCU)	Asia-Pacific Cultural Centre for UNESCO (ACCU) Japan Publishers Building, 6 Fukuromachi, Shinjuku-ku, Tokyo, 162-8484 Japan Tel: +81-3-3269-4435 Fax: +81-3-3269-4510	<i>Description</i> Features the Package Learning Materials on Environment designed by the Asia-Pacific Cultural Centre for UNESCO (ACCU) with specialists on non-formal education, environment and cartoon animation. <i>Highlights</i> This fourth installment in a series focuses on natural disaster preparedness and comes in various formats—poster, booklet, animated cartoon video, facilitators' guide, fact sheets, stickers, and introduction sheet for PL4, including adaptation guidelines. Sections include: • Definition of a disaster • Various types of disasters • Causes and effects of disasters • Possible actions • Preparedness, Reduction, Response, Recovery, Reconstruction • Moving from awareness to action and empowerment • Role of youths • Moving from individual action to collective action

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
43. Paghahanda sa Kalamidad: Unang Bahagi	Philippines-Australia Community Assistance Program (PACAP) People's Initiative for Learning and Community Development (PILCD) DepED	162 BPI Compound, Friendly Homes Subdivision, BPI Compound, Guisad, 2600 Baguio City Tel: +63974-3005038 Fax: +63974-3005038 Email: info@pilcd.org	<i>Description</i> This module talks about how people should prepare when calamities arise.
44. Paghahanda sa Kalamidad: Ikalawang Bahagi	Philippines-Australia Community Assistance Program (PACAP) People's Initiative for Learning and Community Development (PILCD) DepED	162 BPI Compound, Friendly Homes Subdivision, BPI Compound, Guisad, 2600 Baguio City Tel: +63974-3005038 Fax: +63974-3005038 Email: info@pilcd.org	<i>Description</i> This module talks about how people should prepare when calamities arise.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
45. ADPC Strategy 2020	ADPC	Rohan Cooray Project Coordinator Tel: +94777-148-222 Email: rohancooray@gmail.com ADPC 979/66-70, 24th Floor, SM Tower, Paholyothin Road, Samsen Nai, Phayathai Email: adpc@adpc.net	<i>Description</i> This strategy seeks to complement the DRR strategies of other key development partners, to ensure that strong, collective and comprehensive support can and will be given to the countries and communities of Asia-Pacific region as they seek to tackle their big disaster risk challenge. <i>Highlights</i> • Vision, mission, goal, principles of ADPC • Role of ADPC in support of DRR in Asia Pacific • Thrusts for 2020 • Thematic areas of focus • Essential cross-cutting imperatives in strategy • Approaches for implementing strategy 2020
46. Disaster Risk Management in Asia and the Pacific	Asian Development Bank	Mr. Neeraj Jain Country Director Asian Development Bank 6 ADB Avenue Mandaluyong, 1550 Metro Manila Philippines Tel: +632 632 4444 Email: adbpub@adb.org www.adb.org	<i>Description</i> This project aims to help Asian Development Bank (ADB) Developing Member Country (DMC) governments integrate disaster risk management into their national development strategies and examine how emerging economies of Asia can cooperate to improve their disaster risk management practices. It contributes to ADB's ongoing efforts to mainstream disaster risk management into its lending strategies; strengthen governance for disaster risk reduction and response in the region; improve the effectiveness of post-disaster reconstruction; and develop new financial instruments to help meet the costs of such activities through international, particularly regional cooperation. <i>Highlights</i> Discusses lessons from recent events—both in pre-disaster risk mitigation and post-disaster response—and concrete recommendations for action.

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47. Disaster Management in Southeast Asia: An Overview	Asian Disaster Preparedness Center	Ms. Lolita Bildan Information Manager 58 moo 9, Km. 42, Paholyothin Highway, Klong Luang, Pathumthani 12120, Thailand Email: Lolita@adpc.net Asian Disaster Preparedness Center (ADPC) P.O. Box 4, Klong Luang Pathumthani 12120, Thailand Tel: (66-2) 524-5354 Fax: (66-2) 524-5360 E-mail: adpc@adpc.net www.adpc.net	<i>Description</i> This publication is based on a review of disaster management literature and discussions held at meetings of the ADPC Consultative Committee on Regional Cooperation in Disaster Management (November 2000 and 2001), the Working Group Meeting on Regional Cooperation in Disaster Management (October 2001), Regional Workshop for the Development of the ASEAN Regional Program on Disaster Management (March 2002), and the Asian Regional Workshop on Policy, Legal and Institutional Arrangements and Planning for Disaster Management (April 2002). Information was analyzed in the regional context to draw recommendations for action at the regional level. <i>Highlights</i> Provides an overview of Southeast Asia, the status of DRRM in the region, the components of disaster risk management, the requirements for safer communities, and country profiles of member states.
48. Child-Centred Disaster Risk Reduction and Climate Change Adaptation: Roles of Gender and Culture in Indonesia	Children in a Changing Climate Research	Richard Manning Institute of Development Studies, at the University of Sussex, Brighton, BN1 9RE, UK Tel: +44 (0) 1273 606261 Fax: +44 (0) 1273 612202 www.childreninachangingclimate.org/home.htm	<i>Description</i> The main aim of this research is to investigate the roles of gender and religion in child-centered disaster risk reduction through participatory research, informal conversations and direct advocacy. The research is designed to validate findings from previous research by the wider project team and to provide empirical evidence in support of child-centered DRR and the Children in a Changing Climate programme. <i>Highlights</i> 1. Disaster risk context in Indonesia and field-work locations 2. Research design and methods; conceptual framework—child development theories, children and social cultural context, children's geographic, religion and risk consciousness, children as risk communicators 3. Research findings 4. Discussion and conclusion

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
49. Children's Charter An Action Plan for Disaster Risk Reduction for Children by Children	UNICEF PLAN Save the Children World Vision	Mr. Michael Novell Field Office Director 1 Encarnacio St. corner Lapu-lapu Avenue, Magallanes Village, Makati City, Matro Manila Plan International Media Office Tel: +44 (0) 1483 733211, Email: Press. Office@plan-international.org www.childreninchangingclimate.org UNICEF P.O. Box 1076 Makati Central Post Office, 1250 Makati City, Philippines 1200 Email: manila@unicef.org	<i>Description</i> The Children's Charter for Disaster Risk Reduction has been developed through consultations with more than 600 children in 21 countries in Africa, Asia and Latin America. Children were asked about the impacts of disasters on their lives, the networks that exist in their communities to tackle disasters and their priorities for DRR. The aim of this charter is to raise awareness of the need for a child-centered approach to DRR and for stronger commitment from governments, donors and agencies to take appropriate steps to protect children and utilize their energy and knowledge to engage in DRR and climate change adaptation <i>Highlights</i> The charter focuses on these themes: 1. Schools must be safe and education not interrupted. 2. Child protection must be a priority before, during and after a disaster. 3. Children have the right to participate and to access the information they need. 4. Community infrastructure must be safe, and relief and reconstruction must help reduce further risk. 5. Disaster risk reduction must reach the most vulnerable people.

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50. Child-Focused Disaster Risk Reduction (Community Disaster Risk Reduction Implementation)	Asian Disaster Preparedness Center	Mr. Aloysius Rego Deputy Executive Director Disaster Management Center Project Office Tel: +94777-148-222 www.adpc.net	<i>Description</i> The material's key concepts are as follows: 1. Children have specific vulnerabilities and needs which have to be addressed in risk reduction. Children possess capacities according to their stage of development, which form the basis for their active participation in emergency response, preparedness and mitigation. 2. A nurturing and supportive environment helps children cope with adverse situations and contributes to building their resilience. Parents, school teachers, government and other duty bearers have to provide these support to children. 3. A school safety program has many benefits for linking the school to the family and community in disaster risk reduction. <i>Highlights</i> Includes discussion on the importance of children's participation in DRR and case presentations featuring child-focused disaster risk reduction.
51. Disaster Risk Reduction and Young Children Assessing Needs at the Community Level (A Guidebook for the Asia-Pacific Region)	ARNEC, UNICEF APSSC and Macquarie University, Australia	Junko Miyahara, Coordinator Tel: +65 6332-0652 Email: junko.miyahara@arnec.net Silke Friesendorf, Communication Officer Tel: +65 6332-0653 Email: silke.f@arnec.net Debbie Fang, Programme Support Officer Tel: +65 6332-0693 Email: debbie.fang@arnec.net ARNEC c/o SEED Institute 73 Bras Basah Rd NTUC Trade Union House #07-01 Singapore 189556 Tel: +(65)6332-0652 Email: secretariat@arnec.net	<i>Description</i> This guidebook was designed to fill some gaps in the current approach to Disaster Risk Reduction, focused on social variables and community activities associated with DRR for young children. <i>Highlights</i> Section 1: Background; Components of DRR Section 2: Assessing the Social Variables of DRR for Young Children at the Community Level Section 3: Using the Information Gathered

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
52. Practice Standards in Children's Participation	Save the Children	Save the Children UK 1 St John's Lane London EC1M 4AR www.savethechildren.net New York advocacy office 777 United Nations Plaza #3A, New York, NY 10017, USA Tel: +1 212 370 2461	<i>Description</i> Practice standards state what children and others can expect of Save the Children's practice in child participation. They are designed to apply to all Save the Children's child participation work and represent minimum expectations of the ways in which staff will behave and operate. <i>Highlights</i> Discusses the 7 practice standards—what they mean, why they are important and how they can be met.
53. After the Cameras Have Gone: Children in Disasters	Plan International	Amer Jabry amer.jabry@btinternet.com Plan Limited Chobham House - Christchurch Way, Woking GU21 6JG, United Kingdom Tel: +44 (0) 1483 755155 Fax: +44 (0) 1483 756505 Email: info@plan-international.org www.plan-international.org Plan UK 5-6 Underhill Street, Camden, London NW1 7HS, United Kingdom Tel: +44 (0)20 7482 9777 Fax: +44 (0)20 7482 9778 Email: mail@plan-international.org.uk www.plan-uk.org	<i>Description</i> The report demonstrates that the protection of children and their right to participate in decisions made about their future will be overlooked if patterns of previous disasters are followed. This research shows that during a disaster the physical survival needs of children including safe water, food, shelter, clothing and primary health care are usually given a very high priority. <i>Highlights</i> Includes sections on: • Children in Disasters • Coping in the Aftermath of Calamity - Plan's Experiences in El Salvador and Guinea • The Importance of Education in Disaster Rehabilitation – Plan's Rapid Education Programme in Sierra Leone • Disaster Preparedness and Safe Villages in Central Vietnam • Meeting Children's Rights in a Disaster

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
54. Children as Agents of Change for Disaster Risk Reduction: Lessons from El Salvador and the Philippines	Institute in Development Studies Children in a Changing Climate PLAN	Mr. Richard Manning Chairman, Board of Trustees Institute of Development Studies Library Road Brighton BN1 9RE UK Tel: +44 (0)1273 606261 Fax: +44 (0)1273 621202 Email: ids@ids.ac.uk www.childreninachangingclimate.org Institute if Development Studies, at the University of Sussex, Brighton, BN1 9RE, UK Tel: +44 (0) 1273 606261 Fax: +44 (0) 1273 612202	<i>Description</i> The paper challenges assumptions by examining how children's voices are represented and heard in disaster risk reduction policy and decision-making spaces, and by assessing the level of capacity children have for preventing disasters vis-à-vis their parents. This challenge and the research presented here are prompted by the anecdotal field reports provided by child-focused development agencies, which suggest that children in developing countries are making significant contributions to minimizing disaster risks. <i>Highlights</i> The paper explores three linked areas of enquiry that help to frame the emerging 'child-centred approach to DRR. First, it considers a history of youth empowerment through children's active participation in decision-making forums. Second, it looks at whether the international human rights architecture provides for a child's right to protection from disasters; and third, it asks whether children can be effective as communicators of risk within their own households and communities.
55. Rebuilding Lives After the Tsunami: The Children's Road To Recovery	International Save the Children	Mr. Michael Novell Field Office Director 1 Encarnacio St. corner Lapu-lapu Avenue, Magallanes Village, Makati City, Metro Manila International Save the Children Alliance Secretariat Second Floor Cambridge House 100 Cambridge Grove London W6 0LE, UK Tel: +44 (0) 20 8748 2554 Fax: +44 (0) 20 8237 8000 Email: info@save-children-alliance.org www.savethechildren.net	<i>Description</i> This showcases how Save the Children staff helped save the lives of tens of thousands of children and family members immediately following the tsunami and how hundreds of thousands of children and family members rebuild their lives in new or redeveloped communities complete with homes, schools and health clinics. <i>Highlights</i> Highlights achievements in many critical areas including child protection, education, health, livelihoods and disaster risk reduction by Save the Children as a result of their planned five-year response and recovery program in Indonesia, Sri Lanka, India, Thailand and Somalia.

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56. Children and the Tsunami Engaging with Children in Disaster Response, Recovery and Risk Reduction: Learning from Children's Participation in the Tsunami Response	Plan International	Plan International Asia Regional Office 2nd floor, Na-Nakorn Building 99/349 Chaengwattana Road Laksi, Bangkok 10210 Tel: 66 2 576 1972-4 Fax: 66 2 576 1978 www.plan-international.org	<i>Description</i> This publication notes that addressing immediate physical needs during disasters should not be at the cost of other rights of children such as the right to participation, development and protection, as seeking short-term fixes could do longer-term permanent damage. <i>Highlights</i> Chapter 1 gives examples of how children helped other children (and adults) during and after the tsunami; presents the arguments for listening to children and including them in discussions and action for DRR. Chapter 2 looks into the factors and reasons why the four countries included in the study did not engage children. Chapter 3 Children's participation in the post-tsunami operation: Findings from agency research and children's consultation within the child right's framework Chapter 4 Time to act: Recommended first steps Scope and methodology Individuals and children's groups consulted Definitions of disaster-related terminologies
57. Reducing Vulnerability of School Children to Earthquakes in Asia-Pacific Region	Sustainable Environment and Ecological Development Society-Shimla, India	DMA Cultural Centre, Plot 15A, Institutional Area, Sector 4, R.K. Puram Postal Code: 110022, New Delhi India Tel: +91 1132546289 Email: info@seedsindia.org www.seedsindia.org/	<i>Description</i> The earthquake educational booklet has been prepared for teachers covering basic information related to earthquake safety. <i>Highlights</i> Chapter 1: School Safety and Initiatives of UNCRD Chapter 2: Reducing Vulnerability of School Children Chapter 3: Implementation in Project Countries Chapter 4: Highlights of the Project Outcomes Chapter 5: From School to Communities Chapter 6: From model projects to country-wide intervention: Experience of Japan Chapter 7: Conclusions

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
58. Making Search and Rescue Training Inclusive of Persons with Disabilities: A Guide for Trainers	HANDICAP	Valero Tower 12A, 122 Valero St. Salcedo Village, Makati City 1227 Tel: +63 (02) 812 6990 / (02) 519 3341 Fax: +63 (02) 892 4583 Email: mla-ofc@handicapinternational.ph ; info@handicapinternational.ph inclusive-drm@handicapinternational.asia www.disability.org	<i>Description</i> This guide is for search and rescue training providers. Its purpose is to provide tips on how to adapt common search and rescue operations to suit persons with different functional impairments. <i>Highlights</i> Discusses techniques applicable to different situations: • Rescue by a single rescuer • Rescue by more than one rescuer • Rescue from water • Transportation by stretch • Rescue from a smoky building
59. Communicating and Interacting with Persons with Disabilities: Checklist and Terminology	HANDICAP	Valero Tower 12A, 122 Valero St. Salcedo Village, Makati City 1227 Tel: +63(02) 812 6990 / (02) 519 3341 Fax: +63 (02) 892 4583 Email: mla_ofc@handicapinternational.ph ; info@handicapinternational.ph inclusive-drm@handicapinternational.asia Website: www.disability.org	<i>Description</i> A listing of appropriate terminology to be used when communicating with persons with disabilities and a checklist of tips for interacting with them.
60. Contingency Plan of Barangay Pagsangahan, San Miguel, Catanduanes	ACF International AECID Makataong Pagtulong Handicap International	Mr. Martin R. Parreno National Nutrition Coordinator Unit 2802, 28 th Floor, 88 Corporate Center, 141 Sedeno St., Salcedo Village, Makati City Philippines 1227 Action Against Hunger ACF-USA 247 West 37th Street, 10th Floor New York, NY 10018, USA Tel: +1 (212) 967-7800, +1 (877) 777-1420 Fax: +1 (212) 967-5480	<i>Description</i> A compilation of Disaster Preparedness Plans of Barangay Pagsangahan, San Miguel, Catanduanes, under the project entitled 'Community-Based Disaster Risk Reduction Project and Mainstreaming Disability into DRR Initiatives in the Philippines.'

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
61. Disability Inclusive Community-Based Disaster Risk Management Toolkit (Inclusive Early Warning Systems)	Handicap International	Valero Tower 12A, 122 Valero St. Salcedo Village, Makati City 1227 Tel: +63(02) 812 6990 / (02) 519 3341 Fax: +63 (02) 892 4583 Email: mla-ofc@handicapinternational.ph ; info@handicapinternational.ph inclusive-drm@handicapinternational.asia www.disabilityindrr.org	<i>Description</i> This toolkit was designed for disaster risk management practitioners and policy makers and focuses on making community-based disaster risk management inclusive of persons with disabilities. Its content is based on knowledge and practices gathered from work in Afghanistan, Bangladesh, India, Nepal and Sri Lanka. Effective Early Warning Systems play a significant role in preventing loss of life and property by providing community members with advance information about a coming hazard and the immediate measures to be undertaken before it strikes. <i>Highlights</i> The toolkit is divided into 3 parts: Part 1 covers background information on disability, key terminology and concepts for our work Part 2 provides practical guidance for the implementation of disability inclusive CBDRM – divided into 8 topic areas Part 3 contains user-friendly tools to complement the advice given in Part 2 Inclusive early warning systems are discussed in Part 2 Section 4



KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
62. Disability Inclusive Community-Based Disaster Risk Management Toolkit (Search and Rescue and First-Aid Task Forces)	Handicap International	Valero Tower 12A, 122 Valero St. Salcedo Village, Makati City 1227 Tel: +63(02) 812 6990 / (02) 519 3341 Fax: +63 (02) 892 4583 Email: mla-ofc@handicapinternational.ph ; info@handicapinternational.ph inclusive-drm@handicapinternational.asia www.disabilityindrr.org	<i>Description</i> This toolkit was designed for disaster risk management practitioners and policy makers and focuses on making community-based disaster risk management inclusive of persons with disabilities. Its content is based on knowledge and practices gathered from work in Afghanistan, Bangladesh, India, Nepal and Sri Lanka. Effective Early Warning Systems play a significant role in preventing loss of life and property by providing community members with advance information about a coming hazard and the immediate measures to be undertaken before it strikes. <i>Highlights</i> The toolkit is divided into 3 parts: Part 1 covers background information on disability, key terminology and concepts for our work Part 2 provides practical guidance for the implementation of disability inclusive CBDRM – divided into 8 topic areas Part 3 contains user-friendly tools to complement the advice given in Part 2 Inclusive early warning systems are discussed in Part 2 Section 5
63. Care Practices in the Mother-Baby Friendly Tents and Health Centers (Child-Centered Emergency Response)	ACF International Humanitarian Aid	Action Against Hunger ACF-USA 247 West 37th Street, 10th Floor New York, NY 10018, USA Tel: +1 (212) 967-7800, +1 (877) 777-1420 Fax: +1 (212) 967-5480	<i>Description</i> A document regarding the experience of care practices and psychosocial support as part of the response to emergencies in the Philippines. <i>Highlights</i> • Presentation of Mother Baby Friendly Tent • Human Resources in the Programme: Recruitment • Technical Training • Supervision. • Team management: the 5 weekly action points • Project Monitoring • Results • Activities developed • Coordination • Recommendations • Perspectives of the program • Conclusion

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
64. Protecting Children Affected by HIV/AIDS	UNICEF	The Child Protection Section Programme Division UNICEF NY 16 Westbourne Grove Westbourne House, London W2 5RH United Kingdom childprotection@unicef.org www.unicef.org	<i>Description</i> A child protection information sheet on protecting children affected by HIV/AIDS. <i>Highlights</i> Includes statistics on children affected by the infection and the key areas for building a protection environment for children.
65. Disease Surveillance and National Dengue Prevention and Control Program	Department of Health	San Lazaro Compound, Sta. Cruz, Manila, Philippines Tel: (+632) 651-7800, 743-8301 to 23 Fax: (632) 711-6744	<i>Description</i> The program is a model for national disease surveillance and prevention program focus on HIV/STI, dengue, measles and influenza.
66. PREPARE (Pandemic Preparedness) Project	National Disaster Risk Reduction and Management Council (NDRRMC) Office of Civil Defense, Department of Defense	opcen@ndrrmc.gov.ph	<i>Description</i> Aims to strengthen the capacity of the national government and the LGUs together with partner stakeholders to build the disaster resilience of communities. <i>Highlights</i> Discusses the effects of a pandemic and provides simple advice on how to prevent, prepare and respond to a future a pandemic affecting the community.
67. Saskatoon Public Schools Pandemic Influenza Plan	Saskatoon Public Schools, Canada	Veronica Baker, Manager Communications and Marketing Saskatoon Public Schools Tel: 306-683-8325 Fax: 306-657-3971	<i>Description</i> A pandemic Influenza Plan pattern by Saskatoon Public Schools based on the Saskatchewan Ministry of Health's Public Pandemic Influenza Plan.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
68. Ginhawa: Well-being in the Aftermath of Disaster	Various Academic Personnel working on Psycho-Social Rehabilitation	flipsidepublishing.wordpress.com/2013/11/18/ginhawa/	<i>Description</i> A resource handbook for people involved in the psychosocial care of survivors of tragedies. <i>Highlights</i> The book discusses the following points: Section 1: The Continuity of Disasters Section 2: A Psychosocial Framework for Disaster Management Section 3: Major Considerations in the Transformation Process Section 4: The Psychosocial Intervention Program Section 5: Vulnerable Populations Section 6: Vital Implications to Nation Building Appendix: Do's and Don'ts in Organizing a Community
69. Influenza Pandemic Preparedness Plan and Guidelines	Saint Joseph's University, USA	Joan Chrestay Vice President for External Affairs Tel: (610) 660-1226 Email: jchresta@sju.edu	<i>Description</i> The Saint Joseph's University Influenza Pandemic Preparedness Plan and Guidelines are intended to assist management, faculty, staff and students in planning for the possibility of influenza pandemic.
70. Philippine Symposium on Sustainable Sanitation and Global Hand Washing Day	Center for Advance Philippine Studies, with Stockholm Environment Institute (SEI) and World Health Organization (WHO)	Yolanda E. Oliveros, MD, MPH Director IV, National Center for Disease Prevention and Control, DOH Chairperson, PSSS Organizing Committee	<i>Description</i> A compilation of updates on sanitation program in Asian countries. <i>Highlights</i> Includes statistics on sanitation, country program objectives, targets and activities.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
71. Child-Oriented Participatory Risk Assessment and Planning: A Toolkit	Buklod Tao Center for Positive Future Center for Disaster Preparedness	Center For Disaster Preparedness CSWCD Building, R. Magsaysay Ave., University of the Philippines Campus Diliman, Quezon City, Philippines Tel: +632-9266996 / +632-9287285 Email: cdp@info.com.ph www.cdp.org.ph	<i>Description</i> The toolkit helps: 1. To assess disaster risks and particular strengths and weaknesses of children and the community through participatory means. 2. To collectively devise risk reduction solutions based on the results of the participatory assessment. <i>Highlights</i> The assessment process includes the following: • Identify the needed information to gather in the risk assessment process. • Prior to the assessment, have a common understanding of the basic concepts of disaster risk. • Meet with the community leaders. Agree who will undertake the assessment, who will facilitate and who will be the participants. Ensure that women, men, youth and children are represented. • Assign a facilitator and documenter. • Select the appropriate assessment tools. • Schedule the assessment and the target venue. • Undertake disaster risk assessment -- gather data and analyze them; prioritize disaster risks; identify particular strengths, weaknesses; enumerate the elements to be possibly affected by hazards/disaster and major problems of the community. • Based on the assessment, identify possible solutions and alternatives. • Present the results in a community assembly for ratification. • Prioritize the solutions that were previously identified. • Discuss and plan collectively, identify roles and who will be responsible for these roles. • Implement the risk reduction plan

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72. Recommendations on Integrating Disaster Risk Reduction and Management (DRRM) in ACF Programming	ACF	Action Against Hunger ACF-USA 247 West 37th Street, 10th Floor New York, NY 10018 USA Tel: +1 (212) 967-7800, +1 (877) 777-1420 Fax: +1 (212) 967-5480	<i>Description</i> A handout on integrating disaster risk reduction and management in ACF programming.
73. IIEP News Letter Vol. XXX No.1	IIEP	www.unesco.org/iiep	<i>Description</i> An article about crisis sensitive educational planning.
74. Learning Curves	ADB	Team leader: Joven Balbosa Tel: +63 2 632 5948 Email: ibalbosa@adb.org Independent Evaluation Department Asian Development Bank 6 ADB Avenue, Mandaluyong City 1550 Metro Manila, Philippines Tel: +63 2 632 4100 Fax: +63 2 636 2161 Email: evaluation@adb.org	<i>Description</i> This evaluation study assesses the support provided by ADB to countries in fragile and conflict-affected situations.
75. ACCU-UNESCO Asia-Pacific ESD Programme under the UNESCO/Japan Funds-in-Trust for the Promotion of Education for Sustainable Development	UNESCO	Education Division Asia/Pacific Cultural Centre for UNESCO (ACCU) 6 Fukuromachi, Shinjuku-ku Tokyo, 162-8484 Japan Tel: +81-3-3269-4559 Fax: +81-3-3269-4510 Email: education@accu.or.jp www.accu.or.jp/en/	<i>Description</i> The objectives of the UNDESD are to (1) facilitate networking, linkages, exchange and interaction among stakeholders in ESD; (2) foster an increased quality of teaching and learning in education for sustainable development; (3) help countries make progress towards, and attain, the Millennium Development Goals (MDGs) through ESD efforts; and to (4) provide countries with new opportunities to incorporate ESD into education reform efforts.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
76. Republic Act No. 10121 Philippine Disaster Risk Reduction and Management Act of 2010	National Disaster Coordinating Council	Usec. Benito T. Ramos Administrator, OCD and Executive Tel: +632 4211926 Email: opcen@ndrrmc.gov.ph	<i>Description</i> An act strengthening the Philippine disaster risk reduction and management system, providing for the national disaster risk reduction and management framework and institutionalizing the national disaster risk reduction and management plan, appropriating funds therefore and for other purposes.
77. Floods: From Risk To Opportunity	International Flood Initiative (IFI)	ICFM5 Secretary: Dr. Ali Chavoshian Kuniyoshi Takeuchi PWRI/ICHAM, 1-6 Minamihara, Tsukuba Ibaraki, 305-8516, Japan Tel: +81-29-879-6809 Fax: +81-29-879-6709 Email: kuni.t@pwri.or.jp ; info@ifi-home.info	<i>Description</i> On 27-29 September 2011, the 5th International Conference on Flood Management (ICFM5) was held in Tokyo, Japan, with more than 450 participants gathered from 41 different countries.
78. Leading Emergence in Organizations	Australian Institute of Management WA	The Australian Institute of Management WA 76 Birkdale Street Floreat Western Australia 6014 Tel: (08) 9383 8088 Fax: (08) 9387 6171 Email: aimwa@aimwa.com www.aimwa.com	<i>Description</i> A series of professional development workshops.
79. DepEd Order no. 55, s. 2007	Department of Education	DeTExt Action Center Tel: (632) 6361663, +(63) 919 4560027 Email: action@deped.gov.ph	<i>Description</i> Prioritizing the mainstreaming of DRRM in the school system and implementation of relevant programs and projects.



KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
80. Best Practices of Forum Disasters Risk Reduction	United Nations Development Programme (UNDP) and the European Commission Humanitarian Office (ECHO)	Headquarters United Nations Development Programme One United Nations Plaza New York, NY 10017 USA Tel: +1 (212) 906-5000	<i>Description</i> This compilation provides a comprehensive review and analysis of community-based best practices for reducing the risk of disaster from natural hazards affecting Southeast Africa and the Southwest Indian Ocean. It also provides new examples of how various actors and agencies have successfully implemented interventions to reduce risks from the prevalent hazards and minimize damage and losses to property and livelihoods. In Mozambique, Malawi, Comoros and Madagascar in particular, these risks are exacerbated by high poverty levels – the most vulnerable are people living in poor rural areas.
81. Global Facilitators Serving Communities	Global Facilitator Service Corporation, Incorporation	Lenny Diamond Board President Email: info@globalfacilitators.org	<i>Description</i> Providing mentoring, methods and materials for communities to strengthen their resilience in times of crisis and change.
82. Crisis, Change, Choice, Crisis Recovery Process: Building Community Resilience and Self-Reliance	Global Facilitator Service Corporation, Incorporation	Dr. Gilbert Brenson Lazan Email: info@globalfacilitators.org	<i>Description</i> Workshop objectives include: • Identify the relationship between change, crisis and disaster. • Apply the GFSC Crisis > Change > Choice (Crisis Recovery Process) model to assist affected people and communities. • Explore relevant resilience-building techniques. • Develop specific strategies to take care of ourselves and others in care giving roles, balancing work responsibilities and personal well-being. • Plan for action: select appropriate intervention strategies for communities impacted by disasters.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
83. Responding to Emergencies in Southeast Asia: Can We Do Better? A Review of The Humanitarian Response to the 2011 Thailand and Cambodia Floods	Save the Children Australia		<i>Description</i> The Asia-Pacific region is the most disaster-prone region in the world. Floods occur more often than any other type of disaster, and in recent decades have increased in frequency as well as severity of impact. The risk will likely be further amplified in the coming decades due to the effects of climate change. In this context, there is a growing imperative to ensure that disaster management systems are fit for purpose, and that capacities at all levels – national, regional and international – are maximized so that when a disaster does occur, aid is provided where it is needed, when it is needed, to those who need it most.
84. Education for Change: Past, Present and Future	United Nations Educational, Scientific and Cultural Organization (UNESCO)	United Nations Educational, Scientific and Cultural Organization (UNESCO) Office Cluster Office to Brunei Darussalam, Indonesia, Malaysia, the Philippines and Timor-Leste UNESCO House Jl. Galuh (II) No.5, Kebayoran Baru Jakarta 12110, Indonesia Phone: + 62 21 7399818 Fax: + 62 21 72296489 www.unesco.org/jakarta	<i>Description</i> “Education for Sustainable Development (ESD)” is a vision of education that seeks to empower people to assume responsibility for creating a sustainable future. It aims at improving access to quality basic education, reorienting education curricula, training and raising public awareness as well as to help people to develop adequate behaviors, skills and knowledge, now and in the future.
85. Rebuilding Lives after Ondoy and Pepeng: A Contribution to Children’s Recovery (CDRC experience)	Citizens’ Disaster Response Center (CDRC)		<i>Description</i> An NGO that pioneered and continues to promote community-based disaster management in the Philippines.
86. Dumating Man ang Unos: A Psychosocial Orientation in Response to Situations of Crisis and Disasters	SEAMEO INNTECH	SEAMEO INNTECH Commonwealth Avenue, Diliman, Quezon City, 1101 Philippines Tel: +632 924 7681 to 84	<i>Description</i> A poem intended to help readers take their own road to resilience. The information describes factors that affect how people deal with hardship. Much of the poem focuses on developing and using a personal strategy for enhancing resilience.

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87. Preparing for a Human Influenza Pandemic in Singapore	Ministry of Health World Health Organization	Wong Kan Seng Minister for Home Affairs Chairman, Homefront Crisis Ministerial Committee (Avian Flu) Email: kswong@ntu.edu.sg http://www.moh.gov.sg http://www.who.int/en/ http://www.crisis.gov.sg	<i>Description</i> This publication outlines Singapore's approach to dealing with the threat of pandemic influenza. It describes the roles played by the government, the private sector and the community during a pandemic threat.
88. Enabling Teachers as Psychosocial Service Providers in Situations of Crisis and Disasters	SEAMEO INNOTECH	SEAMEO INNOTECH Commonwealth Avenue, Diliman, Quezon City, 1101 Philippines Tel: +632 924 7681 to 84	
89. Training Manual for Inclusion of Disability in Disaster Response			<i>Description</i> This manual intends to focus on issues that are critical to the needs of people with disabilities. Identifying these issues will make management efforts easier and more effective when disaster arrives. The management includes mitigation, preparedness, response and recovery. The aim of this manual is not to run parallel to other disaster management and mitigation efforts but to find a space for the disabled in the general process with inclusion of their specific needs.
90. Children on the Frontline: Children and Young People in Disaster Risk Reduction			<i>Description</i> Prioritizing the education and the agency of young people is an essential feature of any society's capacity to manage risk and develop sustainability. The threats that climate change bring emphasizes the need to recognize the wide range of risks inherent in development. It is not about 'mainstreaming risk into' development but rather recognizing that development is risk management. Good development is about unpacking that risk, making it visible and transparent, and ensuring that all households, especially their children, and all societies have sufficient information to take decisions on how much risk they will accept and how they will manage it. An informed and motivated citizenry will ensure good governance of managing risks, and good governance will thrive on the input of proactive citizens.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
91. Teaching Disaster Risk Reduction with Interactive Methods			<i>Description</i> Discussion with children on disaster risk reduction and related life-skills: disaster preparedness, preventive measures, behavior during and after a disaster.
92. INEE Guidance Note on Conflict Sensitive Education			<i>Description</i> This guidance note is for education practitioners and policy makers working in conflict-affected and fragile contexts. The optional strategies may inform government, development and humanitarian workers. The guidance note may also be of use to additional audiences, such as humanitarian and development donors, and those working in other sectors: child protection, school health, water and sanitation, disaster risk reduction, peace-building, early childhood development, and livelihood.
93. Psychosocial Care in Disaster Management: A Training of Trainers (ToT) Module	National Institute of Disaster Management, Ministry of Home Affairs		<i>Description</i> The module includes the following: • An overview of disaster psychosocial care management in India • Understanding psychosocial needs of the disaster survivors • Techniques of psychosocial care • Working with more vulnerable groups • Stress management and care of co-workers • Disaster psychosocial care ethics and essentialities

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
THEME 3: DISASTER RISK REDUCTION AND RESILIENCE EDUCATION			
1. Disaster and Emergency Preparedness: Activity Guide for K to 6 th Grade Teachers	International Finance Corporation The World Bank	Health and Education Department 2121 Pennsylvania Avenue, NW Washington, DC 20433 USA www.ifc.org Thomas Davenport Director South Asia International Finance Corporation, World Bank Fax: +1 (202) 522 2398 Email: tdavenport@ifc.org General Inquiries: IFC Corporate Relations Tel: (202) 473-3800 Fax: (202) 974-4384	<i>Description</i> This booklet of activity guide and handbook - the Disaster and Emergency Preparedness: Guidance for Schools is a resource for school administrators and teachers to serve as a basis for policy development. It also serves as a resource for classroom activities and awareness-raising among children and communities. The booklet offers suggestions to teach elementary school students about natural and man-made hazards, how to protect oneself and respond to them, and how to help reduce their impact and prevent them from becoming community disasters. <i>Highlights</i> The booklet is divided into five sections: 1. "Hazards and Disasters in our Community" helps students explore their environment by imagining or researching likely or historical disasters in their area. 2. "Measuring Our Environment" can stimulate student interest about how natural hazards are monitored and measured by having them build simple models of seismographs, rain gauges, barometers and other devices. 3. "Disaster Prevention" has activities to explore how communities can prevent disasters by properly building their homes, finding and fixing dangerous items inside buildings, and protecting their environment. 4. "Emergency Response" includes activities designed to reinforce how children should protect themselves and others in emergencies through drills and games. 5. "Promoting Disaster Prevention in Your Community" suggests activities that will encourage students to be leaders by teaching disaster prevention to their families, their schoolmates, and their wider community. Activities in all the sections are briefly described so that they can be adapted to the appropriate age, environment, and resources. The last section of this booklet contains a list of online resources for teachers, and the last two pages provide a Family Disaster Plan, which can be used as a classroom handout or a take-home extension activity.

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2. Coordinating Education during Emergencies and Reconstruction: Challenges and Responsibilities	International Institute for Education Planning	www.unesco.org/iiep	<i>Description</i> Demonstrates why the coordination of humanitarian and post-conflict reconstruction in the education sector is a challenge. The book also suggests ways to overcome barriers to effective coordination. <i>Highlights</i> Divided into four parts: 1. Background of the study—key themes and context 2. Key actors and coordination frameworks 3. Field coordination perspectives 4. Conclusion: the significance coordinating education efforts
3. Minimum Standards For Education: Preparedness, Response, Recovery	Inter-Agency Network for Education in Emergencies (INEE)	Dr. Lori Heninger Inter-Agency Network for Education in Emergencies (INEE) c/o International Rescue Committee 122 East 42nd Street, 12th floor New York, NY 10168 United States of America Tel: +1 212 551 3107 Fax: +1 212 551 3185 Email: minimumstandards@ineesite.org	<i>Description</i> The handbook contains 19 standards, each with accompanying key actions and guidance notes. The handbook aims to enhance the quality of educational preparedness, response and recovery, increase access to safe and relevant learning opportunities, and ensure accountability in providing these services. <i>Highlights</i> The standards are discussed along the lines of five domains: Chapter 1 discusses Domain 1 - Foundational Standards. This chapter details standards for: • Community participation: participation and resources • Coordination • Analysis: assessment, response strategies, monitoring, evaluation. The standards described here are critical for an effective education response. They are the basis for the application of the standards for Access and Learning Environment, Teaching and Learning, Teachers and Other Education Personnel, and Education Policy. Chapter 2 discusses Domain 2 - Access and Learning Environment. This chapter details standards for: • Equal Access • Protection and well-being • Facilities and Services

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			Chapter 3 discusses Domain 3 - Teaching and Learning. Access to education is only meaningful if the education programmes offer quality teaching and learning. This chapter details standards for: • Curricula • Training, Professional Development and Support • Instruction and learning processes • Assessment of learning outcomes Chapter 4 discusses Domain 4 - Teachers and other education personnel. Teachers and other education personnel provide for the education needs of children and youth in emergencies through to recovery. The following standards are detailed: • Recruitment and selection • Conditions of work • Support and supervision Chapter 5 discusses Domain 5 - Education policy. Standards detailed are on: • Law and policy formulation • Planning and implementation



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4. Building Back Better: Post-Earthquake Responses and Educational Challenges in Pakistan	UNESCO IIEP	Education Division Asia/Pacific Cultural Centre for UNESCO (ACCU) 6 Fukuromachi, Shinjuku-ku Tokyo, 162-8484 JAPAN Tel: +81-3-3269-4559 Fax: +81-3-3269-4510 Email education@accu.or.jp ; information@unesco.iiep.org www.accu.or.jp/en/	<i>Description</i> This study documents the education sector's response to the earthquake in northern Pakistan and AJK from its immediate aftermath in July 2007. It presents the experiences of educators and educational planners, managers, and implementers who were engaged in new co-ordination mechanisms at central and hub level. It describes the successes and challenges of the policy and programme interventions developed across the affected areas. <i>Highlights</i> In particular, the study highlights: - the consequences of a lack of emergency preparedness in a natural disaster-prone area; - the importance of strong government leadership in the earthquake response, and the critical need for sector co-ordination that includes national educational authorities at central, provincial and district levels; - the value of systematic sector co-ordination at central and field level and the requirements that this places on agencies and individuals;
			- the value of the Inter-Agency Network for Education in Emergencies (INEE) minimum standards for education in emergencies, chronic crises and early reconstruction as a common policy framework and the need for more attention to application processes; - the importance of sector-wide strategic vision and planning and the need for innovative partnership models for implementation; and - the importance of: (a) a strong UNICEF-UNESCO partnership in leading a co-ordinated education sector response within the context of the 'One UN' Reform, (b) stronger partnerships for education with other relevant UN agencies, especially the World Food Programme (WFP), and (c) improved partnership models for UN partnership with NGOs and community-based organizations (CBOs).
5. INEE Training for DRR Education	INEE	riskred@riskred.org Risk RED Contact Mobile: +1-408-806-7888 Fax: +1-408-516-5841 Email: riskred@riskred.org www.riskred.org	<i>Description</i> It highlights the basic content for disaster risk reduction education.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
6. Facilitating Psychosocial Reconstruction: A Manual for Crisis and Disaster Intervention	Global Facilitators Service Corps	Gilbert Brenson-Lazan and María Mercedes Sarmiento Global Facilitator Service Corps 11 Sequin Road, West Hartford, CT 6117, United States Tel: (860) 523-4918 Email: info@globalfacilitators.org www.globalfacilitators.org	<i>Description</i> A handbook for psycho-social intervention during and after disasters or crisis. This is the ninth edition of this manual and its two accompanying manuals (one for children and one for adult survivors). These manuals have been published in several languages and are available free of charge to non-profit agencies and organizations. As natural and social disasters hit every social class in every corner of the world, the need for psycho-social intervention is being recognized more and more. Facilitation techniques are proving to be effective intervention tools for grief management and psychosocial reconstruction, building the resilience and self-reliance of individuals and communities. <i>Highlights</i> Includes a discussion on the following: • The Concept of Crisis • The Process of Grief - includes a summary of the recovery process • Facilitating Psychosocial Reconstruction • Taking Care of the Caregiver There is also a list of additional resources to supplement the learning of the users of this manual.
7. Disaster Risk Reduction and Education: Outcomes for Children as a Result of DRR Activities Supported by the EEPCT Programme	UNICEF	United Nations Children's Fund Education Section, Programme Division Three United Nations Plaza New York, New York 10017	<i>Description</i> The case study aimed to investigate the DRR outcomes for children as a result of Education in Emergencies and Post-Crisis Transition (EEPCT) funding in the country. It documents the lessons learned through the experience of DRR in the school and community. <i>Highlights</i> Section 1 provides an overview of the study, a brief overview of disaster risk in the Philippines, and the current situation on disasters and education, followed by a brief description of the activities funded under EEPCT. Section 2 describes the findings from the fieldwork and Section 3 presents conclusions from the research.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
8. Guidelines for Development of Disaster Risk Reduction Public Educational Materials	Risk Red	riskred@riskred.org Risk RED Contact Mobile: +1-408-806-7888 Fax: +1-408-516-5841 Email: riskred@riskred.org www.riskred.org	<i>Description</i> This brief guide is for those planning to adapt or develop educational materials for disaster risk reduction. <i>Highlights</i> It describes the What, Why, Who and How to go about adapting and localizing DRR educational materials in order to make best use of previous efforts and to achieve legitimate, appropriate and high impact education, information and communication materials.
9. A Practical Guide to Advocacy for Disaster Risk Reduction	International Federation of Red Cross and Red Crescent Societies	Mr. Al Panico Head of Operations International Federation of Red Cross and Red Crescent Societies P.O. Box 372, CH-1211 Geneva 19, Switzerland Tel. : +41 22 730 42 22 Fax : +41 22 733 03 95 Email: al.panico@ifrc.org www.ifrc.org	<i>Description</i> This guide aims to further enhance the skills, knowledge and proficiency of disaster risk reduction practitioners to advocate for and communicate disaster risk reduction in Asia Pacific. It presents disaster risk reduction and advocacy concepts in a user-friendly and accessible manner. <i>Highlights</i> The book is written in three sections: (i) building safer communities - working together to reduce risk, build capacity and save lives in Asia Pacific. This section provides a basic understanding of some key aspects of disaster risk reduction; (ii) actively advocating for a safer Asia Pacific. This section explores the meaning of advocacy and the role it plays in the red cross red crescent; and (iii) advocating for humanitarian values and vulnerable groups in disaster risk reduction. This section explores the issues of discrimination, violence and lack of respect for diversity, and provide tools to support disaster risk reduction advocacy efforts regarding people with disabilities, women, older people and children.
10. Programmes on Disaster Reduction Education	ACCU	Asia-Pacific Cultural Centre for UNESCO (ACCU) Japan Publishers Building, 6 Fukuromachi, Shinjuku-ku, Tokyo, 162-8484 Japan Tel: +81-3-3269-4435 Fax: +81-3-3269-4510	<i>Description</i> Under ACCU's materials production programme, a booklet "TSUNAMI RESCUE!" which is based on a Japanese material for disaster prevention, "A Real Story, In Amura No Hi" has been produced. <i>Highlights</i> The material contains not only the historical story about Mr. Hamaguchi Goro who saved the villagers from a tsunami, but also basic knowledge on earthquakes, tsunami and disaster reduction and guide to use the material.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
11. Building Resilience to Tsunami in Indian Ocean	Kyoto University Graduate School of Global Environmental Studies	Rajib Shaw Associate Professor International Environment and Disaster Management Laboratory, Graduate School of Global Environmental Studies Kyoto University Yoshida Honmachi, Sakyo-ku, Kyoto 606-8501, Japan Tel/Fax: 81-75-753-5708 Email: shaw@global.mbox.media.kyoto-u.ac.jp www.iedm.ges.kyoto-u.ac.jp/	<i>Description</i> As a direct implementation of the Hyogo Framework for Action (HFA), the project aims to build community level coping capacities towards long-term resilience. The objectives of the project include making tsunami-threatened communities aware of their risks and of actions needed, training local stakeholders in appropriate skills, establishing community-based infrastructure, and preparing and using IEC (Information, Education and Communication) material for awareness, training and advocacy. In this setting, the project aims to bring together the NGOs, the academic institutions and the governments to work together in a locally-appropriate process of institutionalizing risk reduction.
12. The Social Dimensions of Climate Change	UNRISD	United Nations Research Institute for Social Development (UNRISD) Palais des Nations 1211 Geneva 10, Switzerland Tel: + 41 (0)22 917 3060, + 41 (0)22 917 3020, + 41 (0)22 917 3005 Fax: +41 (0)22 917 0650 Email: info@unrisd.org , comms@unrisd.org	<i>Description</i> This paper addresses the social dimensions of climate change from a sustainable, equitable development perspective, where the outcome is to fully promote human welfare and equal access to life-sustaining resources. The paper aims to broaden and deepen policy-makers' understanding of the benefits of addressing and incorporating the social dimensions of climate change into climate policies. <i>Highlights</i> Discusses the knowledge gaps within the social, human and natural sciences that need to be filled in order to strengthen policy responses.
13. Climate Change Awareness-Disaster Risk Reduction	Book choice Publishing	Book Choice Publishing 123 Villanueva St., Sumilang Subd. Valenzuela, Metro Manila Tel: 432-1952	<i>Description</i> Textbook manual for individuals, households, schools and public officials.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
14. Asian Youth Forum for Disaster Education (AYF)	Asia/Pacific Cultural Centre for UNESCO (ACCU)		<i>Description</i> A call to action for policy makers and government sector to integrate disaster preparedness in education. AYF participants were from the areas affected by the Indian Ocean earthquake and subsequent tsunami in December 2004 or from other parts of Asia considered prone to tsunamis. <i>Highlights</i> Describes the activities in the forum and the experiences of the youth participants. The highlights were the adoption by the participants of the Wakayama Declaration, expressing resolutions and the wish for disaster.
15. Mainstreaming Disaster Risk Reduction in the Philippines	Office of Civil Defense, Department of Defense and DepED		<i>Description</i> Simplified but comprehensive lesson exemplars in Disaster Risk Reduction and Climate Change.
16. Handbook: A Facilitator's Guide to Using No Strings Tales of Disasters Films	Asian Disaster Preparedness Center United Nations Development Program Department of Education	Rohan Cooray Project Coordinator Disaster Management Center Project Office Tel: +94777-148-222 E-mail: rohancooray@gmail.com www.nostrings.org.uk	<i>Description</i> The guide contains a complete lesson plan breakdown with a range of activities that can be used for each film. It was planned to help facilitators using the films ensure that viewers remember what they learned and be able to apply the learning when they experience a natural disaster.
17. Family Disaster Plan	Risk Red	riskred@riskred.org Risk RED Contact Mobile: +1-408-806-7888 Fax: +1-408-516-5841 Email: riskred@riskred.org www.riskred.org	<i>Description</i> Provides an outline of Assessment and Planning, Physical Protection and Response Capacity: Skills and Supplies.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
18. "Go Bag" Scavenger Hunt	Risk RED	riskred@riskred.org Risk RED Contact Mobile: +1-408-806-7888 Fax: +1-408-516-5841 Email: riskred@riskred.org www.riskred.org	<i>Description</i> To provide children and families with the opportunity to think about their own disaster preparedness and to practice selecting and assembling emergency supplies in a "go-bag."
19. Children in Disasters: Games and Guidelines to Engage Youth in Risk Reduction	International Red Cross and Red Crescent Movement	International Federation of Red Cross and Red Crescent Societies South East Asia Regional Office Ocean Tower I, 5th Floor, 170/11-12 Sukhumvit Soi 16, Ratchadapisek Road, Klong Toey, Bangkok 10110, Thailand Email: thailand.bangkokregdelegation@ifrc.org www.ifrc.org www.negotiatorpro.com/disasterrole.html	<i>Description</i> This site outlines five different ideas for role-playing games, using disasters as a central theme. <i>Highlights</i> The 'Escaping an Earthquake' and 'Fleeing the Great Flood' games focus on disaster response. 'Surviving a Plane Crash' includes elements of response. 'Stopping the Fighting' and 'Lords of the Islands' focus on conflict resolution, community approaches to disasters and problem solving, and governance, all learning exercises that are often left out of disaster education.
20. Disaster Preparedness Coloring Book	American Red Cross	American Red Cross National Headquarters 2025 E Street, Washington, DC 20006 Tel: 1-800-RED CROSS (1-800-733-2767)	<i>Description</i> This coloring book is designed for adults and children to work on together. Children can learn about fire, earthquakes, floods, tornados and other disasters, as well as how to protect themselves.
21. Education in Emergencies: A Resource Tool Kit	UNICEF	Ms. Merlinda R. Smith Education in Emergencies Project Officer Regional Office for South Asia (UNICEF ROSA) Leknath Marg, Kathmandu 44600, Nepal Email: rosa@unicef.org	<i>Description</i> Education in Emergencies: A Resource Tool Kit is drawn from materials in a 'back to school' guide developed by UNICEF Headquarters New York as well as materials from the Emergency Field Handbook, the Technical Notes, and the experiences of officers in the field.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
22. Planning Education in and after Emergencies	UNESCO	Ms. Estelle Zabra Chief of Publications & Communication 7-9 rue Eugene-Delacroix 75116 Paris, France Tel: +33 (0)1 45 68 10 00 Email: information@iiep.unesco.org www.unesco.org	<i>Description</i> The booklets in this series are written primarily for two users: those engaged in educational planning and administration, in developing as well as developed countries; and those who seek a more general understanding of educational planning and how it is related to national development. <i>Highlights</i> Includes the following sections: • Definition of emergency education • Dimensions of the problem • Frequently asked questions • Access to education, and related activities in situations of crisis and recovery • Resources for education in crisis and recovery • Special features of education in crisis and recovery • Coordination and capacity building • Applying these principles: The government perspective • The government perspective: Facing reconstruction • Applying these principles: Perspectives of others • Actors' Reflections and Concluding Remarks

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
23. Rapid Response: Programming for Education Needs in Emergencies	CfBT Education Trust and IIEP-UNESCO	Jonathan Penson Kathryn Tomlinson enquiries@cfbt.com Tel: +44 (0) 118 902 1000 Fax: +44 (0) 118 902 1434 www.cfbt.com Ms. Estelle Zadra Chief of Publication & Communication CfBT Education Trust 60 Queens Road, Reading, Berkshire, RG1 4BS Email: e.zadra@iiep.unesco.org IIEP in Paris International Institute for Educational Planning 7-9, rue Eugène-Delacroix 75116 Paris, France Tel: +33 (1) 45 03 77 00 Fax: +33 (1) 40 72 83 66 www.iiep.unesco.org	<i>Description</i> This policy brief presents recommendations for policy and practice for those working to design and deliver education programmes in areas of conflict and emergencies. These recommendations are based upon the findings from the corresponding publication 'Rapid Response: programming for education needs in emergencies' by Jonathan Penson and Kathryn Tomlinson. This book and policy brief are the result of a partnership between CfBT Education Trust and IIEP-UNESCO.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
24. Education in Emergencies: A Critical Factor in Achieving the Millennium Development Goals	Inter-Agency Network for Education in Emergencies (INEE) International Rescue Committee (IRC)	Ms. Mary Mendenhall Network Coordinator Inter-Agency Network for Education in Emergencies (INEE), UNICEF – Education Section, Programme Division, 3 UN Plaza, H-7A, New York, NY 10017, USA Tel: +1 212 326 7581 Fax: +1 212 326 7129 Email: mmendenhall@unicef.org , coordinator@ineesite.org	<i>Description</i> 'Education in emergencies' refers to schooling and other structured activities for those whose lives have been thrown into disorder by extreme and difficult circumstances. This article argues for a higher priority to be given to education in times of crisis, including funding, and outlines the work of the International Rescue Committee (IRC) and the Inter-Agency Network for Education in Emergencies (INEE). A case study is included describing the priority of education in Sierra Leone for Liberian refugees. <i>Highlights</i> Includes discussion on the following: • Importance of education in emergencies • Existing gaps and ongoing challenges • Progress towards education in emergencies • The forum on global collaboration on education in emergencies • Recommendations
25. Manual on Child Soldiers	Save the Children International	Save the Children Australia Level 6, 250 Victoria Parade, East Melbourne, Victoria 3002, Australia/ PO Box 340, Fitzroy, Victoria 3065, Australia Tel: +61 1800 76 00 11	<i>Description</i> A manual for the care and protection of children in emergencies particularly in post-conflict situations.
BRUNEI DARUSSALAM			
1. National Progress Report on the Implementation of the Hyogo Framework for Action (2009-2011)	National Disaster Management Center (NDMC)	Mr. Yahya bin Haji Abdul Rahman Director, National Disaster Management Center (NDMC) Tel: +673-2380-387 Email: yahya2800@yahoo.com	<i>Description</i> Provides an outline of the actions implemented in the Hyogo Framework for Action.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
2. Background on Brunei Darussalam's Disaster Management	ASEAN Inter-Parliamentary	AIPA Secretariat 6th Floor, Nusantara 3 Building, DPR RI Compound, Jalan Gatot Subroto, Senayan, Jakarta 10270, Indonesia Tel: (6221) 571-5511/571-5691 Fax: (6221) 573-1319 Email: alpa@aipasecretariat.org	<i>Description</i> Discusses Brunei Darussalam's experience in disaster management.
CAMBODIA			
1. Mainstreaming of Disaster Risk Reduction in the Education Sector in Cambodia	Economic Institute of Cambodia (EIC) Asian Disaster Preparedness Center (ADPC)	Asian Disaster Preparedness Center (ADPC) 979/66-70, 24th Floor, SM Tower, Paholyothin Road, Samsen Nai, Phayathai, Bangkok 10400 Tel : (66-2) 298 0681-92 Fax : (66-2) 298 0012-13 Email: adpc@adpc.net www.adpc.net www.eicambodia.org	<i>Description</i> Identifies 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
2. Kingdom of Cambodia National Committee for Disaster Management (NCDM)	National Committee for Disaster Management (NCDM)	M. Saohorn No. 274 Bd. Monivong, Phnom Penh, Cambodia http://www.ncdm.gov.kh/	<i>Description</i> Presents the Organization Chart of the National Committee for Disaster Management (NCDM) in Cambodia and their coordination with different agencies



KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
3. Strategic National Action Plan for Disaster Risk Reduction 2008 - 2013	National Committee for Disaster Management and Ministry of Planning European Commission Humanitarian Aid Department (ECHO) Asian Disaster Preparedness Center (ADPC) International Strategy for Disaster Reduction (ISDR)	M. Saohorn No. 274 Bd. Monivong, Phnom Penh, Cambodia www.ncdm.gov.kh/	<i>Description</i> The primary motivation of the Royal Government of Cambodia in the formulation of an Action Plan for Disaster Risk Reduction is to reduce the vulnerability of its people, especially the poor, to the effects of natural, environmental and human-induced hazards. This can best be achieved by strengthening the disaster management system.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
4. DIPECHO South East Asia Fifth Action Plan	European Commission Humanitarian Aid Department Danish Red Cross Cambodian Red Cross	Mr. Niels Juel Head of Region, South East Asia Vientiane, Lao PDR Mobile: + 66 81 875 6705 Tel: +856 21 244 2567 Fax: +856 21 213 983 Email: njud@drk.dk Mr. Mads Brinch Hansen Deputy Head of Region, South East Asia c/o IFRC Regional Delegation in Bangkok Mobile: +66 89 894 1284 Tel: +66 26 618 201 ext. 411 Fax: +66 26 619 322 Email: mabd@drk.dk Mr. Andrew Oliver-Smith Disaster Preparedness Delegate Phnom Penh, Cambodia Office Mobile: +855 12 654 247 Tel: +855 23 210 988 Fax: +855 23 210 988 Email: danishrc08@online.com.kh	<i>Description</i> A model for community-based disaster risk reduction by the Cambodian Red Cross.
5. Disaster Risk Management in Kingdom of Cambodia	Royal University of Phnom Penh	Hoy Sereivathanak Reasey Royal University of Phnom Penh Russian Federation Boulevard, Toul Kork, Phnom Penh, Cambodia Tel: 855-23-883-640 Fax: 855-23-880-116	<i>Description</i> Includes the following: • Country Risk Profile • Institutional and Legal Framework for Disaster Risk Management • Disaster Risk Management in the Poverty Reduction Strategy and Country Development Plans • Assessment of Disaster Preparedness and Response Interventions • Priorities for Disaster Risk Reduction in Cambodia

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
6. Monitoring and Reporting Progress on Community-Based Disaster Risk Management in Cambodia	European Commission's Humanitarian Aid Department (ECHO) United Nations Economic and Social Commission for Asia and Pacific (UNESCAP) Asian Disaster Preparedness Center (ADPC)	European Commission's Humanitarian Aid Department (ECHO) United Nations Building Rajadamnern Nok Avenue Bangkok 10200, Thailand Tel: (66-2) 288-1234 Fax: (66-2) 288-1000	<i>Description</i> This report has been culled from the summary of project documents and questionnaires submitted for the various CDBRR and DRM activities such as the Strategic National Action Plan (SNAP) and the Community-Based Disaster Risk Management (CDBRM) award. Secondary data collection was drawn from interviews and discussions with NGOs and government representatives, but limited to submitted information and survey of specific community and local-level CDBRR activities.
INDONESIA			
1. Integrated Monitoring Enables Good Early Warning: The 2007 Kelud Volcano Crisis in Indonesia	Center for Volcanology and Geological Hazard Mitigation	Sri Hidayati Center for Volcanology and Geological Hazard Mitigation Jl. Diponegoro 57 Bandung 40122 Indonesia Email: ichi@vsi.esdm.go.id	<i>Description</i> The Center for Volcanology and Geological Hazard Mitigation (CVGHM) monitors the Kelud volcano using 5 seismometers (L4-C, 1 Hz). Four of the seismometers are installed close to the crater and another about 5 km from it. Two tilt meter stations have been set up on the west and SW flanks. A temperature sensor was installed in the crater lake to monitor the lake temperature on the surface, at 10 m and 15 m of depth.
2. Indonesia: A Review of NGO Coordination in Aceh Post-Earthquake/Tsunami	International Council of Voluntary Agencies (ICVA)	International Council of Voluntary Agencies 26-28 avenue Giuseppe Motta 1202 Geneva, Switzerland Tel: +41 (0)22 950 9600 Fax: +41 (0)22 950 9609 Email: secretariat@icvanetwork.org	<i>Description</i> This report notes that overall efforts in Aceh have resulted largely in exchange of information and generally have not arrived at a rationale assessment of needs, capacities of organizations, and a subsequent agreed upon division of labor.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
3. UN-HABITAT and Aceh Nias Reconstruction Agency Celebrate “Two Years of Aceh Nias Settlements Support Programme”	United Nations Human Settlements Programme	United Nations Human Settlements Programme 325 East 38th Street, New York, NY, 10016, USA Tel: +1-212-972-8333 Fax : +1-212-972-9780 Email: ptri@indonesiamission-ny.org www.indonesiamission-ny.org/	<i>Description</i> Banda Aceh, Indonesia, 3 July – Commemorating two years of UN-HABITAT’s post-tsunami reconstruction work in Aceh and Nias, a photo book and video documentary was launched here today amidst a function attended by over 200 representatives of development agencies and community representatives.
4. The Role of NGO in Promoting Disaster Risk Reduction and Climate Change Adaptation Efforts in West Sumatra - Indonesia		Lany Verayanti DRR Specialist Jl. Rohana Kudus128, Kampung Ladang, Lubuk Alung, Padang Pariaman Email: lanyverayanti@gmail.com	<i>Description</i> Discusses how Indonesian NGOs participate in rescue and relief operations
LAO PDR			
1. Mainstreaming DRR in the Education Sector in Lao PDR	ADPC	Dr. Keovivone Outhachak Cabinet Office Ministry of Education Email: keovivone@hotmail.com Mr. Vilayphong Sisomvang Deputy Director National Disaster Management Office Email: sisomvang1@yahoo.com Aloysius Rego Deputy Executive Director Asian Disaster Preparedness Center Email: ajrego@adpc.net Arghya Sinha Roy, Program Manager Email: arghya@adpc.net Ronilda Co, Project Manager Email: ronilda@adpc.net	<i>Description</i> This document highlights the experience of undertaking a Priority Implementation Partnership on Mainstreaming DRR in the Education Sector in Lao PDR implemented by the Ministry of Education together with the National Disaster Management Office, Asian Disaster Preparedness Center, United Nations Development Programme, and with support from the European Commission Humanitarian Aid department.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
2. National Progress Report on the Implementation of Hyogo Framework for Action (2011-2013)	Prevention Web Cabinet Office	Mr. Masatoshi Yokkaichi Email: masatoshi.yokkaichi@cao.go.jp www.preventionweb.net	<i>Description</i> International strategy report of Lao PDR on National Disaster Reduction.
MYANMAR			
1. Guidance on Mainstreaming Disaster Risk Reduction in the Education Sector; Rural Settings	Ministry of Social Welfare, Relief and Resettlement, Ministry of Education, in partnership with ASEAN, UN, Asian Disaster Preparedness Center (ADPC)	Aloysius Rego Deputy Executive Director Arghya Sinha Roy Asian Disaster Preparedness Center (ADPC) Email: ajrego@adpc.net	<i>Description</i> The “Guidance on Mainstreaming Disaster Risk Reduction in the Education Sector – Rural Settings” highlights the need for mainstreaming disaster risk reduction in the education sector in Myanmar and identifies key approaches for mainstreaming based on the good practices, innovative ways, and lessons learned by government, UN agencies, Red Cross, NGOs and other stakeholders involved in the Cyclone Nargis recovery. Lastly, this document presents the key challenges and opportunities in integrating DRR in the education sector in Myanmar.
2. Award-winning Entry on Best Practices on Education for Disaster Risk Reduction	Department of Higher Education, Yangon, Myanmar	Dr Zaw Myint Deputy Director General Department of Higher Education Yangon, Myanmar Tel: 95-1-513114 Mobile: 95-9-8301931 Fax: 95-1-513115 Email: acahq@dhelm-edu.gov.mm ; zawmyint.uzm@gmail.com	<i>Description</i> The entry won in the SEAMEO-Japan ESD Award held from 2012 to 2014. The Award promotes and shares best practices in ESD in schools across Southeast Asia. The objectives of the award scheme are as follows: 1. To raise awareness of ESD in schools and communities across Southeast Asia; 2. To promote ESD best practices in schools and communities across Southeast Asia; 3. To share and exchange knowledge and best practices and ESD in schools across Southeast Asia and Japan; and 4. To encourage networking among schools and communities which implement ESD practices in Southeast Asian countries and Japan.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
3. Capacity Building for Disaster Risk Reduction (DRR) at Community Level – A Myanmar's Case	SEEDS Asia in Myanmar	SEEDS Asia in Myanmar MES Building, Hlaing Campus, Hlaing Township, Yangon, Myanmar	<i>Description</i> To strengthen resilience of communities at risk of natural disasters in Myanmar, this project raised awareness of disaster risk reduction in cyclone-affected communities. The components were: (1) school safety, (2) “one village one shelter,” and (3) Mobile Knowledge Resource Centre and Water Knowledge Resource Centre.
PHILIPPINES			
1. Mainstreaming Disaster Risk Reduction in the Education Sector in the Philippines	Centre for Disaster Preparedness (CDP)	CSWCD Bldg., Ramon Magsaysay Ave. University of the Philippines Diliman Quezon City, Philippines Telefax: +63-2-926-6996 Tel: +63-2-9287285 Email: cdp@info.com.ph, cdp.phil@gmail.com	<i>Description</i> Identifies 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
2. Advancing Safer Communities and Environments against Disaster (ASCEND)	Christian Aid and CARE Nederland	Daphne Villanueva Country Representative, Christian Aid 2nd Flr. Manila Observatory Bldg. Ateneo de Manila University Loyola Heights, Quezon City Tel: +632 441-1117 Email: DVillanueva@christian-aid.org Celso Dulce CARE Nederland Representative Rooms 202 and 203, Casa Rafael 1223 Quezon Avenue, Quezon City Tel: +632 921-0070 Email: celso_dulce@yahoo.com	<i>Description</i> The consortium is composed of Christian Aid and CARE Nederland, and their partners. Christian Aid is an international development organization working on disaster risk reduction and climate change adaptation, urban poverty, mining and indigenous peoples, and challenging unjust economic policies. CARE Nederland is a Dutch foundation working in 60 developing countries to achieve better living conditions of vulnerable households, giving focus to women and girls. It focuses on two themes: peace building and disaster risk reduction.



KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
3. PDC and EMI Develop Risk Reduction Tools for Megacities	Pacific Disaster Center Earthquakes and Megacities Initiative	Ray Shirkhodai Executive Director Pacific Disaster Center 1305 North Holocono Street, Suite 2, HI-96753, Kihei, Hawaii, USA Email: rays@pdc.org	<i>Description</i> The Pacific Disaster Center and Earthquakes and Megacities Initiative have jointly developed three innovative “risk communication tools” to facilitate information sharing and promote city stakeholder participation and ownership transfer. They foster a better understanding of the linkages between disaster risk and development progress.
4. Philippines: Disaster Risk Management in Urban Areas	Department of Interior and Local Government Deutsche Gesellschaft für International (GIZ)	Olaf Neussner GIZ Office Philippines Email: giz-philippines@giz.de , olaf.neussner@giz.de	<i>Description</i> The project’s overall goal is to reduce casualties, damages and losses. The approach is two-fold: In the short-term, the project implements effective and highly visible structural risk reduction (e.g., dikes, canals etc.) and preparedness measures. In the long-term, the project aims to increase the institutional capacities of local governments (e.g., planning and budgeting of disaster risk management strategies).
5. Reducing Disaster Risks through the Purok System	UNISDR	UNISDR Palais des Nations CH1211 Geneva, Switzerland Tel: +41 229178907-8 Fax: +41 229178964 Email: isdr@un.org www.unisdr.org	<i>Description</i> The Municipality of San Francisco in Camotes Island, Cebu, has had its share of devastation brought by tropical storms in 1982 and 1990. Though lessons from these disasters took some time to learn, residents of the farming and fishing communities of the LGU are now tackling both the problems of disaster and poverty hand in hand through what they call the Purok System.
6. Disaster Risk Reduction and Climate Change Adaptation	International Recovery Platform	International Recovery Platform Secretariat Hitomiraikan 5F 1-5-2 Wakinohamakaigan-dori Chuo-ku, Kobe 651-0073, Japan Tel: +81-78-262-6041 Fax: +81-78-262-6046 Email: info@recoveryplatform.org www.recoveryplatform.org	<i>Description</i> Local government experiences from Albay Provincial Government, Philippines.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
7. Disaster Risk Reduction Resource Manual	Department of Education	Department of Education DepEd Complex, Meralco Avenue Pasig City, Philippines Tel: +632 687 4177, 637 2922 Fax: +632 636 4879, 637 6209 www.deped.gov.ph	<i>Description</i> The manual is for school administrators, supervisors and school teachers, to provide them with information needed to reduce risk and make schools safer. The Department of Education through the Technical Working Group of the Department's Disaster Risk Reduction Management conceptualized the promotion of hazard/disaster awareness, to manage impacts, and to help all school communities to reduce the risk of threats from natural and human-made/induced disasters.
SINGAPORE			
1. Strategies of Crisis Management from Contingent Perspective	National University of Singapore	Jerry Wenjie Ping Department of Information Systems National University of Singapore Email: pingwenjie@nus.edu.sg Tingru Cui Department of Information Systems National University of Singapore Email: cuitingru@nus.edu.sg Shan L. Pan Department of Information Systems National University of Singapore Email: pansl@nus.edu.sg	<i>Description</i> With the chaotic nature of disasters and the uncertainty that surrounds them, the understanding of how to achieve effectiveness in crisis management remains limited. This article investigates how governments apply various capabilities in the crisis management process contingent upon the differing nature of disasters.
2. Disaster Management in a City State		Albert Seow Singapore Civil Defence Force HQ Singapore Civil Defence Force 91 Ubi Avenue 4 Singapore 408827	<i>Description</i> Being highly urbanized, Singapore's main challenges are man-made and technology-based disasters. Examples of major incidents are the collapse of the six-storey Hotel New World in 1986 and the SARS crisis in 2003. The two best practices shared in this paper are Singapore's disaster response system and the experience of managing the SARS crisis.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
THAILAND			
1. Introduction to Disaster Risk Reduction in Education	UNESCO Myanmar	World Heritage Centre UNESCO 7, Place de Fontenoy 75352 Paris 07 SP, France Tel.: +33 (0)1 45 68 24 96 Fax: +33 (0)1 45 68 55 70 Email: wh-info@unesco.org	<i>Description</i> This manual has been designed with a focus on disaster risk reduction in education, which goes beyond education in emergencies. The contents of the information and training package developed under the programme are along the lines of the internationally agreed approach of the Hyogo Framework for Action (HFA) towards building resilience, as seen through the education lens.
2. Natural Disaster Preparedness and Education for Sustainable Development	UNESCO	UNESCO Asia and Pacific Regional Bureau for Education 920 Sukhumvit Rd., Prakanong Bangkok 10110, Thailand Asia and Pacific Regional Bureau for Information and Knowledge Management Penchun Lanchun 920 Sukhumvit Road, Prakanang, Klangtoey, Bangkok 101, Thailand Tel: (66) 2 391 0511, ext. 229 Email: j.penchun@unesco.org , Lkm.bgk@unesco.org	<i>Description</i> This publication draws together the work completed under the “Educational Materials for Education for Natural Disaster Preparedness in Asia-Pacific in the Context of Education for Sustainable Development” project. Natural Disaster Preparedness and Education for Sustainable Development was produced by the UNESCO Asia and Pacific Regional Bureau for Education and financed by the Japanese Funds-in-Trust of the Ministry of Education, Culture, Sports, Science and Technology as well as the public donations contributed to UNESCO Bangkok by the Swiss National Commission for UNESCO.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
TIMOR-LESTE			
1. Community-Based Disaster Risk Management in Timor-Leste	Austcare	Dr Jay Maheswaran Austcare - Timor Leste 234 Newnham Road Upper Mt Gravatt Tel: 1300 138 096 Fax: (07) 3420 3093 Email: Admin@AustCare.net.au	<i>Description</i> Presents the following: • Timor-Leste overview • National policy on disaster management • Civil unrest and natural disasters • The major recurrent disasters • Government's strategy • The role of NGOs • Participatory approach for CBDRM activities on the ground
2. Humanitarian Assistance Matrix - Timorese NGO Register - East Timor	The World Bank	The World Bank 1818 H Street, NW Washington, DC 20433 USA Tel: (202) 473-1000 Fax: (202) 477-6391	<i>Description</i> Contains the country's list of NGOs and their contact details.
3. Reducing the Risk of Disasters and Climate Variability in the Pacific Islands (Timor-Leste Country Assessment)	The World Bank Global Facility for Disaster Reduction and Recovery (GFDRR)	The World Bank 1818 H Street, NW Washington, DC 20433 USA Tel: (202) 473-1000 Fax: (202) 477-6391 Thomas Davenport Director South Asia International Finance Corporation, World Bank Fax: +1 (202) 522 2398 Email: tdavenport@ifc.org	<i>Description</i> This assessment highlights aspects such as the current country status; gaps, opportunities, and barriers related to (a) national policies, strategies, plans, and activities to manage natural hazards; (b) the enabling environment for a comprehensive risk management approach to natural hazards; and (c) the capacity to undertake such a comprehensive approach, including institutional arrangements, human resources, public awareness, information, and national budget allocations. It also reviews and identifies the need for informed policy choices, improved decision-making processes, strengthened regulations, and legislative and policy changes required to support proposed country level activities.



KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
VIETNAM			
1. Application of Geomatics in Natural Disaster Risk Management - Case Study: Yenbai City	Water Resources University	Dr. Le Thi Chau Ha Centre of Geomatics Water Resources University 175 Tay Son, Dong Da Dist, Hanoi, Vietnam Tel: +844 38522201 Fax: +844 35633351 Email: ttth@wru.edu.vn	<i>Description</i> Contains the following: 1. Natural disasters in Vietnam 2. Disaster studies 3. GITHRA project – application of Geo Informatics technology to multi-hazard risk assessment
CROSS-CUTTING THEMES			
1. Regional Analysis on DRR Education in the Asia-Pacific Region	UNISDR	Craig Duncan Information Management Unit UN International Strategy for Disaster Reduction Geneva, Switzerland Tel: +41 22 917 8898, +41 22 917 8907-8 Fax: +41 229178964 Email: isdr@un.org	<i>Description</i> This regional analysis reviews progress in the Asia-Pacific region towards achieving the expected outcomes of the Hyogo Framework for Action's Priority 3: Using knowledge, innovation and education to build a culture of safety and resilience at all levels. The analysis not only reflects national assessments of HFA implementation, but also takes a critical look at progress made in Asia-Pacific by UNISDR and its partners in implementing the Bangkok Action Agenda. Jointly developed by its regional and national partners, the Bangkok Action Agenda provides a region-specific approach towards implementing HFA. It lays out five areas for the region to focus on to achieve the aims under Priority 3.
2. ASEAN Curriculum Sourcebook	ASEAN Southeast Asian Ministers of Education Organization (SEAMEO)	The ASEAN Secretariat 70A Jl. Sisingamangaraja, Jakarta 12110 Indonesia Tel: (6221) 7262991, 7243372 Fax: (6221) 7398234, 7243504	<i>Description</i> This ASEAN Curriculum Sourcebook is a direct response to fulfilling ASEAN's call to action. It seeks to help teachers and students explore ASEAN across subject areas and through grade levels.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
3. Science Meets Practice	DPRI (Kyoto University), International Disaster Risk Reduction Conference – Global Risk Forum Davos, Integrated Research for Disaster Risk, International Council for Scientific Unions	Kaoru Takara, Disaster Prevention Research Institute, Kyoto University Tel: +81 774 38 4125 Email: takara@mbox.kudpc.kyoto-u.ac.jp International Service Office Tel: 075-753-2544, 2244	<i>Description</i> This side event was a session to consider the need for efficient, sustainable solutions for disaster risk reduction and climate change adaptation with a multidisciplinary approach. How can science learn from practice and respond appropriately to practical needs? Are the practitioners ready to accept solutions from science? How can we bridge the gap between science and practice?
4. ESD Currents: Changing Perspectives from the Asia-Pacific	UNESCO Bangkok	UNESCO Asia and Pacific Regional Bureau for Education 920 Sukhumvit Rd., Prakanong Bangkok 10110, Thailand Asia and Pacific Regional Bureau for Information and Knowledge Management Penchun Lanchun 920 Sukhumvit Road, Prakanang, Klangtoey, Bangkok 101 Thailand Tel: (66) 2 391 0511, ext. 229 Email: j.penchun@unesco-bkk.org	<i>Description</i> Education for Sustainable Development in the Asia-Pacific Region tackles climate change questions and other global policy issues on ESD.



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5. Earthquake	NFE Accreditation and Equivalency Learning Material, Bureau of Nonformal Education, Department of Education, Culture and Sports	Department of Education DepEd Complex, Meralco Avenue Pasig City, Philippines Tel: +632 687 4177, 637 2922 Fax: +632 636 4879, 637 6209 www.deped.gov.ph	<i>Description</i> The module, intended for out of school youth, focuses on earthquakes as a preparatory lesson for those taking the Nonformal Education Accreditation and Equivalency Test.
6. Preparing for Calamities	NFE Accreditation and Equivalency Learning Material; Bureau of Nonformal Education, Department of Education, Culture and Sports	Department of Education DepEd Complex, Meralco Avenue Pasig City, Philippines Tel: +632 687 4177, 637 2922 Fax: +632 636 4879, 637 6209 www.deped.gov.ph	<i>Description</i> The module, intended for out of school youth, focuses on preparation for calamities as a preparatory lesson for those taking the Nonformal Education Accreditation and Equivalency Test.
7. Community-Based Institutes on Peace Education (CIPE)	International Institute on Peace Education, Global Education Associates	International Institute on Peace Education c/o National Peace Academy P.O. Box 306, Shelburne, VT 05482 USA Tel: 202-556-1075 Email: info@i-i-p-e.org	<i>Description</i> This "Organizer's Manual" is designed to assist formal, non-formal and grassroots educators and educational planners by providing ideas and tools for the development of community-based peace education learning projects that could contribute to the reduction of violence.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
8. Scientific Literacy and Natural Disaster Preparedness	UNESCO Bangkok	UNESCO Asia and Pacific Regional Bureau for Education 920 Sukhumvit Rd., Prakanong Bangkok 10110, Thailand Tel: (66) 2 391 0511 Email: i.penchun@unesco Bangkok.org www.unesco Bangkok.org/education/apcid	<i>Description</i> This training guide is intended for science educators and master teachers conducting in-service workshops on “Scientific Literacy and Natural Disaster Preparedness.”
9. Basic Concepts on Disaster and Disaster Management	Citizens’ Disaster Response Center (CDRC)	www.cdrc-phil.org	<i>Description</i> Discusses the basic concepts on disaster and disaster management.
10. Peace Education for School Leadership: A Case Study of PEACexcels in the Philippines	Asia-Pacific Center of Education for International Understanding (APCEIU)	120 Saemal-Ro, Guro-Gu, Seoul, Republic of Korea Tel: +82-2-774-3956 Fax: +82-2-774-3957 Email: info@unescoapceiu.org www.unescoapceiu.org	<i>Description</i> Introduces a case study from PEACeXCELS, a flexible learning course that aims to capacitate school heads in promoting a culture of peace and respect for cultural diversity.
11. The IMPACT System of Mass Primary Education	SEAMEO INNOTECH	SEAMEO INNOTECH Commonwealth Avenue, Diliman Quezon City 1101, Philippines Tel: (632) 924-7681 to 84	<i>Description</i> The articles contained in this book represent some of the most informative writings on Project IMPACT, a quality and access solution for basic education.
12. Synergies and Linkages EFA, ESD and ASPnet	ACCU- UNESCO	Asia-Pacific Cultural Centre for UNESCO (ACCU) Japan Publishers Building, 6 Fukuromachi, Shinjuku-ku, Tokyo, 162-8484 Japan Tel: +81-3-3269-4435 Fax: +81-3-3269-4510	<i>Description</i> Contains the Final Report of Asia-Pacific Forum on Educational Cooperation: Synergies and Linkages of EFA, ESD and ASPnet for Sustainable Asia and Pacific.



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13. DRR in Education	UNESCO	UNESCO Asia and Pacific Regional Bureau for Education 920 Sukhumvit Rd., Prakanong Bangkok 10110, Thailand Asia and Pacific Regional Bureau for Information and knowledge management. Penchun Ianchun 920 Sukhumvit Road Prakanong, Klangtoey, Bangkok 10110 Thailand Tel: (66) 2 391 0511, ext. 229 Email: j.penchun@unesco.org	<i>Description</i> DRR for education policymakers.
14. "Best Practices" Child Rights Mainstreaming in Cambodia's Education System	Child Rights Foundation (CRF)	#71N, Street 402, Tumnup Teuk, Chamcar Morn, Phnom Penh, Cambodia Tel: (855) 23 211 223 Fax: (855) 23 220 276 Email: info@childrightsfound.org / crf2002@online.com.kh www.childrightsfound.org	<i>Description</i> CRF documented project successes for replication and sustainability beyond project life.
15. Ihanda ang Komunidad Laban sa Kalamidad	Philippines-Australia Community Assistance Program (PACAP)	Tel: (632) 851-1477 loc. 120, (632) 851-1466 loc. 136 Fax: (632) 853-0474	<i>Description</i> This module explains how a community should prepare when calamities arise.

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16. My Little Book on Disaster Preparedness (Grades 1 to 6)	Department of Education	Department of Education DepEd Complex, Meralco Avenue Pasig City, Philippines Teli: +632 687 4177, 637 2922 Fax: +632 636 4879, 637 6209 www.deped.gov.ph	<i>Description</i> Contains key messages for children requiring appropriate guidance from adults.
17. Tales of Hope III: EDA-ESD Linkages and Synergies	UNESCO ACCU	Asia-Pacific Cultural Centre for UNESCO (ACCU) Japan Publishers Building, 6 Fukuromachi, Shinjuku-ku, Tokyo, 162-8484 Japan Teli: +81-3-3269-4435 Fax: +81-3-3269-451 education@accu.or.jp UNESCO Asia and Pacific Regional Bureau for Education 920 Sukhumvit Rd., Prakanong Bangkok 10110, Thailand Asia and Pacific Regional Bureau for Information and Knowledge Management Penchun Lanchun 920 Sukhumvit Road, Prakanang, Klangtoey, Bangkok 10110, Thailand Teli: (66) 2 391 0511, ext. 229 Email: j.penchun@unesco.org	<i>Description</i> A compilation of articles contributed by experts from a wide range of educational disciplines.
18. Manual for Teachers for the Implementation of the Essential Health Care Program in Schools	Fit for School	Melissa Ines Evora Communications Officer Fit for School 7th Floor PDCP Bank Centre Ruffino St cor. Leviste St. 1227 Makati City, Philippines Teli: +63 2 840 5035 Telefax: +63 2 812 1078 Mobile: +63 917 8530121	<i>Description</i> This manual guides teachers on the implementation of the program that reaches more than a million public elementary school children in the Philippines.



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19. Health Promoting Schools Facilitator's Manual	UNICEF	UNESCO Asia and Pacific Regional Bureau for Education 920 Sukhumvit Rd., Prakanong Bangkok 10110, Thailand Asia and Pacific Regional Bureau for Information and Knowledge Management Penchun Lanchun 920 Sukhumvit Road, Prakanang, klangtoey, Bangkok 10110, Thailand Tel: (66) 2 391 0511 ext. 229 Email: j.penchun@unescoibkk.org	<i>Description</i> Crafted to ensure that the elements of health promoting school strategy are within the Integrated School Health and Nutrition Program.
20. Seeds of Safety Integrating DRR into the Public Elementary School Curriculum	Save The Children	Save the Children Australia Level 6, 250 Victoria Parade, East Melbourne, Victoria 3002, Australia Tel: +61 1800 76 00 11	<i>Description</i> This compilation of lesson plans was designed by teachers for teachers. It shows how key disaster risk reduction messages can be integrated into the public elementary school curriculum at all grade levels.
21. From Catastrophe to Opportunity: Children in Asia Creating Positive Social Changes after Disasters	Plan Philippines	Plan Philippines 4th Bloomingdale Building No. 205 Salcedo Street Legaspi Village, Makati City, Philippines Tel: +632 813 0030 to 33	<i>Description</i> This report provides a closer look at three post-disaster pilot programmes that Plan Country Offices have implemented, each programme taking a different approach to helping children.
22. Experience with and Preparedness for Emergencies and Disasters among Public Schools in California	UCLA School of Public Health	Ms. Rebecca Wolfe Assistant to the Dean 405 Hilgard Ave, Los Angeles, CA 90095, USA Email: rwolfe@ph.ucla.edu	<i>Description</i> This study assessed schools' experience with and preparedness for, emergencies and disasters. Data were collected by mail survey from 157 public schools in California. The majority of schools have experienced emergencies in recent years. Although respondents generally feel their school is well-prepared for future emergencies, limitations were identified in their disaster plans—availability of emergency supplies, training, and inter-agency coordination, with some differences between primary and secondary schools.

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23. Guidebook for Planning Education in Emergencies and Reconstruction	UNESCO – International Institute for Education Planning	Ms. Estelle Zadra Chief of Publication & Communication 7-9 rue Eugene-Delacroix 75116 Paris, France Email: e.zadra@iiep.unesco.org	<i>Description</i> The guidebook for planning education in emergencies and reconstruction helps the International Institute for Educational Planning accomplish its mission of strengthening the national capacities of UNESCO Member States in policy-making, educational planning and administration. The Institute carries out four complementary functions: • The training of national senior educational personnel and teaching staff and institutions. • Research and studies pertaining to educational policy-making, planning and administration. • The dissemination of the results of its work to policy-makers, civil servants, research workers, administrators and representatives of educational cooperation agencies. • Operational support to specific countries, as well as advisory services to agencies, based on requests.
24. Minimum Standards for Education in Emergencies, Chronic Crises and Early Reconstruction	UNESCO – International Institute for Education Planning	Ms. Estelle Zadra Chief of Publication & Communication 7-9 rue Eugene-Delacroix 75116 Paris, France Email: e.zadra@iiep.unesco.org	<i>Description</i> The Minimum Standards for Education in Emergencies (MSEE) is both a handbook and an expression of commitment that all individuals – children, youth and adults – have a right to education during emergencies. They echo the core belief that all possible steps should be taken to alleviate human suffering arising out of calamity and conflict, and that people affected by disaster have a right to life with dignity.
25. Education in Emergencies in South Asia: Reducing the Risks Facing Vulnerable Children	UNICEF Regional Office for South Asia	Ms. Merlinda R. Smith Education Emergencies Project Officer Leknath Marg, Kathmandu 44600, Nepal Email: rosa@unicef.org	<i>Description</i> A large proportion of children in poor countries are out of school because of conflict or other emergencies, many of them girls. This research aims to identify those whose education is the most vulnerable in times of emergency and to suggest ways of reducing this vulnerability. The research is intended to stimulate discussion on future action.
26. Minimum Standards for Education: Preparedness, Response, Recovery	Inter-Agency Network for Education in Emergencies (INEE)	Ms. Tzvetomira Laub Coordinator for Minimum Standards 122 East 42 nd Street, 12 th Floor New York, NY 10168, USA Email: minimumstandards@ineesite.org	<i>Description</i> Education is a fundamental human right for all people. It is especially critical for the millions of children and youth affected by conflict and disasters, and yet it is often significantly disrupted in emergency situations, denying learners the transformative effects of quality education.

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27. Education in Emergencies: A Toolkit for Starting and Managing Education in Emergencies	Save the Children	Ms. Susan Nicolai Education Manager 1 St John's Lane, London EC1M 4AR, UK Email: s.nicolai@saveethechildren.org.uk	<i>Description</i> The pack was developed in response to a growing need for clear, practical tools that would guide staff in understanding and implementing education work in emergencies. Through engagement with Country Programmes, an effort was made to identify common principles and viable approaches to be used as the basis for future response.
28. Peace Education in UNICEF	The Peace Education Working Group in UNICEF	Ms. Susan Fountain Consultant UNICEF New York	<i>Description</i> A working paper to stimulate discussion and networking among UNICEF colleagues to move towards a clearer articulation of good practice in peace education, and to pave the way for further exploration of how best to evaluate the impact and effectiveness of this area of UNICEF activity.
29. Helping Child Survivors of Disaster: A Practical Guide for Caregivers	IBM- Corporate Citizenship & Corporate Affairs Organizational Resilience International Institute for Trauma & Crisis Continuing Education Program Inc. Department of Psychiatry	Organizational Resilience International, LLC 85 Warren Street, Concord, NH 03301 Tel: 603-369-3481, 1-800-807-6125 Email: info@oriconsulting.com www.oriconsulting.com	<i>Description</i> This guide is intended for professional, paraprofessional, and volunteer individuals engaged in psychosocial support for children following a large-scale disaster. It hopes to be a useful instrument in re-establishing a sense of safety and predictability in the lives of children affected by natural and man-made disasters. The guide includes basic training concepts to help caregivers understand how disaster affects children's thoughts, feelings, and behavior. It also contains numerous tools that can be used to provide immediate hands-on support for children.

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30. A Child-Centered Approach to Climate-Smart Disaster Risk Management	Strengthening Climate Resilience Plan International	Eldis Communities Institute of Development Studies (IDS) at the University of Sussex Brighton, BN1 9RE, UK Tel: +44 (0)1273 915815 Email: eldiscommunities@ids.ac.uk www.ids.ac.uk www.plan-international.org	<i>Description</i> This publication is designed for agencies and practitioners working with children on disaster risk reduction and climate change adaptation. The Climate-Smart Disaster Risk Management Approach (CSDRM) is an approach that supports organizations to think and work in integrated ways. It sets out on an integration journey while seeking to inform strategic planning, program development and policymaking.
31. Children's Charter For DRR	Plan International	www.plan-international.org	<i>Description</i> Contains a list of the Children's Charter for DRR.
32. Children, Climate Change and Disasters	Institute of Development Studies	Institute of Development Studies at the University of Sussex Brighton BN1 9RE, UK T: +44 (0) 1273 606261 F: +44 (0) 1273 621202 Email: ids@ids.ac.uk www.ids.ac.uk	<i>Description</i> Disaster risk reduction is one of the greatest contemporary challenges for development and disaster risk reduction work as part of efforts to adapt to climate change. This acknowledges that: - the impacts of extreme events are often most severe on children, and they have specific needs for protection during and after disasters; - climate change and disasters will affect children's future livelihood opportunities; - children have a right to participate in decisions affecting their lives; and - children can play an active role in improving the effectiveness of actions to reduce disaster risks and adapt to a changing climate.
33. The Benefits of a Child-Centred Approach to Climate Change Adaptation	UNICEF Plan International	UNICEF UK 30A Great Sutton Street EC1V 0DU, London, UK Tel: (+44) 844 801 2414 Email: climate@unicef.org.uk Plan International Chobham House, Christchurch Way Woking Surrey, GU21 6JG, UK Tel: (+44) 1483 755 155 Email: feedback@plan-international.org	<i>Description</i> The aim of this paper is to present a scoping study that highlights some of the evidence in an economic argument for a child-centred approach to adaptation.



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34. Child-Centred DRR Toolkit	Plan International	Plan International Fins gate, 5-7 Cranwood Street, London EC1V 9LH Tel: +(44) 20 7482 9777, 0300 777 9777 Fax: +(44) 20 7482 9778, 0300 777 9778 (UK) Email: mail@plan-international.org.uk www.plan-uk.org	<i>Description</i> This toolkit is made up of four modules focusing on: 1. Training Children on Disaster Risk Reduction Through the Hazard, Vulnerability and Capacity Assessment. This module contains guidelines for training with children, and a training manual with a series of training sessions and activities to conduct a child-centred HVCA. It also provides the foundation for a child-centred DRR programme – as a participatory, HVCA process as a key to a successful DRR programme/project. 2. Planning, Monitoring and Evaluating Child-Centred Disaster Risk Reduction Programmes. This module contains a framework for planning, monitoring and evaluating child-centred DRR, as well as important guidelines and tools for project/programme designing, such as child-centred DRR outcomes and indicators, and for designing project/programme designing, such as focus group questions. It also provides a more theoretical description of the child-centred DRR approach and expected outcomes. 3. Action Planning with Children on Disaster Risk Reduction. This module contains guidelines and tools for conducting action planning with children, including how to support children to develop and implement small scale DRR projects. 4. Advocacy with Children on Disaster Risk Reduction. This module contains an advocacy framework, guidelines, and case studies from Plan's experience doing DRR advocacy work with children locally, nationally, and internationally. It also provides guidelines and tools for planning advocacy work with children.
35. Living with Disasters and Changing Climate is About Children	Save the Children Sweden Chaimontree, Wannachan Apple	Save the Children Sweden Southeast Asia and the Pacific Regional Office 14th fl., Maneeya Centre 518/5 Ploenchit Road, Patumwan Bangkok 10330 Thailand Tel: +66 (0) 2 684 1046-7 Fax: +66 (0) 2 684 1048 Email: scs@seap.savethechildren.se seap.savethechildren.net www.savethechildren.net	<i>Description</i> This book has three parts: Part 1: Introduction to the world of increasing disasters and a changing climate Part 2: Children want to take action and tell their stories of the impact of disasters and climate change on their lives as well as their activities to overcome the effects of disasters and reduce the impact of future disasters and climate change on their lives. Part 3: What children want to see happening collects children's wishes – what they want to see happening with regard to disaster risk reduction in their communities.

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36. Lesson Plan: Care for Animals After Natural/ Man-made Disaster	WSPA	World Society for the Welfare of Animals South and Southeast Asia Office 19th Floor, Olympia Thai Tower 444 Ratchadapisek Road Huay Kwang Bangkok 10310, Thailand Tel: +66 2 513 0475 Fax: +66 2 513 0477 Email: wspa@wspathailand.org www.wspa-international.org www.wspathailand.org	<i>Description</i> Lesson plan that can be included in the educational curriculum of students on how they can safeguard their farm animals or pets at home.
37. WSPA Disaster Management Activities	WSPA	World Society for the Welfare of Animals South and Southeast Asia Office 19th Floor, Olympia Thai Tower 444 Ratchadapisek Road Huay Kwang Bangkok 10310, Thailand Tel: +66 2 513 0475 Fax: +66 2 513 0477 Email: wspa@wspathailand.org www.wspa-international.org www.wspathailand.org	<i>Description</i> The brochure contains activities that WSPA offers for communities that may need help with their farm animals after a natural or man-made disaster.
38. Humanitarian Exchange	HPN Humanitarian Practice Network Managed by Humanitarian Policy Group	Overseas Development Institute 111 Westminster Bridge Road London SE1 7JD, United Kingdom Tel. +44 (0) 20 7922 0300 Fax. +44 (0) 20 7922 0399 Email: hpn@odi.org.uk www.odi.hpn.org	<i>Description</i> This edition presents articles on other subjects of concern to policymakers and practitioners in the humanitarian sector: the role of Islamic charities, the analysis and integration of market factors in food security in West Africa, and improving accountability to beneficiaries.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
39. Defining Disaster Resilience: A DFID Approach Paper	Department for International Development	Department for International Development 1 Palace Street London SW1E 5HE UK or Abercrombie House Eagle Sham Road East Kilbride Glasgow, G75 8EA, UK Tel: +44 (0)20 7023 0000 Fax: +44 (0)20 7023 0016 Email: enquiry@dfid.gov.uk www.dfid.gov.uk	<i>Description</i> This Approach Paper is intended to inform the next phase of DFID's work on resilience to both natural and man-made disasters. This is part of a wider process to mainstream resilience across all of DFID's work. The paper begins with an outline of what resilience is and sets out a framework to improve understanding of the different elements to be considered in building resilience through DFID's country operations. It then looks at a range of existing DFID resilience interventions at country and regional levels. The paper concludes by providing suggestions for what DFID can do to strengthen its work in this area and how it can provide strategic leadership internationally.
40. Pacific Climate Change and Disaster Risk Management Education Framework	Pacific Islands Forum	The Secretary General Pacific Islands Forum Secretariat Private Mail Bag, Suva, Fiji Tel: 679 3312 600 Email: info@forumsec.org.fj	<i>Description</i> The purpose of this paper is to seek the endorsement of FedMM of the concept of a Pacific Framework for Climate Change and Disaster Risk Management Education. This framework, which is part of the Pacific Framework on Education for Sustainable Development endorsed by the FedMM in 2006, is a response to the increasing concern in the Pacific regarding climate- and disaster-related challenges that countries face.
41. The National Disaster Risk Reduction and Management Plan (NDRRMP) 2011-2028	Department of Interior and Local Government	Department of Interior and Local Government (DILG) DILG NAPOLCOM Center EDSA corner Quezon Avenue, Quezon City, Philippines Tel: +632 925-0330 / 925-0331 Fax : +632 925-0332 www.dilg.gov.ph	<i>Description</i> The NDRRMP is a road map on how DRRM shall contribute to sustainable development. It fulfils the requirement of Philippine Republic Act No. 10121 of 2010. The NDRRMP is the document formulated and implemented by the National DRRM Council through the Office of Civil Defense (OCD) that sets out goals and actions for reducing disaster risks. It outlines the activities to strengthen the capacity of the national and local government units and partners to build the disaster resilience of communities and to institutionalize measures for reducing disaster risks.
42. Accurate Scenarios Active Preparedness Project from Asia Europe Foundation (ASEF) Public Health Network	Asia-Europe Foundation (ASEF)	Asia-Europe Foundation 31 Heng Mui Keng Terrace Singapore 119595 Tel: +65 6874 9700 Fax: +65 6872 1135 Email: info@asef.org www.asef.org	<i>Description</i> With the influenza A/H1N1 (Swine Flu) in 2009, traditional perceptions of pandemics – rapidly and globally spreading diseases – were shattered to pieces. Asia and Europe learned that a pandemic does not necessarily have to be highly lethal, but can be mild. Billions can be spent in vain on preparations for a pandemic that could turn out harmless.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
43. Our Coast – Our Future: A Disaster Preparedness Manual for Children a Complete Teaching Resource			<i>Description</i> Designed to be a complete teaching resource, this manual aims to train children to help both themselves and others in a disaster and to enable them to cope better. The premise is that when disasters strike, children are often neglected and their feelings are not considered as parents are busy protecting property and valuables.
44. World Vision's Guidelines for Child Participation	World Vision	World Vision Tel: +44 20 7939 8708 Email worldvision@control-risks.com www.wvdevelopment.org	<i>Description</i> This document gives guidance on the minimum basic expectations to uphold the quality of child participation across World Vision. The Guidelines help ensure meaningful and safe child participation by explaining what is expected from World Vision staff, adult and youth volunteers, and partner organizations prior to, during, and after participatory engagement with children.
45. Risk Management and Response to Natural Disasters through Social Funds and Community-Driven Development Operations	The World Bank	World Bank Manila Leonora Gonzales Tel: +632 637 5855 ext. 3003, 917, 3003 Fax: +632 917-3050 Email: lgonzales@worldbank.org	<i>Description</i> The Toolkit is designed to help Task Teams on World Bank social funds and community-driven development (CDD) operations to identify disaster risk management issues in their programs and projects and to design and implement appropriate responses. It introduces the concepts and components of Community Based Disaster Risk Management (CBDRM) and their key relationship to the achievement of the development and poverty reduction objectives of the World Bank. The contents draw upon the experience of social funds and CDD operations, as well as international good practice, to identify operational areas where social fund/CDD operations have a comparative advantage for achieving successful results in reducing natural disaster risks and impacts on poor and vulnerable communities. The Toolkit also provides guidance from past and current social fund/CDD operations about the most effective ways to manage operational challenges when implementing CBDRM activities, such as the rapid mobilization and scaling up of emergency response operations

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46. Manual Local Flood Early Warning Systems Experiences from the Philippines	Deutsche Gesellschaft für Technische (GTZ)	Mr. Olaf Neussner Chief Advisor DILG Compound, Kanhuraw Hill Tacioban City, Leyte, Philippines Tel: +63 53 323 8623 Fax: +63 53 323 8624 Dag-Hammarskjöld-Weg 1-5 65760 Eschborn/Germany Tel: +49 61 96 790 Fax: +49 61 96 79-11 15 Email info@gtz.de Email: www.gtz.de	<i>Description</i> This manual is based on the experience of German Technical Cooperation (GTZ) in a project supporting the establishment of Local Flood Early Warning Systems (LFEWS). The manual describes how to set up and run a local Flood Early Warning System for inland river floods. It does not include special cases like flash floods, storm surges and tsunamis. <i>Highlights</i> Includes definition of basic terms such as flood elements of an LFEWS, where and how to establish an LFEWS, risk knowledge, monitoring hazards and warning decision, dissemination and communication, response capability and cross-cutting issues, and key actors.
47. When Disaster Strikes (Interviews about Disaster Experience): Personal Reflections and Guidelines for Interviewers	Disaster Action	Pamela Dix Disaster Action No.4, 71 Upper Berkeley St London, W1H 7DB Tel: 01483 799 066 Email: pameladix@disasteraction.org.uk www.disasteraction.org.uk	<i>Description</i> These notes are based on the personal views and suggestions of members of Disaster Action concerning their experiences of being approached and interviewed about disasters. They are relevant for journalists, academic researchers, and organizations reviewing services or protocols for survivors and the bereaved. These notes serve as guide for interviewers who seek to understand the first-hand experience of a disaster. <i>Highlights</i> Part 1: Personal Reflections on Being Interviewed - discusses the pros and cons of being interviewed, providing insight on both the positive and negative aspects of the process. Part 2: Guidelines for Interviewers - provides tips on preparation for and the actual conduct of the interview, as well as the use of the material as output of the interview.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
48. Disaster Reduction Hyper base (DRH) – Allied Knowledgebase Platforms for Disaster Risk Reduction	National Research Institute for Earth Science and Disaster, Kyoto University	Hiroyuki Kameda Earthquake Disaster Mitigation Research Center, National Research Institute for Earth Science and Disaster Prevention (EDM-NIED), Kobe, and Professor Emeritus, Kyoto University, Japan Email: kameda@edm.bosai.go.jp	<i>Description</i> An international initiative “Disaster Reduction Hyper base (DRH)” is progressing to develop an effective knowledgebase to aid DRR policy. The DRH, a web-based facility, is an interactive vehicle of appropriate disaster reduction technology and knowledge that manages proposal submission, discussions for manuscript enhancement, accommodation in database, search of contents, links to relevant initiatives. <i>Highlights</i> The major part of this article will present the activities of the DRH Project and the features of DRH-Asia. In later chapters, another important issue is addressed: constituting a “DRH alliance” which is being pursued through the development of regional DRH platforms including DRH-Asia, DRH Europe/Africa, and national DRH systems for Bangladesh, Nepal, Iran, etc.
49. Transfer of Disaster Risk Reduction Lessons: Disaster Risk Management Master Planning in Asian Megacities	Earthquakes and Megacities Initiative (EMI) United Nations Development Program	Jim Buika Planner Maui County Department of Planning Maui, Hawaii, USA Fouad Bendimerad Earthquakes and Megacities Initiative (EMI) Quezon City, Philippines Jeannette Fernandez National Advisor for Disaster Risk Management, United Nations Development Program - Ecuador Shirley Mattingly Program Director, Earthquakes and Megacities Initiative Lahaina, Hawaii, USA Renato Solidum, Jr. Director Philippine Institute of Volcanology and Seismology Quezon City, Philippines	<i>Description</i> This paper introduces the Disaster Risk Management Master Plan model and the Cross-Cutting Capacity Development Program implementation methodology to mainstream disaster risk management in megacities. The 2007 United Nations Global Platform for Disaster Reduction has recognized urban risk management as an issue that requires immediate attention from governments and international institutions

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
50. Resilient Livelihoods Disaster Risk Reduction for Food and Nutrition Security	Food and Agriculture Organization of the United Nations (FAO)	Mr. Alexander Muller Laurent Thomas General Assistant Director Viale delle Terme di Caracalla 00153 Rome, Italy Tel: +39 06 57051, 06 570 53625 Fax: +39 06 5705 3729, 06 570 53152 Email: FAO-HQ@fao.org , FAO-Newsroom@fao.org	<i>Description</i> The FAO Disaster Risk Reduction for Food and Nutrition Security Framework Programme aims to provide strategic direction for the implementation of disaster risk reduction measures in member countries across the agricultural-related sectors - in line with the Hyogo Framework for Action and its five priorities for action. In addition, it promotes an inter-disciplinary and programmatic approach to disaster risk reduction for food and nutrition security, by integrating the agriculture, livestock, fisheries, forestry and natural resource management sectors, to respond more effectively to the diverse livelihoods of small-scale farmers and to the complex set of factors which contribute to disaster risks. <i>Highlights</i> The material features the key components of the framework program, namely: - Pillar 1 - Institutional strengthening and good governance for DRR in agricultural sectors. - Pillar 2 - Information and early warning systems on food and nutrition security and transboundary threats. - Pillar 3 - Promotion and diversification of livelihoods with risk reducing technologies, approaches and practices across all agricultural sectors. - Pillar 4 - Preparedness for effective response and recovery across all agricultural sectors. It also discusses DRR and CCA and details the projected measures to harnessing global action and defines the implementation arrangements.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
51. Global Assessment Report on Disaster Risk Reduction Revealing Risk, Redefining Development	UNISDR	Craig Duncan Senior Programme Officer Information Management Unit UN International Strategy for Disaster Reduction Palais des Nations, CH1211 Geneva, Switzerland Tel: +41 229178907-8, +41 22 917 8898 Fax: +41 229178964 Email: jsdr@un.org www.preventionweb.net/gar	<i>Description</i> The 2011 Global Assessment Report on Disaster Risk Reduction contributes to achieving the Hyogo Framework of Action by monitoring risk patterns and progress in disaster risk reduction. It also provides guidance and suggestions to governments and non-governmental actors alike on how they can reduce disaster risks together. <i>Highlights</i> The 2011 Global Assessment Report on Disaster Risk Reduction (GAR11) highlights the political and economic imperative to reduce disaster risks, and the benefits to be gained from doing so.
52. The Challenge of Climate Change Research to Overcome its Impact on Food Security, Poverty, and Natural Resource Degradation in the Developing World	Consultative Group on International Agricultural Research Inter-Center Working Group on Climate Change (ICWG-CC)	CGIAR Consortium c/o Agropolis International Avenue Agropolis F-34394 Montpellier Cedex 5 Tel: + 33 4 67 04 7575 Email: consortium@cgiar.org	<i>Description</i> The goal of this program is to develop the knowledge base to guide adaptation of agricultural systems that reduce the vulnerability of the developing world to the adverse effects of climate variability, improve rural livelihoods, and mitigate further climate change.
53. Disaster Management Services	Philippine National Red Cross	Philippine National Red Cross Shaw Blvd, Pasig, Kalakhang Maynila Philippines Tel: +632 631 3993	<i>Description</i> The program involves Disaster Relief Activities (DRA) and Disaster Prevention, Mitigation and Preparedness (DPMP). Red Cross used to focus “on real needs” - what to do during and after a disaster; the DMS now identifies hazard-prone areas and makes vulnerability assessment of these areas. Volunteers assess the preparedness of a community to deal with disasters.
54. Disaster Response Operations Monitoring and Information Center	Department of Social Welfare and Development	Department of Social Welfare and Development (DSWD) Palma, Lungsod Quezon, Kalakhang Maynila, Philippines Tel. (632) 931-81-01 to 07 www.dswd.gov.ph	<i>Description</i> The program focuses on disaster response and operations with Cash-for-Work/ Training program to provide actual support system to victims in the community.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
55. Community-Driven Disaster Intervention: Experiences of the Homeless People's Federation Philippines, Incorporated (HPFPI)	Human Settlement Programme, International Institute for Environment and Development		<i>Description</i> Case studies on community-driven disaster intervention in the Philippines.
56. UNISDR Terminology on Disaster Risk Reduction	UNISDR	UNISDR Geneva Tel. :+41 22 917 8908/8907 Email: isdr@un.org www.unisdr.org	<i>Description</i> The United Nations International Strategy for Disaster Reduction (UNISDR) Terminology aims to promote common understanding and common usage of disaster risk reduction concepts and to assist the disaster risk reduction efforts of authorities, practitioners and the public.
57. Summary of the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters (Hyogo Framework)	UN International Strategy for Disaster Reduction	Craig Duncan Information Management Unit UN International Strategy for Disaster Reduction Geneva, Switzerland Tel: +41 22 917 8898, 229178907-8 Fax: +41 229178964 Email: isdr@un.org	<i>Description</i> Expected outcome, strategic goals and priorities for action 2005-2015.
58. Toolkit for National Platforms for Disaster Risk Reduction in Africa Contributing to the Implementation of the Hyogo Framework for Action and the Africa Regional Strategy and Programme of Action for DRR	UNISDR	UNISDR Africa UN Complex Block N, Level 2 P.O. Box 47074, Gigiri, Nairobi, Kenya Tel: +254 20 762 1569 Fax: +254 20 762 4726 Email: ISDR-Africa@uneep.org www.unisdr.org/africa	<i>Description</i> The need to protect development in Africa is obviously an important goal. Reducing disaster risk is one way of achieving this goal, and using national platforms or coordinating mechanisms for DRR to assist the process is critical to its success. UNISDR has produced guidelines but these need to be enhanced through the elaboration of practical steps necessary to establish, maintain and sustain the platforms. The toolkit is for this purpose –outlining actions, examples and resources. The toolkit also answers key questions about how the national platform functions.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
59. Towards Total Disaster Risk Management Approach	Asian Disaster Reduction Center	Emmanuel M. de Guzman Consultant, Asian Disaster Reduction Center and United Nations Office for the Coordination of Humanitarian Affairs, Asian Disaster Response Unit Higashikan 5F, 1-5-2 Wakinohamakaigan-dori Chuo-ku, Kobe 651-0073, Japan Tel: 078-262-5540 Fax: 078-262-5546	<i>Description</i> The Total Disaster Risk Management Approach is relatively new as a concept and in practice. The prevailing practices, particularly in Asia, are more inclined towards managing response to disasters (which require preparedness) than towards managing risks and the underlying conditions that lead to disasters (which requires, among others, risk assessment, vulnerability reduction, and capacity enhancement).
60. Disaster Risk Management	Asian Development Bank	ADB Media Center Tel: +63 2 632 5090 mediacenter@adb.org	<i>Description</i> ADB's integrated disaster risk management program enhances country resilience by reducing country vulnerabilities to risks and responding faster to impacts.



KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
61. Advancing the Cause of ECCD towards a Professional Development Framework for ECCD Workers	ARNEC Save The Children	Maya P. Nayo, ECCD Advisor ARNEC Conference in Singapore Junko Miyahara, Coordinator Tel: +(65) 6332-0652 Email: junko.miyahara@arnec.net Silke Friesendorf, Communication Officer Tel: +(65) 6332-0653 Email: silke.f@arnec.net Debbie Fang, Programme Support Officer Tel: +(65) 6332-0693 Email: debbie.fang@arnec.net ARNEC c/o SEED Institute 73 Bras Basah Rd NTUC Trade Union House #07-01 Singapore 189556 Tel: +(65) 6332-0652 Email: secretariat@arnec.net	<i>Description</i> Presents the following: • Country Context • Save the Children in the Philippines • Policy Support for ECCD • Research Partnership • Phases of Framework Formulation • Pilot Pathway for Professional
62. Disaster Victim Identification Guide	INTERPOL	Ms. Mireille Balestrazzi President INTERPOL General Secretariat 200, Quai Charles de Gaulle 69006 Lyon, France Fax: +33 (0)4 72 44 71 63	<i>Description</i> The Guide contains recommendations for the identification of disaster victims. The specific religious, cultural and legal contexts of Member States needs to be taken into consideration during an operation.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
63. Disaster Risk Management in Southeast Asia: Could a Bhopal-like Accident Happen Again?	Atlas Service Partners	Alex Dali Managing Partner Risk Management Division Atlas Service Partners 111 North Bridge Road Peninsula plaza #21-01 Singapore 179098 Tel: (+65) 67 53 00 93 Fax: (+65) 68 36 22 41 Email: dali@atlascope.com , Contact@atlascope.com	<i>Description</i> Presents a study of disaster risk management in Southeast Asia.
64. Capacity Building of Community-Based Disaster Risk Assessment and Mitigation on West Java Volcano Hazard	ACCU UNESCO with WALHI Jabar, an NGO that is concerned with environmental problems	Asia-Pacific Cultural Centre for UNESCO (ACCU) Japan Publishers Building, 6 Fukuromachi, Shinjuku-kin, Tokyo, 162-8484 Japan Tel: +81-3-3269-4435 Fax: +81-3-3269-4510 UNESCO Asia and Pacific Regional Bureau for Education 920 Sukhumvit Rd., Prakanong Bangkok 10110, Thailand Rohan Cooray Project Coordinator Asia Pacific Regional Bureau for Information and Knowledge Management Tel: (66) 2 391 0511, ext. 229 Email: j.penchun@unescoibkk.org	<i>Description</i> The main thesis of the report is that disaster resilient communities are those that incorporate the concepts of education for sustainable development.



KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
65. Situation Workshop Manual for the Community and Neighbourhood Emergency Preparedness Program	Florida Department of Health	Office of Communications 2585 Merchants Row Boulevard Tallahassee, FL, USA Tel: 850-245-4111 Fax: 850- 488-6495	<i>Description</i> This manual complies with the Homeland Security Exercise and Evaluation Program (HSEEP) terminology and guidelines for the conduct of a workshop. The Pandemic Preparation Workshop consists of three pandemic influenza scenario modules to be presented for discussion among community and neighbourhood participants.
66. Wastong Pangangasiwang Basura Para sa Masaganang Buhay	Philippines-Australia Community Assistance Program (PACAP)	Philippines-Australia Community Assistance Program Tel: (632) 851-1477 loc. 120, 851-1466 loc. 136 Fax: (632) 853-0474	<i>Description</i> This module talks about proper waste management.
67. Child-Led Disaster Risk Reduction: A Practical Guide	Save The Children Alliance	Save The Children Alliance 54 Wilton Road, Westport, CT 06880 Tel: 1-203-221-4030, 1-800-728-3843 New York advocacy office 777 United Nations Plaza #3A, New York, NY 10017, USA Tel: +1 212 370 2461 Email: debra.jones@savethechildren.org	<i>Description</i> Basics of child-centered DRR from Save the Children

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
68. Disaster Risk Reduction: A Gender and Livelihood Perspective	Intercooperation (IC-HO), Info Service CDE and InfoAgrar SHL, in partnership with IC India, Bangladesh, Mali, Andes, CETRAD (Kenya) and SIMAS (Nicaragua)	Info Resources Länggasse 85, 3052 Zollikofen, Switzerland Tel.: +41 31 910 21 91 Fax: +41 31 910 21 54 Email: info@inforesources.ch www.inforesources.ch	<i>Description</i> The material provides an overview of natural disasters and their impacts; how to address disaster risk reduction through a livelihood approach; and the lessons learned from experience.
69. Understanding Disaster Resilience Grassroots Women's Strategies for Building Disaster Resilience	GROOTS International	GROOTS International 249 Manhattan Ave, Brooklyn, NY 11211, USA Tel: 1-718 388 8915 Fax: 1-718 388 0285 Email: info@groots.org www.groots.org	<i>Description</i> Floods, droughts, landslides, volcanic eruptions, hurricanes and earthquakes worsen the problems poor women experience as a result of their poverty. When asked about their disaster risk reduction strategies or resilience building strategies, women usually find it difficult to separate their everyday survival strategies from their strategies for reducing the impact of disasters. GROOTS International has tried to facilitate conversations that enable women to reflect on their development and disaster experiences to help women to create a common understanding of resilience.
70. Community Risk Management Planning Disability Inclusive Community-Based Disaster Risk Management Toolkit	Handicap International	Handicap International Valero Tower 12A, 122 Valero St., Makati City, Philippines Tel: +632 812 6990, 519 3341 Fax: +632 892 4583 Email: inclusive-drm@handicap-international.asia , mla-ofc@handicapinternational.ph ; info@handicapinternational.ph handicapinternational.ph www.disabilitydrr.org	<i>Description</i> Following a VCA, findings are transformed into risk management action plans that identify how to increase capacity and reduce risk. This section focuses primarily on contingency and preparedness planning as opposed to longer-term risk reduction plans. A contingency plan and supporting preparedness plan should be based on potential disaster scenarios and cover as a minimum: early warning systems, evacuation and rescue, shelter and relief management, first aid and medical support, individual and household preparedness.
71. A Review of Principles for Sustainable Pest Management in Rice	International Rice Research Institute (IRRI)	International Rice Research Institute UP College, Los Banos, Laguna, Philippines Tel: +632 845 0563 www.irri.org	<i>Description</i> IRRI scientific article on the basic principles of pest management in rice.



KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
72. Hybrid Rice Performance in Environments of Increasing Drought Severity	International Rice research Institute (IRRI)	International Rice Research Institute UP College, Los Banos, Laguna, Philippines Tel: +632 845 0563 www.irri.org	<i>Description</i> IRRI scientific article on hybrid rice in severe drought environment.
73. For Life, With Love	International Organization for Migration	International Organization for Migration 8741 Paseo de Roxas, Makati 1200, Philippines Tel: (02) 848 1260 www.iom.int	<i>Description</i> Training tool for HIV prevention and safe migration in road construction settings and affected communities.
74. Microsoft Coordination Helps Cope with Disasters	The Nation	Thasong Avasena The Nation 33 Irving Place, New York, New York 10003, USA Tel: 212-209-5400 Fax: 212-982-9000	<i>Description</i> Efficient coordination and exchange of information and lessons learned are key to the successful operations by Microsoft Thailand and Japan in handling and helping with natural disasters in both countries, with Microsoft Asia-Pacific playing a key role as enabler of technology along with providing funds and other assistance.
75. Scale Up, Build Up: Strengthening Local Alliances and Advocacy and Empowering Champions on Disaster Risk Reduction	ACCORD -CARE Plan Philippines	Marieta Alcid Executive Director – ACCORD -CARE Baltz Tribunalo Jr. CC –DRR Advisor – Plan Philippines Email: baltz.tribulano@plan-international.org	<i>Description</i> The project's principal objective is to support the implementation of the National DRRM Law, Framework and Plan by improving access to information and increasing resilience of high risk communities in the Philippines.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
76. Helpdesk Report: The Role of Education in Responding to Natural Disasters	UK Aid HRC Helpdesk	Laura Bolton Email: l.bolton@ids.ac.uk	<i>Description</i> The article showcases literature that discuss the role of education in response to natural disasters. Case studies feature programs in various countries. Other topics covered are the following: • Disaster risk reduction • Infrastructure • Child-centred approaches A list of organizations with contact details is also included for networking opportunities. <i>Highlights</i> The role of education in natural disaster management that appeared most frequently in the literature is teaching children about risk reduction and management. A document from the Central Board of Secondary Education in India (2006) discusses integrating a short course on disaster preparedness and management into the curriculum. The safety of school buildings is also a major consideration in looking at education and natural disaster linkages. Section 5 includes school design notes and retrofitting information. Section 6 has information on child-centred approaches to disaster management. This includes education and other participatory activities. Findings show that children play an important role both in reducing disaster risks and helping their communities become more resilient.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
77. World Conference on Disaster Reduction Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters	International Strategy for Disaster Reduction	United Nations Inter-Agency Secretariat of the International Strategy for Disaster Reduction (UNISDR) Palais des Nations, CH 1211 Geneva 10, Switzerland Tel: +41 22 9172529/762/759 Fax: +41 22 917 0563 Email: isdr@un.org www.unisdr.org	<i>Description</i> The World Conference on Disaster Reduction was held from 18 to 22 January 2005 in Kobe, Hyogo, Japan. Countries committed to adopt the present Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters (Framework for Action). The Conference provided a unique opportunity to promote a strategic and systematic approach to reducing vulnerabilities and risks to hazards. It underscored the need for, and identified ways of, building the resilience of nations and communities to disasters. <i>Highlights</i> The Hyogo Framework for Action addresses: • Challenges posed by disasters • The Yokohama Strategy: Lessons learned and gaps identified • WCDR: Objectives, expected outcome and strategic goals • Priorities for action 2005-2015 • Implementation and follow-up
78. Assessment of Capacity Gaps and Needs of South East Asia Countries in Addressing Impacts, Vulnerability and Adaptation to Climate Variability and Climate Change	UNEP Regional Resource Center for Asia and the Pacific	United Nations Environment Programme PO Box 30552, 00100, Nairobi, Kenya Tel: (254-20) 7621234 Fax: (254-20) 7624489/90 Email: uneppub@unep.org Regional Resource Center for Asia and the Pacific Outreach Building Asian Institute of Technology P.O. Box 4, KlongLuang Pathumthani 12120, Thailand Tel: +66-2 516-2124 Fax: +66-2 516-2125 Email: info@rrcap.unep.org http://www.rrcap.ait.asia	<i>Description</i> The Regional Climate Change Adaptation Knowledge Platform for Asia is a three-year program that supports research on climate change adaptation, policy making, capacity building and information sharing to help countries in Asia adapt to the challenges of climate change. The research study and synthesis cover the findings on assessment of capacity gaps and needs of South East Asian countries in addressing impacts, vulnerability and adaptation to climate variability and climate change.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
79. Managing Climate Extremes and Disasters in Asia: Lessons from the IPCC SREX Report	Climate and Development Knowledge Network Overseas Development Institute Agulhas Applied Knowledge	Dr. Tom Mitchell Head of Climate Change Black Friars, Bridge, City of London SE1 8NJ, United Kingdom Email: t.mitchell@odi.org.uk	<i>Description</i> The Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX) was commissioned by the Intergovernmental Panel on Climate Change (IPCC) in response to the need for advice on climate change, extreme weather and climate events. The SREX findings were approved by the world's governments and provides the best scientific assessment available to date.
80. Comprehensive School Safety: A Toolkit for Development and Humanitarian Actors in the Education Sector	Save the Children Foundation	Mr. Michael Novell Filed Office Director 1 Encarnacio St. corner Lapu-lapu Avenue, Magallanes Village, Makati City, Metro Manila Email: scwrpo@skyinet.net	<i>Description</i> The goals of comprehensive school safety include the following: • To protect learners and education workers from death, injury, and harm in school • To plan for education continuity in the face of expected hazards • To safeguard education sector investments • To strengthen climate-smart disaster resilience through education
81. Disaster Risk Reduction in School Curricula: Case Studies from Thirty Countries	Cultural Organization United Nations Children's Fund Japan Funds-in-Trust Co-published by UNESCO		<i>Description</i> This document reports on a UNICEF/UNESCO Mapping of Global DRR Integration into Education Curricula consultancy. The researchers were tasked with capturing key national experiences in the integration of disaster risk reductions in the curriculum, identifying good practice, noting issues addressed and ones still lacking and reviewing learning outcomes. This is a documentary research into the experiences of thirty countries.

KEY RESOURCES AND TOOLS	ORGANIZATION	CONTACT INFORMATION	SUMMARY
82. Disaster Strikes: Typhoon Town Challenge: Simulation Game	Christian Aid	Christian Aid Tel: +44 2076204444 Fax: +44 2076200719 Email: info@christian-aid.org www.christianaid.org.uk	<i>Description</i> The aim of this activity is to help pupils understand the devastating impact of a disaster on the lives of people living in poverty. After this activity, pupils should be able to: • reflect on the different needs of people living in a community/settlement; • identify the factors that create happy, healthy and sustainable places for people to live; • understand the restrictions that poverty imposes on people's resources, options and safety; • develop their understanding of another place: the Philippines; • empathize with those affected by disaster; • articulate their response to a challenging situation; • work together as a team to overcome a problem; • recognize the limitations of a simulation game and seek to further their understanding; and • engage with ways in which people can recover from disaster and reduce risk in the future.
83. Disaster Strikes: Teachers' Notes	Christian Aid	Christian Aid Tel: +44 2076204444 Fax: +44 2076200719 Email: info@christian-aid.org www.christianaid.org.uk	<i>Description</i> These resources help pupils to understand the different types of disaster, the impact that they can have on people, what can be done to prepare for and reduce the impact of disasters, and how Christian Aid works to support those affected. The materials are designed to be flexible and adaptable.
84. DepEd Educational Facilities Manual (Revised Edition of the 2007 Handbook on Educational Facilities - Integrating Disaster Risk Reduction in School Construction)	Physical Facilities and Schools' Engineering Division, Office of Planning Service, Department of Education	Department of Education DepEd Complex Meralco Avenue, Pasig City, Metro Manila, Philippines Tel: +632 635-9822, 631-0673 Fax: +632 635-9826 www.deped.gov.ph	<i>Description</i> This manual is a result of research and consultations with expert groups and individuals focusing on natural and human-induced hazards and their impact on educational facilities. It covers emerging and new developments and practices in making schools safe and applying green technologies to educational facilities.

CHAPTER 4:

DISASTER RISK MANAGEMENT INITIATIVES IN SOUTHEAST ASIA

This section focuses on the efforts of the 11 SEAMEO member countries in managing disasters at the national level, including initiatives and challenges in mainstreaming DRR in the education sector. It provides in-depth information for educators and school heads on DRRM initiatives in the region, offering guidance in the development of schools' resiliency plans (SRP).

Each member-country's hazard profile is presented. It also includes the progress of each country's implementation of the Hyogo Framework for Action and some innovative DRRM practices of member countries.



4.1 Brunei Darussalam

Geography and Climate

Brunei Darussalam is located on the northwestern coast of the island of Borneo. Characterized by flat coastal plain and about 161 kilometers of coastline, the main land area is completely surrounded by the Sarawak State of Malaysia and a portion by the South China Sea.

Brunei's climate is tropical and humid with two pronounced seasons: hot-dry and warm-wet.



Figure 23: Map of Brunei Darussalam

Source: <http://www.worldatlas.com>

Disaster Risk Profile

The risk of natural disasters happening is low from within the country. However, in 2007 to 2008, ASEAN reported that Brunei suffered its worst incidence of floods, landslides, and smoky haze resulting from forest fires in Indonesia. Due to the annual occurrence of toxic haze from outside its borders, the Brunei government is now actively participating



in regional efforts to resolve this trans-boundary issue. Consequently, the government moved to increase the nation's capacity in preparing communities for prevalent haze through early warning and public awareness campaign.

Unfortunately, there is no historical data on hazards that affected the country except for a forest fire incident in 1998 (see **Table 5**).

Table 5: Hazards in Brunei Darussalam, 2004-2013

Hazard		Freq.	No. Killed	No. Affected	Total Damage (USD '000)
Wildfire	Forest fire	1	-	-	2,000

Source: EM-DAT: The OFDA/CRED International Disaster Database, data retrieved November 7, 2013

Mainstreaming Disaster Risk Management (DRM)

His Majesty Sultan Haji Hassanal Bolkiah of Brunei proclaimed a Disaster Management Order (DMO) which established the National Disaster Council (NDC) and the National Disaster Management Center (NDMC) in 2006. The DMO provided the legal basis for action on Disaster Risk Management in the country. In the policy for sustainable development, a multi-hazard approach to disaster management was included.

In 2008, the 'Wawasan Brunei 2035' was launched. A national visioning campaign led by His Majesty the Sultan of Brunei, it had as one of its key objectives to further develop management systems for effective response to natural disasters, infectious diseases, acts of terrorism, and other emergency situations.

In April 2013, the Strategic National Action Plan for Disaster Risk Reduction (SNAP) was launched by the NDMC. SNAP is an assessment tool for disaster risks, vulnerability and capacity which makes use of the positive effects and lessons from initiatives of various stakeholders. Outcomes from the SNAP will be part of the HFA country reports.

Monsoon floods affect the country regularly. The traditional response was to improve physical infrastructure related to flood prevention. With an active NDCMC, the focus shifted towards implementing flood mitigation projects in flood-prone areas. Based on the official statement issued by the Director of National Disaster Management Center during the third session of the Global Platform for Disaster Risk Reduction held in 2011, approximately USD 236 million worth of flood projects were implemented which resulted in a significant reduction of flood-prone areas from 918 square kilometers in 1998 to about 315 square kilometers in 2008.

In 2011, DRR was integrated into the National Development Plan. The following are some highlights:

- The NDMC adopted the Incident Command System (ICS) in 2010 through the ASEAN-US program on Disaster Management. A multi-sector approach in disaster preparedness and response was adopted.
- NDCMC targeted to reduce flood-prone areas to about 70 square kilometers. Flood mitigation projects considered the adverse weather patterns due to climate change. Structural measures were adopted for flood risk reduction such as channelization, levees and pumping, retention ponds, earth control measures, relocation, and development control and planning.
- The National Land Use Master Plan for 2006 to 2025 was prepared to supersede the 1987 to 2005 Negara Brunei Darussalam Master Plan. Zoning laws were implemented for the protection and promotion of natural resources and environmentally sensitive areas. Proper zoning systems were implemented in various sites for housing development and industrial reserve, such as Sungai Liang.

Mainstreaming DRR in Education

The government is implementing several strategies to mainstream DRR in schools and their surrounding communities.

Based on the HFA mid-term report (2009-2011), the Ministry of Education (MOE) has already developed guidelines and standard operating procedures in the event of disasters (e.g., floods and spread of diseases). The full integration of DRR into the school's curriculum, especially at primary and secondary levels, is an ongoing effort by the MOE.

According to the Science, Technology and Environment Partnership Center (STEP Center), there are various activities being initiated by the MOE on values-based education and on environmental issues affecting the country. The education system has already integrated ESD-related issues on environment and health in geography and science subjects, for example. The content in the formal curriculum is basically values-based approach to teaching and learning (integration) and subject-based (sciences, Social Studies and geography, agriculture). Examples of topics studied in social studies and science are Our Resources, Global Warming, Pollution, Deforestation, Personal Health, and Conservation of Water. These discussions are expected to create awareness and concern about the environment among the students.

An ad hoc committee oversees the implementation of the school safety and preparedness plans. The MOE develops guidelines for action in the event of floods, disease outbreaks



and earthquakes. The school head is authorized to temporarily close the school in the event that it is inaccessible due to floods or other causes. When classes are suspended for more than a day, homework will be given to make up for the class disruption. Special classes are held to make up for the lost days.

An integrated council in the Ministry of Education is responsible for inspection of school buildings. As a result of the landslide events of 2009, a regulation was passed in 2010 requiring, all new construction projects to secure Environmental Impact Assessments' (EIA) approval from the Ministry of Development prior to actual commencement of the project.

Emergency fire drills, fire safety exercises and seminars are held at least twice a year as part of a national policy practiced for many years.

The school's health promotion campaign is a major strategic program under the Health Promotion Unit of the Department of Schools, Ministry of Education and the Ministry of Health. Activities included in the program are seminars and training on first aid, dental care, personal body physical checkup and proper hygiene. There is free medical checkup and consultation given to students, teachers and school staff and government ministries in the country. This is part of the national "promoting a healthy lifestyle" campaign of the government.

In 2012, Brunei participated in a project organized by the Asia-Pacific Economic Cooperation (APEC) and Tsukuba University entitled 'Emergency Preparedness Education: Learning from Experience, Science of Disasters and Preparing for the Future.' The project aimed to teach students the "science of survival" in the context of natural disasters. Lesson plans on the science of how to survive various forms of hazards were introduced to 64 elementary schools, with workshops and seminars held to equip teachers with the use of the lesson plans.

Since 2008, the MOE has been supporting the ASEAN Regional Essay and Drawing Competition held every year on October 13, to commemorate the ASEAN Day of Disaster Management (ADDM) and the International Day for Disaster Risk Reduction (IDDRR). The MOE encourages students and teachers to join the contest as part of promoting awareness on disaster resilience and DRR initiatives in the ASEAN region.

Mainstreaming DRR in Health

The Ministry of Health (MOH) has developed a pandemic response plan, which includes a disease surveillance system. An example of such a system is the Influenza Surveillance System that gives warning on emerging threats of new virus strains like H1N1 and the H5N1.

The Government assigned the NDMC to coordinate this multi-sector pandemic preparedness process. In August 2009, the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) and the Business Continuity Management Institute in Singapore organized a multi-sector Pandemic Preparedness Orientation Meeting for various line ministries in order to introduce the relevant non-health issues and give an overview about continuity of operations planning for a pandemic.

The NDMC is part of the sector council of ASEAN's Committee on Disaster Management (ACDM). It is also officially linked to the Asian Disaster Reduction Center (ADRC), the Asian Disaster Preparedness Center, the Pacific Tsunami Warning Center and the Pacific Disaster Center. At the global level, NDMC works closely with the UNISDR, and UNOCHA to promote and establish disaster risk reduction programs and projects, particularly for the identified Hyogo priority areas.

Challenges

1. There is currently no formal policy issuance on the mainstreaming of DRR in the education sector. A national policy will facilitate the creation of programs for capacity building, curriculum integration and other DRR activities to be institutionalized in the school system.
2. There is a need for a more robust information management system that will produce reliable DRR information on key hazards and vulnerabilities in a timely manner. Historical data on climate factors and past hazards that affected the country will be useful for developing strategies and action for risk mitigation and improved preparedness.
3. There is no database on the number of people and economic loss due to a particular hazard. Such data are important in the monitoring and evaluation of DRR programs and projects, for these can feed into future plans.

Summary of Strengths and Areas for Improvement

Strengths

- ✓ An integrated council in the Ministry of Education is responsible for inspection of school buildings.
- ✓ A regulation was passed requiring all new construction projects to secure Environmental Impact Assessments' (EIA) approval from Ministry of Development prior to actual commencement of the project.



- ✓ The MOE has developed guidelines for action in the event of floods, outbreaks and earthquakes.
- ✓ The full integration of DRR into the school curriculum, especially at primary and secondary levels, is an ongoing effort by the MOE. Lesson plans and materials have also been developed.
- ✓ Emergency fire drills, fire safety exercises and seminars are held at least twice a year as part of a national policy practiced for many years.
- ✓ A set of activities is held yearly to commemorate ASEAN Day of Disaster Management and International Day for Disaster Risk Reduction (IDDR) as part of national awareness campaign.

Areas for Improvement

- ✓ Only an ad hoc committee oversees the implementation of the school safety and preparedness plans.
- ✓ There is currently no formal policy issuance on the mainstreaming of DRR in the education sector.

4.2 Cambodia

Geography and Climate

The kingdom of Cambodia shares borders with Thailand in the north and west, with Laos in the northeast, with Vietnam in the east and southeast, and the Gulf of Thailand in the south. Cambodia experiences tropical monsoons with the rainy season extending from May to October and the dry season in January and February. The country experiences an annual flooding during the southwest monsoon when the Mekong River and Tonle Sap tributaries overflow. The imbalance in the distribution of monsoon rainfall causes dry spells in some parts of the country.



Figure 24: Map of Cambodia

Source: Source: <http://www.worldatlas.com>

Disaster Risk Profile

Cambodia is vulnerable to floods because most of the country's territory is located along the Mekong River. Flooding is the most frequently occurring hazard in the country, affecting the most number of people. Floods kill an estimated 100 people and cause



USD100-170 million in losses to the agriculture industry annually. In the past ten years, there were eight reported major floods in the country which affected a total of 3,268,523 people and incurred over USD 1 billion in damages (**Table 5**). The most affected areas of the country are the provinces of Kandal, Kampong Cham, Krae, Prey Veng, Stung Treng, SvayRieng and Takeo.

Table 6: Hazards in Cambodia, 2004 to 2013

Hazard		Freq.	No. Killed	No. Affected	Total Damage (USD '000)
Drought	Drought	1	-	600,000	-
Epidemic	Viral Infectious Diseases	3	189	21,368	-
Flood	General flood	8	492	3,268,523	1,092,000
Storm	Tropical cyclone	2	19	178,091	-

Source: EM-DAT: The OFDA/CRED International Disaster Database, data retrieved 18 April 2014

Aside from floods, other hazards that are prevalent in the country are storms, epidemics and droughts. Among these, flooding affects the school communities the most. In some places, students and teachers have to travel to their schools using boats. This mode of transportation could be expensive and troublesome, not to mention risky, for teachers and students alike. Significantly, the number of absences during flood season is very high.

Based on the World Food Program and National Committee for Disaster Management (NCDM) survey, 21 percent of the schools in Cambodia are situated in flood-prone areas. In 2011, Cambodia experienced the worst flooding in a decade. According to IRIN Humanitarian News and Analysis, about 7,400 schools were damaged, 323 were closed, and 77 were beyond repair. Among the five schools included in this resource toolkit as case studies, four schools indicated that flooding is a major problem in their communities.

Aside from natural disasters, Cambodia is also affected by man-made hazards in the form of land mines. These land mines were scattered all over the country, mostly in the rural areas, during the Civil War in the 1970s. Land mine detection is the main problem because there is no way of knowing where the mines were placed. The number of victims of land mine explosion in Cambodia is very high. According to the Cambodia Mine/ERW Victim Information System, there have been 64,247 recorded mine-related casualties from 1979 to 2013. Through various international efforts to detonate the mines without harming, there has been significant decline in casualties over the years.

Mainstreaming Disaster Risk Management

The Cambodian government has achieved significant gains over the years to lessen the impact of disasters on the country's population and economy. In 1995, the government established the NCDM, which coordinates and facilitates disaster risk management activities in the country. NCDM formulated the National Emergency Management Policy (NEMP), which is the disaster management framework of the country. Legislators also created the National Disaster Management Bill which, as of this writing, is awaiting enactment.

In 2007, the NCDM launched the National Comprehensive Avian and Human Influenza Preparedness Plan which integrated DRR into the national Social and Economic Development Plan and the Development Disaster Management Information System. Such policy action has facilitated multi-sectoral cooperation at all levels, strengthened the disaster management system, and developed the human resource in institutions involved in disaster preparedness and response.

In recent years, NCDM and the Ministry of Planning created a task force that focuses on the Strategic National Action Plan (SNAP) for Disaster Reduction for 2008 to 2015. SNAP addresses concerns on the implementation of the Hyogo Framework for Action (HFA) in Cambodia.

The country has established early warning systems for early forecast information from national to community levels. The Ministry of Water Resources and Meteorology maintains, reviews and disseminates flood and weather records. The same Ministry broadcasts news information through national and private TV stations and radio stations of partner agencies.

Mainstreaming DRR in Education

The mainstreaming of DRR in education was piloted in three countries, one of which was Cambodia. The project was called Mainstreaming Disaster Risk Reduction in Education (MDRD EDU). This project was in partnership with Asian Disaster Preparedness Center (ADPC), United Nations Development Programme (UNDP), and the European Commission on Humanitarian Aid (ECHO).

In 2007, the MDRD moved forward to develop DRR modules for the school curriculum. Subjects included in the curriculum considered the competencies of students. A country-specific glossary of DRR key concepts was produced for integration into the curriculum based on the needs and situation of school communities. The DRR-sensitive curriculum was initially created for primary school students, specifically Grade 8, because there



are more opportunities to integrate on subject level for this grade, like ‘the Earth’ and ‘Geography.’ Subjects cover topics on floods, volcanic eruption, earthquake, tropical cyclone, drought and deforestation.

A teacher’s manual was also developed to guide teachers on how to conduct discussions on DRR themes. The project was closely implemented with the NCDM. It was piloted-tested in ten selected schools in the country. About 447 students and 159 Ministry of Education, Youth and Sports (MOEYS) officials from the provincial and district, teachers, school officials were trained on how to use the DRR learning modules. Before the implementation of this project, there was no existing education material for schools related to DRR.

There were positive results from the pilot testing of the project. The level of interest of teachers and students was very high. Instructional materials, such as textbooks on geography, exercise book for students, teachers’ guides, as well as teachers’ aids, were made available. In 2007, the MOEYS released a national policy to organize emergency response teams in all schools and learning institutions and to assist in a public education campaign on emergency and disaster management in schools.

In 2008, MOEYS issued Order 555 which instructed schools to adopt concepts on Mainstreaming of Disaster Risk Reduction at lower secondary level schools in all provinces and districts in the country. As a result, the existing curricula for Grades 4 to 8 were enriched with DRR modules, particularly in the subjects of practical science, social studies, geography, and earth science.

Mainstreaming DRR in Health

Cambodian National Comprehensive Avian and Human Influenza Plan

The country has a history of disease outbreaks and epidemics. Many were affected and have died because of highly infectious diseases, such as SARS, H1N1 and H5N1. In 2005, the government of Cambodia created the Cambodian National Comprehensive Avian and Human Influenza Plan. This was a product of several consultative workshops with Food and Agriculture Organization (FAO), World Health Organization (WHO), UNICEF, UNDP, UNOCHA, and the Government of Cambodia. The comprehensive plan provides the basic framework for Avian and Human Influenza Management and includes four recognized planning sectors, namely, animal health, human health, communication, and inter-ministerial cooperation. It addresses the WHO pandemic alerts from phase 1 to 4.¹⁰

¹⁰ The pandemic influenza phases reflect WHO’s risk assessment of the global situation regarding each influenza virus with pandemic potential that is infecting humans. Phases 1–3 correlate with preparedness, including capacity development and response planning activities, while Phases 4–6 clearly signal the need for response and mitigation efforts.

National Multi-Sectoral Pandemic Preparedness and Response Work Plan

The NCDM, in cooperation with the AADMER, WHO, and United Nations Country Teams, embarked on the development of a multi-sector, operational pandemic response plan. The NCDM was the lead in this project which aimed to gain experience from a process of developing multi-sector pandemic preparedness plans in one province, before adopting the approach in other provinces and at national level. NCDM was assigned to guide stakeholders in the process, which included a series of workshops and training activities involving officials of various departments of the provincial government.

Challenges

1. The National Disaster Management Bill is still under legislative review. The enactment of the bill into law could provide the crucial boost to Cambodia's institutional framework for disaster preparedness, mitigation and response. One of the salient recommendations of the bill is the formation of councils for disaster management, to replace the existing committees. These local councils would be responsible and authorized to manage DRR activities on the ground. The effective and efficient implementation of the country's DRR program rests on the passage of this bill into a law.
2. NCDM receives annual funding from the office of Council of Ministers to cover basic administrative costs, but provision for disaster mitigation, preparedness or response activities is not included. The Disaster Management Councils at the provincial level and below do not receive any funding at all from the budget of the Council of Ministers. Without regular fund allocations in the national budget, it is difficult to train dedicated staff in the DMC who will coordinate activities with government agencies, local and international stakeholders.
3. Schools have no representation in the community-based DRRM councils. There is a need to include them since most schools in Cambodia are affected by floods and are also designated as evacuation centers in times of disasters. Guidelines for temporary shelters or emergency classrooms and construction of safe school buildings need to be integrated in the Education Strategic Plan (ESP) and the Education Development Plan (EDP).
4. There are no specific guidelines or procedures for school preparedness and response for outbreaks and pandemics included in the multi-hazards pandemic preparedness plans of the government. The threat of transmission of emerging diseases such as the H5N1 and H1N1 viruses underscores the need to strengthen mechanisms for protecting children.



Summary of Strengths and Areas for Improvement

Strengths

- ✓ The MOEYS released a national policy to organize emergency response teams in all schools and learning institutions and to assist in a public education campaign on emergency and disaster management in schools.
- ✓ The National Committee on Disaster Management (NCDM) formulated the National Emergency Management Policy (NEMP), which is the disaster management framework of the country and the National Disaster Management Bill is awaiting enactment.
- ✓ In 2007, the NCDM also launched the National Comprehensive AHI Preparedness Plan which integrated DRR into the national Social and Economic Development Plan and the Development Disaster Management Information System.
- ✓ MOEYS issued Order 555, which instructed schools to adopt concepts on Mainstreaming of Disaster Risk Reduction at lower secondary level schools in all provinces and districts in the country.
- ✓ The existing curricula for Grades 4 to 8 are enriched with DRR modules, particularly in the subjects of Practical Science, Social Studies, geography, and Earth Science

Areas for improvement

- ✓ While community-based DRRM councils have been established, schools have no representation in these councils.
- ✓ There are no specific guidelines or procedures for school preparedness and response for outbreaks and pandemics included in the multi-hazards pandemic preparedness plans of the government. The threat of transmission of emerging diseases such as the H5N1 and H1N1 viruses underscores the need to strengthen mechanisms for protecting children.

4.3 Indonesia

Geography and Climate

Indonesia, like the Philippines, is recognized as one of two archipelagic states in Southeast Asia. The country has 17,508 islands and about 81,000 kilometers of coastline. It lies between the Indian Ocean and the Pacific Ocean. Being situated in the earthquake belt and the Pacific “ring of fire,” Indonesia is highly vulnerable to seismic activities. Indonesia has a tropical climate with two seasons: dry season from November to April and dry season from May to October.



Figure 25: Map of Indonesia

Source: <http://www.worldatlas.com>

Disaster Risk Profile

Indonesia ranks 12th among countries with relatively high mortality risks from multiple hazards. An estimated 40 percent (90 million) of the 238 million population live in areas of risk (World Bank 2005).

The country is vulnerable to natural hazards such as forest wildfire, earthquake and tsunami, flood, volcanic eruption, droughts, landslide, typhoon and storm, and epidemic (see **Table 5**). The country has experienced 113 disaster events in a span of nearly a decade that have affected 9.3 million people and resulted in an estimated loss of USD 15 million.



The country is one the most earthquake-prone in the world. It has 500 volcanoes and 129 are reactive. In terms of number of people affected and economic loss, earthquakes rank first in impact. Earthquakes affected about 6.9 million people with total damage at the cost of USD 6.2 million (see **Table 7**). The Indian Ocean tsunami of 2004 claimed 165,708 lives, affected 532,898 and incurred an estimated total loss of USD 4.4 billion.

Table 7: Hazards in Indonesia, 2003-2013

Hazard		Freq.	No. Affected	Total Damage (USD '000)
Earthquakes		29	6,920,782	6,254,850
Tsunami		4	580,400	4,506,600
Epidemic	Viral infections	5	93,505	no data
Flood	General flood	36	1,418,326	4,369,833
Landslide		21	20,573	46,443
Storm		3	12,950	1,000
Volcano	Volcanic eruption	13	273,018	-
Wildfire	Forest fire	2	200	14,000

Source: EM-DAT: The OFDA/CRED International Disaster Database, data retrieved 10 June 2013

Although the country is geologically prone to earthquakes, the most frequent hazard recorded by CRED in the past ten years are floods, followed by earthquakes. Floods have seriously affected areas with large urban population, such as Jakarta, Medan, and Bandung.

In terms of land area, Indonesia is one of the largest countries in the world. The presence of large tracts of forestland results in forest fires which cause not only environmental damage but also toxic haze that affect people's health and activities within Indonesia and its neighboring countries. The forest fire in Sumatra that occurred in September 1997 killed 240 people, affected 32,070 and caused an estimated loss of USD 8 billion.

Mainstreaming Disaster Risk Management

After the devastating tsunami in 2004, the Disaster Management Law No.24/2007 was enacted. Indonesia was one of the first countries in Asia to formulate a National Action Plan (NAP-DRR) for Disaster Risk Reduction.

The Disaster Management Law outlines the principles, responsibilities, organization and implementation of the national DRM system, including the role of international organizations. In 2008, the National Agency for Disaster Management (*Badan Nasional Penanggulangan Bencana* or BNPB) was established. BNPB is the agency responsible for disaster activities, whereas previously there was only an ad-hoc inter-ministerial council. BNPB has a strong mandate to coordinate line ministries on the entire cycle of disaster management from pre, during, and post disaster stages.

The National Disaster Management Plan (NDMP) for 2010-2012 and National Action Plan for Disaster Risk Reduction (NAP-DRR) for 2010-2014 were enacted to systematically mainstream DRR in the national development process. Disaster management has also become one of the key priorities in the National Middle-term Development Plan for 2010-2014.

According to the HFA report (2007-2009), Indonesia made it obligatory in all provinces to create their independent Local Disaster Management Agencies (LDMAs). According to BNPB, an estimated 144 of the 275 districts and cities, that are highly prone to disasters, have created their own Local Disaster Management Agencies.

Reconstruction policies are also being integrated in national and local policy frameworks. The principle of 'building back better' was applied in post-earthquake reconstruction areas.

Information sharing is very crucial in creating plans and activities for DRR. The BNPB created the Data and Information on Indonesian Disaster (DiBi), which provides online information at the national level covering the period between 1815 and 2013. This information was collected from local governments (then validated by national government) and academic institutions.

Mainstreaming DRR in Education

In 2011, the Ministry of National Education issued a circular letter that encouraged the mainstreaming of disaster risk reduction into schools through their curriculum. DRR integration into the curriculum was done in three ways:

- In the formal Indonesian primary and secondary schools, DRR is taught by integrating it in existing subjects such as social studies, science and physical education and health (grades 1-3). Topics are on disaster, safety, sanitation, traffic safety, and safety from physical surroundings
- Local Content Curriculum (LCC) or school-based school curriculum for primary and secondary schools provides a significant level of independence and flexibility for schools. Under LCC, schools are able to adopt their own learning materials and tailor-fit their curriculum based on their school's disaster situation, needs or risks. LCC suits schools that are located in disaster-prone areas.
- Integration of DRR in extra-curricular activities through self-development programs that are offered during the school year. Modules were developed as instructional materials for teachers in elementary and secondary levels. These modules focused on activities in the phases: before, during and after hazards.



Training manuals, DRR modules, and reference materials were translated to local languages for better application. Teachers were encouraged to develop their own textbooks. Hazard-specific textbooks are available at the primary, junior, secondary and tertiary levels, and cover disaster knowledge on preparedness and recovery.

Aside from mainstreaming DRR in the curriculum, other programs were also created, such as School Preparedness Programs and Village Preparedness Programs, both of which are being implemented throughout Indonesia.

International DRR Collaboration and National Advocacy

On 29 July 2010, Indonesia committed to improve the safety of 3,156 schools and 105 hospitals as part of the global One Million Safe Schools and Hospitals Campaign. The Vice Minister for National Education pledged to ensure that thousands of schools would comply with school-safety standards, adding that he would urge the education departments at the district and province levels to participate in the campaign. More than 200 participants from government institutions, local and international NGOs and representatives of schools and hospitals made pledges online at the campaign website and committed to various activities to increase the resilience of schools and hospitals throughout Indonesia (UNISDR, 2010).

Here are examples of noteworthy programs and projects undertaken by the Ministry of Education in collaboration with INGOs on mainstreaming DRR in education:

- The Disaster Awareness in Primary Schools (DAPS) project was implemented by the Science Education Quality Improvement Project, Indonesian government, and the German government from October 2005 to December 2008. DAPS aimed at developing understanding of natural hazards as well as disaster prevention and mitigation. The project paid great attention to the issue of not overburdening teachers with teaching load. Attendance at training sessions was limited to about 20 teachers. This allowed teachers to actively participate in sessions and discussions. DRR topics were integrated in existing subjects. Concepts and themes used in the modules were explained in simple terms so teachers can easily explain topics to students.
- School-Based Curriculum Training was implemented by Save the Children. The teachers requested for additional training from the organization to facilitate active learning approaches closely linked to the national curriculum. The high point of this program was after the teachers were given the training, some of them were selected to draft samples of Lesson Plans on Integrating Disaster Preparedness into Elementary School Subjects. The drafts were pilot tested and finalized. In 2009, sections of the sample lesson plans were adopted and published by the Curriculum Center of Research and Development of the Ministry of Education.

- The education authorities of Indonesia, with the German Technical Cooperation Agency (GTZ), have developed education materials about the causes and results of an earthquake, tsunami and volcanic eruption. These are being used by more than 33,000 school children. The impact of this initiative was demonstrated in May 2006 when an earthquake hit the Yogyakarta region, killing 5,000 people. The number would have been higher had children not learned at school what to do in the event of an earthquake and had they not passed on this knowledge to their parents (GTZ, 2006).

Mainstreaming DRR in Health

Indonesia has one of the highest number of H5N1 deaths in the region from 2003 to 2009 (WHO, 2009). Because of the urgency of the situation, the government acted quickly to address the issues concerning pandemic preparedness. The Indonesian President in 2006 issued a decree establishing the national committee on Avian Influenza Control and Pandemic Influenza Preparedness or KOMNAS FBPI. KOMNAS is a ministerial-level committee headed by the Coordinating Minister for People's Welfare. It has 14 members, including the Ministers of Agriculture and Health, the Chief Commander of the Indonesian National Army, the Head of the Indonesian Police, and the Chairman of the Indonesian Red Cross. The committee focuses on scientific research and development for human and animal health, vaccine development, advocacy and communication.

In 2007, KOMNAS adopted the AADMER initiative on multi-sectorial pandemic planning. It developed the 'Influenza Pandemic Preparedness Plan Guidelines.' Consequently, the National Disaster Management Agency (*Badan Nasional Penanggulangan Bencana* or BNPB) was established to carry out and coordinate all contingency, preparedness, mitigation, prevention and Disaster Risk Reduction (DRR) activities and strategies mandated by the DM Law. BNPB and KOMNAS work in partnership to address disasters related to natural or biological hazards. In 2011, the Influenza Pandemic Preparedness Plan was integrated into the national policy framework by a presidential decree.

Challenges

1. Based on the HFA report, only 30 districts/cities or less than 10 percent of the total disaster prone districts have implemented their preparedness plans. This implies that a significant number of communities in high-risk areas are still ill prepared for disasters.
2. There is no active monitoring and evaluation system established in schools that have adopted the DRR curriculum. This is important to ensure the relevance of messages and to check for level of competency.



3. There is no regular annual budget allocation for emergency mitigation, relief and recovery before, during and after a disaster.
4. There is a lack of expertise and resources to equip the required personnel for front-line work for pandemic preparedness (particularly for Avian Influenza). Capacity building for local government and communities in DRR requires major development investment.

Summary of Strengths and Area for Improvement

Strengths

- ✓ The government of Indonesia committed to improve the safety of 3,156 schools and 105 hospitals as part of the global One Million Safe Schools and Hospitals Campaign. The Vice Minister for National Education pledged to ensure that thousands of schools would comply with school-safety standards, adding that he would urge the education departments at the district and province levels to participate in the campaign.
- ✓ Case stories from selected schools in Indonesia highlight the examples of DRR programmes implemented in schools. In some schools, teachers, students and the school staff attended a DRR training after which participants were mobilized to comprise the Disaster Emergency Preparedness Team.
- ✓ Case stories from selected schools illustrate how the school authorities took the lead in the development of disaster preparedness.
- ✓ In 2011, the Ministry of National Education issued a circular letter that encouraged the mainstreaming of disaster risk reduction into schools through their curriculum.
- ✓ In the formal Indonesian primary and secondary schools, DRR is taught by integrating it in existing subjects such as social studies, science and physical education and health (grades 1-3). Topics are on disaster, safety, sanitation, traffic safety, and safety from physical surroundings.
- ✓ Local Content Curriculum (LCC) or school-based school curriculum for primary and secondary schools provides a significant level of independence and flexibility for schools, allowing them to develop their own learning materials and tailor-fit their curriculum based on their school's disaster situation, needs or risks.
- ✓ Hazard-specific textbooks are available at the primary, junior, secondary and tertiary levels, and cover disaster knowledge on preparedness and recovery.

- ✓ Integration of DRR in extra-curricular activities is done through self-development programs.
- ✓ Other programs outside the classroom setting, such as School Preparedness Programs and Village Preparedness Programs, are being implemented throughout Indonesia.

Area for Improvement

- ✓ There is a need to establish and implement a mechanism to monitor and evaluate the use of the DRR curriculum. The case stories highlight several innovations in the methodology to convey DRR messages both in and outside the classroom setting and evaluation of their effectiveness and appropriateness will provide useful information for the improvement of the curriculum.



4.4 Lao PDR

Geography and Climate

The People's Democratic Republic of Lao is located in the Indochina peninsula, with shared borders with Myanmar and China on the northwest, Vietnam on the east, Cambodia on the south and Thailand on the west. The country has no coastal area but has several rivers of which Mekong is the largest, running through 1,898 kilometers from north to south of the country.

The northern part of the country is mountainous, with areas at average of 1,500 meters above sea level. The highest peak is the Phou Bia (2,800 meters) in Xiengkhouang province. The flat land or plains which represent a quarter of the total land area of the country, are found along the Mekong River. The largest is the Vientiane Plain on the lower reaches of the Nam Ngum River. Also significant are the Savannakhet plain on the lower reaches of the Se Bang Fai and Se Bang Hieng rivers, and the Champassak plain which lies near the Thai and Cambodian borders.

Lao's climate is tropical divided into two distinct seasons: the rainy season which covers the month of May to the end of September, and the dry season which is from October to April.



Figure 26: Map of Lao PDR

Source: Source: <http://www.worldatlas.com>

Disaster Risk Profile

The country has a history of disasters caused by floods, droughts, storms, disease outbreaks, earthquakes, landslides, fires, agricultural pests, and effects of unexploded ordnance. These disasters cause serious damage to livelihood, particularly to agriculture, small-scale businesses and the community economy. According to CRED (Center for Research on the Epidemiology of Disasters), eight natural hazard events were recorded from 2004 to 2013, affecting almost 960,000 people and causing damages worth over USD 133 million.

Hydro-metrological hazards such as floods, typhoons and storms are the most frequently occurring hazards in Lao. These have tremendous impact on the people's health and well-being and the country's economy. Flooding occurs during May to September when monsoon rains accumulate in the upper Mekong river basin. In addition, flash floods in the northern mountainous region are also common. From 2004 to 2013, floods affected 787,000 people and caused USD 33 million in damages while typhoons and storms affected 128,000 people and incurred a total cost of USD 100 million in damages (see **Table 8**).

Typhoons are a major cause of flooding in Lao PDR. The peak typhoon months are September and October. It is estimated that typhoons cause an economic average annual loss of USD17.6 million, followed by floods (USD 8.3 million) and droughts (USD 4.7 million). Recent natural disaster—typhoon Ketsana—resulted in an estimated damage worth USD 58 Million and 0.4% loss of GDP.

Table 8: Hazards in Lao PDR, 2004-2013

Hazard		Freq.	No. Killed	No. Affected	Total Damage (USD '000)
Epidemic	Viral infectious diseases	2	79	36,000	-
Flood	Flash flood	1	34	430,000	-
	General flood	4	50	357,708	33,000
Storm	Tropical cyclone	1	16	128,887	100,000

Source: "EM-DAT: The OFDA/CRED International Disaster Database, data retrieved 7 November 2013

According to WHO, infectious diseases remain the top cause of morbidity and mortality in Lao PDR. Lack of proper sanitation and water supply, malnutrition, low level of awareness and poor hygiene, compounded by inadequate access to quality health care, promote the spread of communicable diseases.

Changing weather patterns have resulted in frequent occurrence of droughts. Majority of the Lao population live in rural areas and depend largely on agriculture which render



them most vulnerable to the effects of drought. The central and southern provinces are the most affected. Four events of drought have been recorded from 1984 to 2013, with 730,000 individuals affected and an estimated economic loss of USD 1 million.

Man-made hazards caused by civil unrest or internal conflict affect physical safety, livelihood and food security. According to the Lao National Unexploded Ordnance Program, Lao is the most heavily bombed country per capita, in history. This happened during the Indo-China war when about 2 million tons of bombs were dropped in the country from 1964 to 1973. Unexploded Ordnance (UXO) contaminates approximately 25 percent of the villages in the country. These deadly remains from the previous Indochina war continue to kill dozens of villagers annually and keep a significant amount of otherwise productive land out of cultivation, particularly in the eastern half of the country.

The National Regulatory Authority for UXO/Mine Action Sector in Lao PDR is mandated to manage UXO mitigation in the country. UXOs have a lethal history in Lao PDR as they continue to kill large numbers of people and livestock, impede infrastructure development and deny access to agricultural and pastoral lands. Living with the constant fear of UXOs has reduced productivity even in low risk areas where there is a lack of alternative sources of livelihood. Villagers in these poor areas are forced to continue farming contaminated land despite the high risk.

Mainstreaming Disaster Risk Management

The Government of Lao PDR, having adopted the Hyogo Framework for Action and being a signatory to the Delhi Declaration of 2007, recognizes disaster risk reduction as a key development priority that encompasses hazard mitigation and vulnerability reduction through an effective preparedness strategy aimed at reducing the effects of natural and man-made disaster, particularly in rural areas.

The National Disaster Management Committee (NDMC) was established in 1999 to work on disaster mitigation, prevention and reduction. Based on the HFA country report (2011 to 2013), the Prime Minister created a decree to rename NDMC to National Disaster Prevention and Control Committee (NDPCC), which is jointly chaired by the Prime Minister and the Minister of National Defense. The NDPCC is responsible for coordination and promotion of cooperation on disaster preparedness, mitigation emergency response and recovery issues.

A subsequent decree 097/MLSW and the National Strategic Plan for Disaster Risk Management for 2003 to 2020 (1139/MLSW of 18 April 2003) provide the current policy framework for disaster management with the following objectives:

- reduce disaster risk to the communities, and
- strengthen capacities of disaster management bodies at the national, local and community levels on disaster risk management.

The National Disaster Management Plan follows the Hyogo Framework for Action (HFA) as the overall guide in addressing the impact of disasters. A strong emphasis, however, is given towards strengthening sub-national capacities, particularly at the provincial and community levels, to fully support the government priority of poverty reduction as elaborated in national development plans and policies. The first national disaster management plan for 2012-2015 was drafted by the NDPCC, with financial and technical support from UNDP and the World Bank.

The new Prime Minister also issued a decree on Disaster Risk Reduction Management that defines specific roles and responsibilities of disaster prevention committees in charge of DRRM in all sectors of government.

The government has increased the budget allocation for DRRM activities to address the frequency and intensity of natural disasters that affect the country each year (HFA Report 2010). The Ministry of Labor and Social Welfare allocates annually about 50 million kips (USD 6,000) for disaster preparedness activities and about 1.2 billion kips (USD 153,000) for disaster emergency relief assistance. The government has also approved the guidelines for Disaster Prevention Fund while the decree on DRM is still being developed.

Monitoring and dissemination of hazard and vulnerability data are crucial in risk assessment. Being the cornerstone of DRRM policy development and planning, a comprehensive country level multi-hazard risk assessment was developed by the NDMO in 2010, with funding from ADPC and UNDP. The Department of Meteorology and Hydrology contributed data on hydrometeorology, earthquake and flood, and weather forecasting to this risk assessment.

Mainstreaming DRR in Education

Flooding has significant effects on the education sector of the country. Floods damage school buildings and disrupt classes with the suspension of school operations for certain number of days. Students and teachers are put at risk (ADPC 2010). For instance, an estimated 265 educational institutions were fully or partially damaged by typhoon Ketsana in 2009, resulting in a total cost of damage and loss of more than USD 2.3 million.

Lao PDR recognizes the importance of equipping the education sector with disaster preparedness and response. The National Disaster Management Office (NDMO) and



the National Research Institute for Educational Sciences (NRIES), in partnership with the Ministry of Education (MOE), developed a curriculum integrating DRR for primary level grades 3, 4 and 5. This was the initial step in the establishment of the disaster risk management program for school communities. The program was supported by ADPC and funded by the Danish International Development Agency (DANIDA). In 2003, textbooks were published based on the curriculum developed and pilot tested in flood-prone provinces of the country. This resulted in the mainstreaming of the curricula to the lower secondary level.

The mainstreaming process of DRR in the Education or (MDRD-EDU) was done in two phases with Phase I focused on advocacy-related activities aimed to raise awareness on the cost-effectiveness of the strategy and the importance of mitigation efforts such as ensuring quality building materials for school buildings that can withstand hazards. Workshops also enhanced the student and teacher modules initially developed from 2001 to 2003. Teaching materials were also produced to complement the modules.

Phase 2 (2007 to 2008) of the project focused on broadening the scope of commitment from the government sectors. Results of initiatives are the following:

- a. Guidelines for school building construction was approved by the MOE;
- b. Development of DRR curriculum materials which integrated the DRR topics in specific subjects such as Natural Science and Social Science. The curriculum was designed for Grade 7 students. The topics integrated in the student modules include major hazards (hazards and disasters, landslides, earthquakes, flood, drought, fire, road accidents, social unrest and pollution) that affect the school communities.
- c. Teacher's guide and teaching aids were also developed by the MOE. An example of the teaching guides are story booklets, which tackle road accidents, pollution, drought etc.
- d. Teachers were trained to step up the process of institutionalizing the use of DRR curriculum materials in the teachers' training system.
- e. Curriculum specialists from the Ministry of Education, NDMO, project working group members and school principals/school directors in project countries monitored the use of the DRR module in the pilot schools from December 2007 to January 2008. Lesson plans were revised based on the findings of the monitoring.
- f. School Safety Day was an initiative introduced by ADPC to evaluate the effectiveness of the modules. Activities such as hazard hunt, poster painting competition and a quiz were conducted from January to February 2008 with ADPC providing technical support.

In 2009, a workshop was held to review the existing curriculum by identifying the appropriate DRR topics for integration in the primary and secondary grade levels subjects. A Curriculum Framework plan was developed to guide the MOE on how to fully integrate DRR in the primary and secondary levels. As a result of the workshop, the Lao PDR is committed to integrate the MDRD-EDU to the secondary level. This turned out to be a more cost effective way to educate more students and teachers on DRR and further sustain the project.

Mainstreaming DRR in Health

High prevalence of communicable diseases such as tuberculosis, typhoid, cholera, malaria and influenza, and HIV has resulted in significant impact on the population of Lao PDR over the last century (Draft National Disaster Management Plan).

The country has experienced nine outbreaks of H5N1 in three waves since 2003, resulting in two human casualties in 2007 in Vientiane Province (Goodyear 2011). The first wave resulted in 45 outbreaks with approximately 155,000 poultry deaths resulting from both the disease and culling. The first outbreak alone was estimated to cost approximately USD 4 million. The H5N1 is a highly lethal and pathogenic strain of influenza virus that has crossed the species barrier and infects humans.

During the outbreak of Severe Acute Respiratory Syndrome (SARS) in 2003, the Ministry of Health (MOH) set up a National SARS Preparedness Task force. When the first wave of H5N1 outbreak happened, the MOH adopted the procedures used in its SARS program which included detection methods used in birds as well as in human cases. The task force also developed quarantine and isolation procedures for adoption in the provincial and district hospitals around the country. In 2006, the National Avian and Human Influenza Coordination Office (NAHICO) was established within the MOH structure which was tasked to coordinate and collaborate with agencies on pandemic preparedness and response measures.

The Pandemic Preparedness Plan for 2006 to 2010 was developed focusing mainly on activities on animal and human health research, multi-sector preparedness, and strengthening collaboration efforts with the National Disaster Management Office (NDMO) for humanitarian response in the event of an outbreak (Safer World 2011).

HIV/AIDS infection is a growing concern in the country despite a relatively low prevalence of 0.2% of general population. According to the National Strategy and Action Plan on HIV/AIDS/STI 2011-2015, the total number of people living with HIV is estimated to be 9,000 in 2010, but is expected to increase to 14,000 in 2015 (UNFPA 2012). This communicable disease is receiving increasing attention in the country, and the Lao Red



Cross, among other NGO organizations, is implementing programs to expand public education and awareness about the disease and methods by which its spread can be minimized (Goodyear 2011).

Challenges

1. In terms of policy formulation and approval of mainstreaming DRR in all sectors, the Lao government is very proactive. The challenge now lies in the effective advocacy for implementation of strategies and the capability building of specific agencies that are mandated to implement DRR policies (ADRC 2008). There is a need to strengthen capacity of specific agencies mandated to implement DRR policies.
2. With the increased government funding for DRRM-related activities, there is a need to monitor and account actual spending for approved activities such as the MDRD-EDU, school building construction, multi-hazard assessment and other DRM programs. The Department of Meteorology and the database collection system of the NDMO requires enhancement to keep up with the demands of immediate and accurate information on climate factors, weather events and other natural hazards. The staff of these organizations also require capacity building to effectively implement the system.
3. The public health surveillance and response system, along with the healthcare system itself needs further strengthening to be able to detect and respond to emerging diseases and possible outbreaks. The national disaster risk management plan also lacks a component on Pandemic Preparedness plan in school communities.
4. The full mainstreaming of DRR in the education sector is limited by a lack of human and financial resources. This is one constraint in the development of new DRRM materials that would be integrated to the national curriculum.
5. There is minimal inclusion of pandemic preparedness in students and teachers modules on DRR.
6. There is minimal data on the assessment of School Safety Day and teachers' evaluation of this activity.
7. There is also no comprehensive national action plan for a disaster-resilient school system.

Summary of Strengths and Areas for Improvement

Strengths

- ✓ The Ministry of Education has approved the guidelines for school building construction. The National Disaster Management Office (NDMO) and the National Research Institute for Educational Sciences (NRIES), in partnership with the Ministry of Education (MOE), developed a curriculum integrating DRR for primary level grades 3, 4 and 5. This was the initial step in the establishment of the disaster risk management program for school communities.
- ✓ DRR curriculum materials were developed which integrated the DRR topics in specific subjects such as Natural Science and Social Science. The curriculum was designed for Grade 7 students. The topics integrated in the student modules include major hazards (hazards and disasters, landslides, earthquakes, flood, drought, fire, road accidents, social unrest and pollution) that affect the school communities.

Area for Improvement

- ✓ There is no comprehensive national action plan for a disaster-resilient school system.



4.5 Malaysia



Figure 27: Map of Malaysia

Source: <http://www.worldatlas.com>

Geography and Climate

Malaysia is composed of 11 states and two federal territories (Kuala Lumpur and Putrajaya). The South China Sea divides the country into Peninsular Malaysia to the west and East Malaysia. Peninsular Malaysia is attached to mainland Southeast Asia and shares borders with Thailand and Singapore. East Malaysia shares the big island of Borneo with Indonesia and Brunei Darussalam. The states of Sabah and Sarawak are located in East Malaysia.

Its land area is approximately 330,000 sq. km with an estimated 70 percent of the land covered with tropical rainforest. A large portion of the country is characterized by tropical climate with the southwest monsoon experienced from April to October and the northeast monsoon from October to February.

Disaster Risk Profile

Malaysia is located just outside the Pacific “rim of fire,” an area known for its active seismic and volcanic events, making the country vulnerable to earthquake and tsunami.

According to the Asian Disaster Reduction Center, the major disasters that the country experienced in recent years are the following:

- In December 2007, floods caused by torrential rains in the northeastern, central and southern part of Malaysia affected 158,000 people and killed 33.
- In December 2004, the Indian Ocean tsunami which occurred off the Sumatra Island after a massive earthquake (M9.1) affected 5,063 people and killed 80.
- In December 1996, tropical cyclone Greg hit Keningau in Sabah killing 270 and destroying 5,000 houses. Total loss was estimated at USD 52,000.

Floods can be generally attributed to heavy monsoon rains, storms, typhoons, poorly planned urbanization, climate change, and environmental degradation.

About 29,000 km (9%) of the total land area of Malaysia is flood-prone. Floods are the most frequently occurring hazards in the past ten years, with storms coming in second. According to the Center for Research on the Epidemiology of Disaster (CRED), more than 373,564 people were affected by floods from 2004 to 2013. Total damages and loss was estimated at USD 1.0 million (**Table 9**).

Table 9: Hazards in Malaysia, 2004-2013

Hazard		Freq.	No. Killed	No. Affected	Total Damage (USD '000)
Earthquake (seismic activity)	Tsunami	1	80	5,063	500,000
Flood	Flash flood	4	19	136,600	22,000
	General flood	12	64	236,964	978,000
Mass movement wet	Landslide	1	16	6	-
Storm	Unspecified	2	1	410,000	
Wildfire	Forest fire	1	-	-	-

Source: EM DAT: The OFDA/CRED International database, data retrieved 6 November, 2013

Extreme weather events, such as heavy rainfall and strong winds, have become more frequent in recent years. These have resulted in severe floods and landslides. In 2007 and 2008, monsoons brought heavy rainfall and caused severe floods in the country. These were the most recorded in the southern Peninsular Malaysia. The socio-economic impacts of these extreme events have become a cause for concern.

Earthquakes and wildfires have caused significant damage to property and economic loss. The reported damage of the earthquake which occurred in 2004 was USD 500 million.



The country is also exposed to other hazards such as landslides, epidemics, as well as the haze of smoke caused by burning of forests in Sumatra. The most disturbing haze incident in Malaysia happened in 1997 and 2005. A state of calamity was declared on both occasions and routine activities came at a standstill with schools and offices closed for several weeks due to toxic air pollution and international and domestic flights cancelled due to poor visibility.

In 1997, extensive forest fires in one of the ASEAN countries caused widespread haze in the Southeast Asian region. This significantly affected the tourism industry, the health of the population and the biophysical environment. Loss to agriculture, transport, tourism and other economic activities was estimated at USD 9 billion (ASEAN 2010). About 5.2 million hectares of land in East Kalimantan, Indonesia was burned. In response to this environmental disaster, the SEA Environment Ministers initiated a Regional Haze Action Plan (Malaysian Meteorological Department). Again on June 13, 2013 Indonesia, Malaysia and Singapore experienced another cross-boundary haze pollution that proved alarming.

The wildfires are attributed to indiscriminate clearing of forestlands by farmers and plantation companies for pulpwood and palm oil. Thus, the governments of Malaysia, Singapore and Indonesia were compelled to agree on more lasting and permanent solutions to the haze problem.

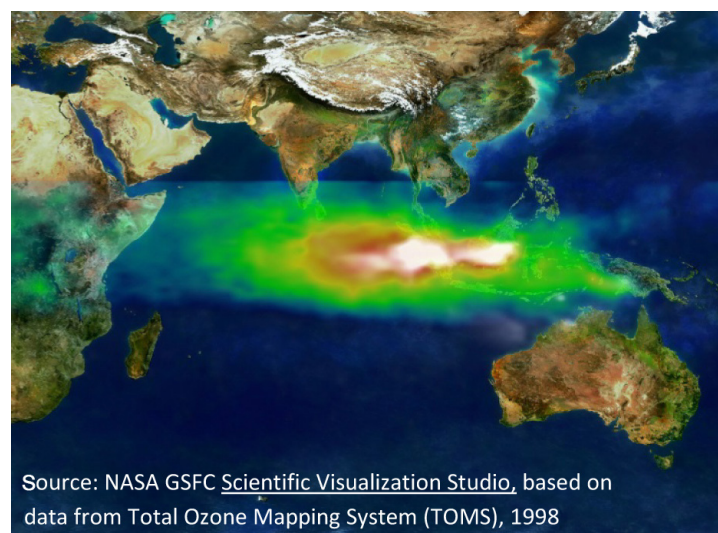


Figure 28: Visualization of extent of coverage of haze, 1998

Epidemics have significantly affected the population of the country in the last ten years with an estimated 32,047 affected by viral and bacterial bio-hazards (EM DAT n.d.).

Mainstreaming Disaster Risk Management

Malaysia has an advanced disaster risk management framework and policies in place, including a range of structural measures to decrease risk and strengthen mitigation and preparedness (ASEAN 2011).

The National Security Council (NSC), headed by the Prime Minister, is the main policy-making and coordinating body for disaster management in the country. The Council's primary role is to ensure the timely and effective operation of the integrated emergency management system through the Disaster Management Relief Committee. NSC Directive No. 20 or 'The Policy and Mechanism for National Disaster and Relief Management' is the main guide for disaster risk management in the country. It defines standard operating procedures and the roles and responsibilities of various agencies during specific disasters, which are also stipulated in other related laws such as the Land Conservation Act, Environmental Protection Act, Town and Country Planning Act, Irrigation and Drainage Act, and the Uniform Building by Law (AIPA Caucus Report 2011).

In 2008, the Cabinet Committee on Climate Change, also chaired by the Prime Minister of Malaysia, was formed. The creation of this committee signified the commitment of the country to deal with issues and concerns on climate change through national development planning (ADRC 2011). Consequently, the National Policy on Climate Change was approved by the Cabinet in 2009 which provides the framework for mobilizing government agencies, the private sector and communities, as well as other stakeholders and major groups, to address the challenges of climate change in a systematic manner.

Malaysia heavily invests in hydro and meteorological research projects and infrastructures (such as flood mitigation projects), early warning systems, and information and communication technology (ICT). The ICT is utilized to promote awareness and disseminate early warnings to the public via a Fixed-Line Disaster Alert System (FLAS). A separate system known as the Government Integrated Radio Network (GIRN) provides radio communication between responders during emergency or disaster. Disaster reporting is now more efficient with the centralized Malaysia Emergency Response System (MERS) emergency hotline '999' (ASEAN 2012).

The Malaysian Tsunami Early Warning System is part of the Indian Ocean Tsunami Early Warning and the Northwest Pacific Tsunami System. The dissemination of tsunami warning to alert the general public is done via short messaging system (SMS), facsimile, social media like websites and social networking, namely Facebook and Twitter. These channels are helpful in reaching people in real-time. School communities, which are vulnerable to flooding, can benefit from these programs and projects and help disseminate information to teachers, students, their parents, families and communities (AIPA Caucus Report 2011).



The government of Malaysia spent over USD 2 billion (RM 6 billion) to address the multiple hazards in the country (Malaysia's HFA country report, 2011-2013). The funds were spent on various programs and projects, such as flood mitigation, multi-hazards monitoring and early warning systems. Some notable projects are the Stormwater Management Road Tunnel (SMART) which diverts excess floodwater from the major waterways of Sungai Klang and Sungai Ampang to ease the pressure on the financial district of Kuala Lumpur and the surrounding area of Masjid Jamek from future floods. Linked to the stormwater tunnel is a three-kilometer motorway tunnel that acts as an alternative route when entering or leaving the city center. The project also includes a storage reservoir and twin box culvert to divert floodwater.

The government also created the National Disaster Relief Fund to provide financial assistance to disaster victims who suffered from loss of income, damage to house/property, damage to or loss of agricultural crops, livestock and aquaculture, and even burial services for the deceased during disasters.

At the regional level, Malaysia supports the ASEAN Agreement in Disaster Management and Emergency Response (AADMER). The country also supported the establishment of the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre) in Jakarta, Indonesia (AIPA Caucus Report 2011).

Malaysia actively participates in regional platforms such as the Asian Disaster Reduction Centre (ADRC), the Asian Disaster Preparedness Center (ADPC) as well as Typhoon Committee (TC). As the focal point for disaster management, the National Security Council also works closely with international organizations such as the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), and its subsidiary bodies, the United Nations Disaster Assessment and Coordination (UNDAC), International Search and Rescue Advisory Group (INSARAG) and the Asia Pacific Economic Cooperation (APEC) Task Force on Emergency Preparedness (AIPA Brief Note 2011).

National Disaster Awareness Day was launched in February 2011 with the theme, "Enhance National Resilience through Disaster Risk Reduction." The campaign was organized to raise public awareness on disaster risks as well as promote commitment among country leaders, decision makers and local authorities towards government efforts in disaster management and disaster risk reduction (DRR). It was organized by the National Security Council (MKN) in cooperation with the Ministry of Education, Ministry of Health, and Ministry of Housing and Local Government and with support from the United Nations International Strategy for Disaster Reduction (UNISDR) and ASEAN Secretariat. Activities carried out during the event include:

- Launching of national level campaign on ‘One Million Safe Schools and Hospitals: Making Cities Resilient – My City is Getting Ready’;
- ASEAN Knowledge Sharing Workshop on Mainstreaming DRR in Education;
- National Seminar on Disaster Management and Cities, Hospitals and Schools Safe from Disasters; and
- Malaysia Exhibition on DRR.

There were more than 500 participants, mainly from government agencies, state and local authorities, and civic organizations. As a result, the “Melaka Declaration on Disaster Risk Reduction in Malaysia 2011,” which called upon the country’s leaders and citizens to advocate, lead, and champion actions on disaster management, mainstreaming of DRR in education and keeping schools and hospitals safe from disasters was adopted by the participants.

Mainstreaming DRR in Education

There are initiatives by the government to integrate DRR in the Education Sector. DRR and emergency-related drills are conducted as extra-curricular activities that involve the participation of the Boy Scouts, police, fire brigade and school officials.

Although DRR is not yet integrated into the primary and secondary curriculum, some DRR concepts are already included in the core curriculum of universities in the country, like Fire Prevention and Occupational Safety. In Universiti Kebangsaan, the Medicine Faculty offers a course on Emergency Medicine to students under the university’s Department of Emergency Medicine.

Other education initiatives related to DRR are as follows:

Safe School Program focuses on safety awareness and practices, in all schools in the country. The Safe School Standards regulate the management of schools using five safety aspects: 1) management of student safety when conducting activities; 2) management of safe school infrastructure; 3) safe management in handling social ills; 4) safe management in handling crises and disasters; and 5) safe management in facing threats. About 642 primary and secondary schools have carried out their own self-assessment in 2010, results of which form the basis of the MOE’s capacity building program on school safety (HFA Country Report 2009-2012).

The Ministry of Education established a committee to examine and formulate a strategy to reduce school violence and contribute to a safe school culture and environment. It developed a blueprint for a Safe School Program in Malaysia, known as the Safe School Concept and Manual: Implementation Guide to Create a Safe School, Community and Family for Children (Ministry of Education, 2002).



The School Emergency Preparedness and Response Program was launched in Kedah state of Malaysia which was one of the hardest hit during the 2004 Indian Ocean tsunami. Funded by UNICEF in partnership with the Ministry of Education, the pilot program aimed to implement a national policy that will capacitate teachers and students with the knowledge and skills on emergency preparedness. UNICEF and the MOE worked together to publish training and resource manuals on emergency preparedness for teachers. It complemented MOE's earlier initiative to put in place an emergency preparedness plan for schools nationwide.

In 2008, the Ministry of Education formally developed policies on School Emergency Preparedness and Response Programs. In 2010, The Emergency Preparedness Handbook was distributed to 5.4 million school children.

In the same year, the Smart Support Team (SST) was deployed. The SST is a formal support group consisting of volunteer educators who seek to meet the educational and psychological needs of children who were traumatized by disasters. The mandate to expand these programs to respond to disasters was given to the National Security Council, Department of Social Welfare, Malaysian Red Crescent and the Malaysian Medical Relief Society (MERCY Malaysia). About 1,700 volunteers, composed of qualified school counselors, were registered and deployed to 160 districts nationwide. The District Education office manages ten volunteers per district. In the same year, SST leaders from the districts were trained together with 400 volunteers on Basic Mission Training (BMT) by MERCY Malaysia. The training is meant to prepare them for humanitarian relief missions.

Mainstreaming DRR in Health

Pandemic preparedness and response planning have been mainly the responsibility of the Ministry of Health. The National Influenza Pandemic Planning Committee (NIPPC) is the technical and advisory committee for the Ministry of Health (MOH).

In the event of influenza pandemic being declared by WHO, the influenza pandemic committees at all levels are activated and will respond by putting into action the influenza pandemic action plans for their respective levels, taking directions from the National Inter-ministerial Committee Influenza Pandemic Committee and the NIPPC. These influenza pandemic committees are mainly responsible for the overall management of the influenza pandemic and the implementation of the influenza pandemic action plans (National Inter-ministerial Influenza Pandemic Committee, 2009).

Challenges

1. The 'Melaka Declaration in Malaysia 2011' can be leveraged to strengthen the Community Based Disaster Risk Management (CBDRM). Various CSOs are initiating CBDRM and similar projects in the villages. The main challenge is how to create a viable multi-stakeholder platform for those engaged in DRR activities such as the government, INGOs, local Civil Society Organizations (CSOs) and communities. Multi-stakeholder cooperation is needed to systematically improve the efficient use of DRR resources and reduce the impact of disasters in the country.
2. According to the HFA report, the Malaysian government acknowledges there is still a lot of work to be done in order to mainstream DRR in schools nationwide. The MOE stressed that there is a need to expand capacity-building efforts for teachers and school staff, especially on how to handle disaster situations, such as flooding and earthquakes. Equally important, there is a need to monitor and document the Disaster Risk Reduction Education being implemented in schools throughout the country.
3. Epidemics belong to the top hazards that affect the population. Since schools are very much vulnerable to outbreaks and epidemics, the participation of school communities in the national pandemic preparedness plan of the country is crucial. Mobilizing them toward this end is a major challenge.

Summary of Strengths and Area for Improvement

Strengths

- ✓ Safe School Program focuses on safety awareness and practices in all schools in the country. The Safe School Standards regulate the management of schools using five safety aspects: 1) management of student safety when conducting activities; 2) management of safe school infrastructure; 3) safe management in handling social ills; 4) safe management in handling crises and disasters; and 5) safe management in facing threats.
- ✓ The School Emergency Preparedness and Response Program was launched in Kedah state of Malaysia which was one of the hardest hit during the 2004 Indian Ocean tsunami. Funded by UNICEF in partnership with the Ministry of Education, the pilot program aimed to implement a national policy that will capacitate teachers and students with the knowledge and skills on emergency preparedness. DRR and emergency-related drills are conducted as extra-curricular activities that involve the participation of the Boy Scouts, police, fire brigade and school officials.



Area for Improvement

- ✓ Although DRR is not yet integrated into the primary and secondary curriculum, some DRR concepts are already included in the core curriculum of universities in the country, like Fire Prevention and Occupational Safety. In Universiti Kebangsaan, the Medicine Faculty offers a course on Emergency Medicine to students under the university's Department of Emergency Medicine.

4.6 Myanmar

Geography and Climate

The country is bordered by China on the northeast, Laos on the east, Thailand on the southeast, Bangladesh on the west, India on the northwest and the Andaman Sea on the south and Bay of Bengal on the southwest. Myanmar has a tropical monsoon climate, with three seasons: rainy season (May to October), cool season (November to February), and summer season (March to April).

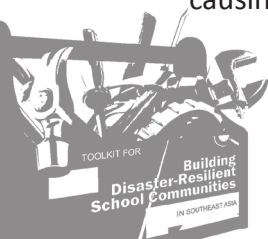


Figure 29: Map of Myanmar

Source: <http://www.worldatlas.com>

Disaster Risk Profile

The country is exposed to multiple natural hazards including cyclones or typhoons, storm surge, earthquake, tsunami, floods, forest fire, fire, landslide and drought. In the last 40 years alone, Myanmar suffered from 53 disaster events (seismic activity, epidemic, flood, landslides and storms) killing 146,105 people, affecting more than 6,748,334 and causing over USD 141 billion in damages (EM-DAT 2013).



Myanmar is vulnerable to cyclones (typhoons) coming from the Bay of Bengal from April to May and from October to November. The coastal regions are exposed to cyclones, storm surges and tsunamis. Rainfall-induced flooding is a recurring phenomenon across the territory. The whole country is at risk for earthquakes, droughts, and fires, while the country's hilly regions are also exposed to landslide risks.

Table 10: Hazards in Myanmar, 2004-2013

Hazard		Freq.	No. Killed	No. Affected	Total Damage (USD '000)
Earthquake (seismic activity)	Earthquake (ground shaking)	2	112	22,763	4,770
	Tsunami	1	71	15,700	500,000
Epidemic	Viral infectious diseases	1	30	-	-
Flood	Flash flood	1	151	35,734	1,700
	General flood	7	39	334,964	-
Mass movement wet	Landslide	4	125	146,367	-
Storm	Tropical cyclone	4	138,681	2,765,155	4,057,688

Source: EMDAT:The OFDA/CRED International database, data retrieved 10 June 2013

Floods are the most frequently occurring hazards in the past ten years, followed by storm or tropical cyclone and earthquake. Storms/tropical cyclones have caused the most number of deaths and have affected the most number of people in the decade, and have resulted in the costliest damage (**Table 10**). Myanmar receives practically all its rainfall between mid-May and October, when flooding is common.

Cyclone Nargis which hit the country in 2008 is considered as the worst natural disaster having affected around 2 million people and causing 84,500 deaths (IFRC 2008).

Earthquake-affected areas in Myanmar can be divided in three seismically active regions, namely, the Northwestern Region, the Central Lowland, and the Shan Plateau-Yunnan Region. The strongest recorded earthquake in Myanmar occurred on the northern segment of this fault on 23 May 1912 and registered at 8.0 on the Richter scale (ADPC 2010). In the past ten years, earthquakes have affected 22,763 people and killed 112 people and cost about USD 4.7 million in damages (**Table 10**).

The country is susceptible to tsunami because of the 2,400 kilometer-long coastline. The coastline is divided into three regions: Rakhine coastal area in northwest, Ayeyarwady Delta in middle, and Taninthayi coastal area in the south. There was one tsunami

recorded based on CRED data and it has affected 15, 700 people and killed 71 with reported damages costing USD 500 million (**Table 10**).

Landslides of various scales occur in the mountainous regions especially in the Western, Southern and Eastern Highland of Myanmar. The Western ranges have experienced all types of landslide and earth movement such as rock falls, rockslides, soil avalanche and mud flow.

Wildfires or forest fires in Myanmar are normally surface fires, occurring most frequently during the dry season, around December until May. It occurs in almost all states and divisions; however, it is more common in the upland regions of Bago, Chin, Kayah, Kachin, Mandalay, Rakhine and Shan. It causes haze problem, which affects the health and activities of the communities in the area.

Although not included in the historical data, fire hazard is the most frequently occurring hazard in Myanmar according to the HFA Country Report. The areas of Yangon, Mandalay, Ayeyarwady, Sagaing and Bago account for 63 percent of the total fire cases, with January to May as the peak season for fires. An average 900 fire cases are recorded annually, which results in the loss of lives and property (Reliefweb 2012).

Mainstreaming Disaster Risk Management

The country is committed to disaster risk reduction and it has systems in place at the national, local and community levels for disaster management. The National Disaster Preparedness Central Committee, constituted in 2005, is a 37-member committee chaired by the Prime Minister.

In 2008, following a directive from the Prime Minister's Office, a 33-member National Disaster Preparedness Standing Order Drafting Committee was formed. The Committee was chaired by the Minister for Transport, with the Deputy Minister for Rail Transport as Secretary while the Director General of the Relief and Resettlement Department and of the Transport Department as Joint Secretary 1 and 2, respectively. Other members were drawn from the Ministries and Departments concerned. The Drafting Committee finalized the Standing Order (SO) in 2009.

The Standing Order covers the duties and responsibilities to be carried out at the national level, state and division level during the different phases of disaster, namely: pre-disaster, during disaster, relief, rehabilitation, and reconstruction period. The Standing Order also describes the tasks and duties in preparation for and in response to the different types of disasters. The document also stipulates the formation of the National Disaster Management Committee, Inter-Ministerial Disaster Management Coordination Committee, and National Disaster Management Advisory Committee.



A disaster preparedness committee has been setup at division/state, district, township and village levels and is managed by the chairperson of the respective Peace and Development Council.

The Department of Health, Department of Public Works, Department of Agricultural Planning, Departments under the Ministry of Education, and other Ministries prepare their respective Natural Disaster Management Plans in compliance with the guidelines of the National Disaster Preparedness Central Committee (NDPCC) and the directive from their respective ministries. The Ministry of Education also issued guidelines to all departments and schools under it, to draft plans in order to minimize the impacts of disasters.

In order to enhance resilience, DRR should be integrated into the developmental interventions for long-term risk reduction. The government developed the Myanmar Action Plan on Disaster Risk Reduction (MAPDRR) for 2009 to 2011, which focuses on preparedness and long-term risk reduction. It has seven components including 'mainstreaming DRR into development and mitigation' which prioritizes housing, health, education and infrastructure sectors for the mainstreaming efforts.

After Cyclone Nargis, the Government of Myanmar, ASEAN, UN Agencies and NGOs undertook a number of initiatives on DRR which included the development of community-based DRR planning manual, capacity building of carpenters and bar benders on construction of multi-hazard resistant shelters, construction of multi-purpose cyclone shelter-cum-school and hospital, and development of resource packs on Do's and Don'ts of disasters for students and teachers.

Epidemics and disease outbreaks are serious issues in Myanmar. The Ministry of Health prepared the National Strategic Plan for Prevention and Control of Avian Influenza and Human Influenza Pandemic Preparedness and Response. The strategic plan includes consultations with the Ministry of Livestock and Fisheries to prevent and control Avian Influenza and Human Influenza Pandemic. This plan was revised in 2008 after the conduct of the national simulation exercise in the same year.

Pandemic preparedness measures carried out by the Government of Myanmar include the following:

- Stockpiling of antivirals and personal protective equipment (PPE)
- Laws and administration guidance are currently under review
- Simulation exercises
- Cross-border collaboration and networking in the region and at the global level

Typhoon Nargis was the worst natural disaster in the history of the country. One of the projects developed to assist the affected communities is the Community-based Disaster Risk Reduction (CBDRR). A joint project of UNDP, UN-HABITAT, Ministry of Social Welfare,

Relief and Resettlement, Ministry of Construction, Early Recovery Cluster partners, NGOs, UN Agencies and relevant local authorities, CBDRR aimed to enhance basic disaster preparedness of the cyclone-affected communities and integrate disaster risk reduction efforts in some of the key sectors of recovery. The project outputs are as follows:

- Community-based disaster preparedness
- Capacity development for integrating disaster risk reduction in the rebuilding of human settlements
- Awareness generation, knowledge networking and partnerships

Mainstreaming DRR in Education

In 2008, Cyclone Nargis brought about large-scale loss of life, destruction of property, livelihood and infrastructure in the country. Schools were among the hardest hit. The Post-Nargis Joint Assessment (PONJA) report put the estimate of damaged schools, including monastic schools, from 50 to 60 percent. The Village Tract Assessment (VTA) shows 63 percent of schools damaged in the 30 most severely affected townships. For private education, about 242 early childhood care centers were either partially or totally destroyed. The roofs of university buildings (an estimated 378) and higher education administrative offices were blown away. According to UNICEF, Cyclone Nargis disrupted the education of about 500,000 children and resulted in total damage and losses in the education sector calculated at USD 118 million.

The Ministry of Education of Myanmar has been mainstreaming DRR initiatives since mid-2000. The government has been giving full support to the creation of more programs and projects for the vulnerable sectors. After Typhoon Nargis, the education sector was identified as one of the priority inclusions in the Myanmar Action Plan on Disaster Risk Reduction (MAPDRR). The MOE, UNESCO and UN convened Myanmar's Disaster Preparedness and Response Education (DPRE) working group which is in charge of capacity buildings for teachers, integration of DRR in the curriculum, and development of teaching and learning materials on DRR. DPRE also implements activities for the schools' preparedness and emergency planning for safer school construction.

Another group that is concerned with mainstreaming DRR in Education is the Education Thematic Working Group (ETWG), which is led by the Ministry of Education with the support of UNESCO and Save the Children. The group advocates for and supports the collaborative creation of a comprehensive and sustainable national educational system for Myanmar. The ETWG is also known as the Education Cluster.

According to the HFA country report of Myanmar, DRR is mainstreamed at the following levels:



- Primary level. DRR topics are included in Environmental Education, one of the five main areas of Life Skills subject. 'Caution in Emergencies,' one of the chapters in Environmental Education, is also being taught to primary students. The chapter explains man-made and natural disasters.
- Upper secondary level. English subject includes lessons on earthquakes (Grade 10) and in Geography, Earth Surface Process (Grade 11).
- Lower secondary level (Grade 6 to 9). General Science subject was revised to include the lessons on storms from the Earth and Space section. Life Skills subject includes lessons on flood, emergencies, earthquake, tsunami landslides and fire.
- In Grades 5, 6 and 7, complementary reading materials on the eight disasters are available for self-directed lessons.
- Reading cards on earthquake, storms and tsunami and a storybook entitled 'Be prepared' were created for non-formal education. The materials instruct the learners on what to do before, during, and after a disaster.
- The Department of Education Planning and Training (DEPT), with the support of DPRE, developed DRR in education modules in accordance with the five priority areas of HFA and trained township education officers, principals, teachers of cyclone-affected areas and teachers in education colleges.
- School heads and teachers who belong to disaster-prone areas were trained on DRR risk assessment, formation of School Disaster Management Committee, school disaster preparedness plan, mock drills and psychosocial support.
- The Ministry of Science and Technology has initiated seminars and technical training on 'utilization of space-based technologies for disaster risk management' and 'Quality Control Assessment for Cyclone Shelter Construction.' These seminars are made available to higher level of education teaching staff and students.

Other projects and programs for DRR mainstreaming in the Education Sector are the following:

- In July 2013, the construction of the country's first training school for natural disaster management began; it will be completed by 2016. The school aims to reduce the damage caused by disasters through the preventive measures integrated in the curriculum. The training center will build the capacity of a workforce that is highly specialized in the field of disaster risk reduction management and supportive of government programs for DRR. It will also raise the level of awareness among the younger generation regarding their role in the disaster risk reduction efforts.

The curriculum will cultivate a culture of disaster preparedness among their students who can influence their communities. This will also capacitate government agencies' staff to increase their knowledge and skills on disaster

management. Located in the Hinthada Township in Ayeyarwady Region, the school will be able to accept up to 200 students, government officials, and NGOs. According to the Department of Relief and Resettlement, they will run disaster management courses in all states of the country. They aim to open a diploma course in the future. This project is a joint venture of the Department of Social Welfare, Relief and Resettlement, the UN, Japan International Cooperation Agency (JICA) and the Asian Disaster Preparedness Center (ADPC).

- In June of 2013, the government announced the development of a new disaster management training curriculum which will be offered to government employees. This course will ensure that government agencies who are directly working on DRR projects and programs will be equipped with the necessary knowledge, skills and attitudes to prepare for and respond to disasters.
- The Ministry of Social Welfare, Relief and Resettlement and Ministry of Education developed the 'Guidance on Mainstreaming Disaster Risk Reduction into Education Sector – Rural Settings, Myanmar.' The project was in partnership with the ASEAN, UN and ADPC. This 'Guidance,' which was developed through a series of consultations with a range of agencies, highlights the need for mainstreaming DRR in the education sector in Myanmar. It tackles the structural, instructional, and non-structural aspects of the education system, and recommends approaches for mainstreaming DRR in these aspects.

Focused on creating a safer school environment for children and communities in Myanmar, the 'Guidance' emphasizes the priority of using multi-hazard resilient school designs and the integration of DRR in the curriculum as the means to ensure safe schools.

- Myanmar Education Recovery Program (MERP) aims to build capacities of education personnel including education administrators on DRR through awareness raising and the development and use of training/learning modules and educational materials. Capacity building was done through two methods: 1) through training/learning material development and 2) a series of educational planning and management training courses. A package of seven modules was developed consisting of topics such as DRR concepts, education in emergencies, localizing DRR in education, identifying, assessing and monitoring risks in the education sector and building a culture of safety through education. A training of master trainers (ToMT) was conducted with officials from the MoE, Department of Educational Planning and Training (DEPT), Departments of Basic Education 1, 2 and 3, and teachers from the eight targeted townships. In this ToMT, the participants were guided through the training modules in a systematic manner.



These workshops aimed to increase the knowledge and confidence of educational personnel on DRR. They are now able to introduce DRR-related information in conjunction with other subjects such as life skills education, geography and science. This has also helped students learn about preparedness for various hazards. UNESCO, UN and the Ministry of Education support the project (UNDP 2011).

- UNDP worked with the ADPC in the development of a “School Safety Manual” to be used by the school principal, teachers, students, parents and teachers association (PTA) and other concerned authority for safe school. A consultative process involving UN agencies, NGOs and sample communities was applied to make it more relevant towards the needs of the communities and also to build on the coping mechanisms already present at the ground level. Seven chapters capture the key elements of the manual: composition of school disaster management committee, vulnerability and capacity assessment, development of school disaster management plan, constitution and capacity building of disaster management team, dissemination of school disaster management plan, planning and conducting mock drill, and evaluation and updating of the plan.
- The Mobile Knowledge Resource Center (MKRC) and Water Knowledge Resource Center (WKRC) were developed by the SEEDS Asia and the Myanmar Engineering Society to reach the remote communities in the country and build their capacities on DRR. MKRC applies the KIDA (knowledge-interest-desire-action) model that emphasizes knowledge building that generates interest and desire to promote action for DRR and these actions are significant outputs of disaster education. The goal of MKRC/WKRC was to make communities aware of disaster risks, and enhance individual, family and community level preparedness by working with school teachers and children. By improving the knowledge of students and teachers on DRR, the MKRC/WKRC hopes that information will spread to the parents, family members and the community. The mobile units, loaded with disaster educational materials with different topics on the different hazards, have colorful appearance that attracts community members.

The training is usually a two-day program. On the first day of the program Training of Trainers (ToT) is conducted for the teachers. They are trained on issues and impacts of hazards, safety tips, how to develop hazard/resource maps. On the second day, the students are invited to learn more about hazards and their impact through a simulation model. The trained teachers and MES staff teach the students DRR-related information.

SEEDS Asia and MES involved the Township Education Officer and other government officials in implementing the project in other village schools to secure the sustainability of the project.

- Child-Led DRR (CLDRR), according to Save the Children (SC), is a framework where children play leading roles in their communities to minimize the impact of disasters. SC provides training of trainers for its project officers and coordinators. These trained officers and coordinators will build the capacities of staff in the field. Field staff will then conduct a one-day workshop at a designated village. A group of 20 people is organized with equal number of male and female. A group, for example, would have 16 children of varying ages and the remaining four would be adults. The participants are selected from the Education and Child Protection programs of the SC in the same village. The group is then trained on DRR participatory tools, mobilization strategies and planning. During the training it is also emphasized that adults should always respect the role of children and to support their decisions made during the training. After the training is done the group becomes the CLDRR Task Group where a child is selected as the leader. Within the Task Group, sub-groups are formed for various functions such as fund raising, search and rescue, first aid and mitigation. Subsequently, the CLDRR Task Group reaches out to other children, (both going to school and not going to school) and adults separately to develop various participatory tools such as source and risk maps and seasonal map. This strategy helps to bring observations and risk analysis of various sections of the community. The CLDRR has made adults aware that, given the right opportunity, children can be very important contributors to the risk reduction in the community.

Challenges

1. There is a need to push for more public awareness on DRR in the country. Public awareness is very crucial in the success of the programs and projects in the country.
2. There is a need to expand community-level involvement and activities within the community-based disaster risk management (CBDRM) program beyond the lifespan of the training workshops.
3. There is a risk of retaining the knowledge and skills only among those who have been initially trained. The technical skills and know-how are also often limited to the project staff supported by international donors.
4. There is still a need to mainstream DRR in the school curriculum in the primary and secondary levels. The foundation for DRR should be first cultivated in these levels to ensure that they will take up courses in Disaster Risk Management in the future.



5. Although mainstreaming DRR in the curriculum is vital, there is a gap in the policy formulation focusing on the creation of disaster resilient school structures. Much of the destruction in the schools which resulted in a great loss of lives was due to poor infrastructure facilities.
6. DRR in pandemic preparedness does not currently include school communities. It is important not to overlook this sector because they are the most vulnerable.

Summary of Strengths and Area for Improvement

Strengths

- ✓ The Ministry of Social Welfare, Relief and Resettlement and Ministry of Education developed the 'Guidance on Mainstreaming Disaster Risk Reduction into Education Sector – Rural Settings, Myanmar,' which tackles the structural, instructional, and non-structural aspects of the education system, and recommends approaches for mainstreaming DRR in the aspects of ensuring safe learning facility.
- ✓ The guidance focuses on creating a safer school environment for children and communities in Myanmar. It emphasizes the priority of using multi-hazard resilient school designs and the integration of DRR in the curriculum as the means to ensure safe schools.
- ✓ Case stories from selected schools feature how each formed a School Disaster Management Committee (SDMC) as part of their response to a major disaster experienced by the school community. The SDMC is divided into several sub-committees which serve specific functions such as planning, risk assessment and resource mobilization.
- ✓ National Disaster Preparedness Standing Order covers the duties and responsibilities to be carried out at the national, state, and division levels during the different phases of disaster.
- ✓ The Government developed the Myanmar Action Plan on Disaster Risk Reduction [MAPDRR] for 2009 to 2011, which focuses on preparedness and long-term risk reduction. It has seven components including 'mainstreaming DRR into development and mitigation' which prioritizes housing, health, education and infrastructure sectors for the mainstreaming efforts.
- ✓ DRR topics are included in subjects in the primary level, upper and lower secondary levels. Reading cards on earthquake, storms and tsunami and a storybook entitled 'Be prepared' were created for non-formal education. The materials instruct the learners on what to do before, during, and after a disaster.

Area for Improvement

- ✓ There is a gap in the policy formulation focusing on the creation of disaster-resilient school structures.

4.7 Philippines

Geography and Climate

The Republic of the Philippines is an archipelagic nation located in Southeast Asia. The country measures 1,850 kilometers, starting from the point near the southern tip of Taiwan and ending close to northern Borneo. Three prominent bodies of water surround the archipelago: the Philippine Sea and the Pacific Ocean on the east, the South China Sea on the west and north, and the Celebes Sea and the coastal waters of Borneo on the south. The Philippines is composed of 7,107 islands and has a total land area of 300,000 square kilometers. It is divided into three major island groups, namely, Luzon, the largest island group with an area of 141,000 square kilometers, followed by Mindanao covering 102,000 square kilometers, and the Visayas with 57,000 square kilometers.

The Philippines is characterized as having a tropical marine climate, which is generally hot and humid. The northeast monsoon is experienced from November to April and the southwest monsoon from May to October. Dry season or summer is from March to May and the rainy season from June to November. Cool and dry season is experienced from December to February. Its climate is affected by El Niño and low pressure over the Pacific Ocean or South China Sea.



Figure 30: Map of the Philippines

Source: <http://www.worldatlas.com>

Disaster Risk Profile

As the world's third most vulnerable country to extreme weather events and sea level rise, the Philippines is already feeling the impacts of climate change (Alliance Development Works 2012). The Philippines is a disaster hotspot with commonly occurring floods, typhoons, landslides and mudslides, droughts, and earthquakes.

Over the past two decades, damages incurred have reached PHP 19.7 billion, or about USD 500 million (in real 2005 value), which is equivalent to 0.5 percent of the GDP. Damage to the agricultural sector alone averaged PHP 12.4 billion per annum. Following the 2009 tropical storm Ondoy and typhoon Pepeng, it is reported that 9.3 million people were severely affected. There is also a potential for enormous losses from low frequency, high impact hazards such as earthquakes, which are a real threat to many major urban areas, including Metro Manila (Central Intelligence Agency, 2011).

According to the World Bank, at least 16 provinces in the country are considered to be high risk for disasters due to hazards brought about by climate change. Because of the absence of barriers, thereby exposing the country to typhoons, floods, landslides and drought, the Philippines is more vulnerable to climate risks than other neighboring countries in Southeast Asia. Climate change-related impacts are projected to increase in the coming decades. In 2012, the Mindanao province was hit by the powerful typhoon Bopha or known locally as Pablo. It was considered as the strongest tropical cyclone to hit the province in decades. A year before, typhoon Washi (locally known as Sendong) devastated Cagayan de Oro City which is also located in the province of Mindanao. This resulted in considerable damage particularly since the communities and local government were caught off-guard as the province is not usually hit by strong typhoons.

Typhoon season in the Philippines occurs between June and December. Over 20 typhoons affect the country annually, with eight or nine making landfall. These come from the southeast, are generally the strongest, and usually affect Samar, Leyte, eastern Quezon province, and the Batanes group of islands.

Flooding often results from heavy or prolonged rainfall associated with typhoons and tropical depressions. Prolonged heavy rainfall can destabilize the soil along mountain slopes, resulting in landslides and mudslides that cause severe damage to nearby villages (ASEAN 2012). Floods are also very frequent in the country with 68 events in the last decade, affecting about 14 million people and killing an estimated 784 people. Floods have cost an estimated USD 2.1 million dollars in damages (**Table 11**).

Heavy rain or flash floods sometimes cause landslides. Ten landslide events were recorded in the last ten years. Landslides have affected an estimated 20,340 people (**Table 11**).

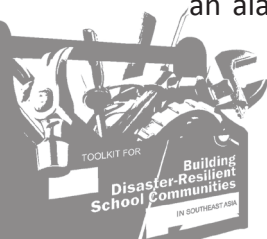
At least 60 percent of the land area of the country is exposed to multiple hazards. Major droughts are associated with the El Niño phenomenon (ASEAN 2012). Droughts which occurred in 1997 and 1998 caused widespread crop failure, water shortages, and forest fires in various parts of Philippines, and also dried out 20 percent of the country's fishponds. This led to a 6.6 percent drop in agricultural production and a 9.5 percent drop in construction and construction-related manufacturing (World Bank 2011).

Table 11: Hazards in the Philippines, 2004-2013

Hazard		Freq.	No. Killed	No. Affected	Total Damage (USD '000)
Drought	Drought	1	-	-	-
Earthquake (seismic activity)	Earthquake (ground shaking)	5	114	353,577	12,234
Epidemic	Bacterial infectious diseases	4	85	4,073	-
	Viral infectious diseases	2	770	130,717	-
Flood	Unspecified	2	27	15,100	-
	Flash flood	23	215	3,784,499	269,284
	General flood	41	531	10,845,249	1,867,065
	Storm surge/ coastal flood	2	11	50,034	2,520
Mass movement wet	Avalanche	1	6	1,200	-
	Landslide	10	1,285	20,340	2,281
Storm	Local storm	2	7	4,604	5
	Tropical cyclone	81	9,932	55,516,916	4,414,730
Volcano	Volcanic eruption	6	-	153,114	-

Source: EMDAT:The OFDA/CRED International database, data retrieved 10 June 2013

There is also a significant number of volcanic eruptions in the country. As per available disaster data, the country has been affected by six events of volcanic eruption in the past decade (Table 9). The major volcanic eruption of Mount Pinatubo in June 1991 killed 640 people, affected more than 1.0 million people and caused an economic loss of USD 211 million (ASEAN 2012). Epidemics have also affected the country with six cases of epidemics recorded in the past ten years which have affected about 134,000 people and killed 855 (Table 9). In terms of man-made hazards caused by pollution, a research conducted by the Philippine General Hospital in 2009 reported that the Philippines has the highest incidence of breast cancer in Asia. The research study may have found an alarming link between air pollution and breast cancer. Study was conducted with



commuters from the country's most populated and polluted cities like Manila. The study determined that commuters and residents particularly in Manila breathe air with toxin concentration that exposes them to many health risks, including cancer.

The most frequently occurring hazard are storms (50%) followed by floods (29%) and then landslides (8%). Volcanic eruptions, earthquakes and epidemics are all tied at 4%. Drought has the lowest frequency of events based on data in **Figure 31**.

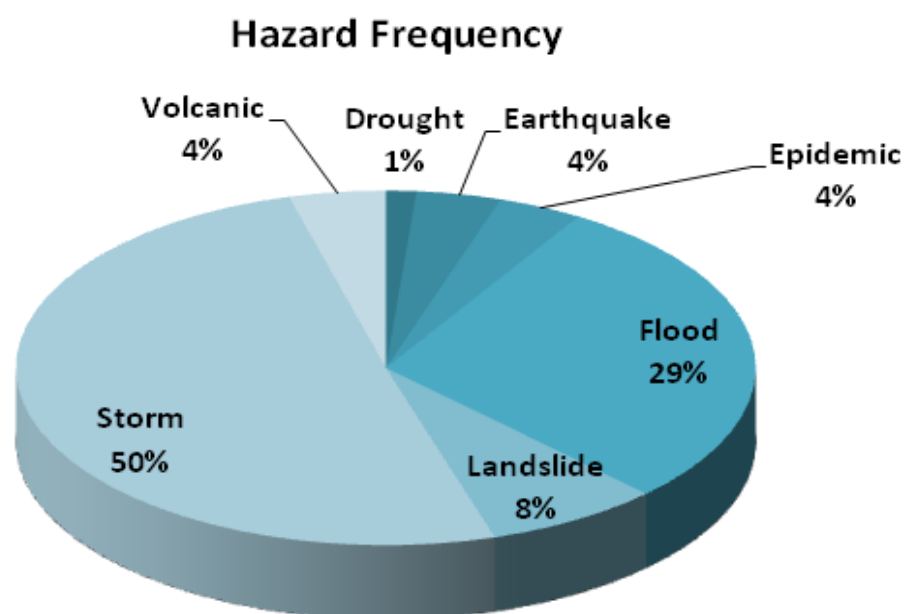


Figure 31: Hazard Frequency in the Philippines, 1984 – 2013

It is estimated that 74 percent of the Filipino population is vulnerable to hazards, with the poor being the most susceptible to experience the negative effects (World Bank 2011). Urbanization, environmental degradation and climate change are among the major determinants of a population's vulnerability. Disasters have contributed to the increasing incidence of poverty, especially in rural areas where almost one-third of the country's employment - mostly agricultural in nature - can be found. People living in calamity-prone areas in urban places such as riverbanks and estuaries are likewise vulnerable to natural and man-made disasters (GFDRR 2011).

Mainstreaming DRR Management

As one of the most disaster-prone countries in the world, the Philippines established institutional structures to respond to disasters early on. In 1941, the late President Manuel L. Quezon issued Executive Order No. 335 creating the Civilian Emergency Administration (CEA) which was tasked to formulate and execute policies and plans for the protection and welfare of the civilian population in times of emergency.

In 1978, Presidential Decree (PD) No. 1566 was issued to strengthen the Philippines' disaster control capability and to establish a national program for community disaster preparedness. PD 1566 paved the way for the creation of the National Disaster Coordinating Council (NDCC) (3rd AIPAS Caucus Report, 2011). NDCC is the highest policy-making, coordinating and supervising body at the national level for disaster risk management chaired by the Secretary of National Defense with the Office of Civil Defense (OCD), and has the heads of 17 other departments and agencies as members. The NDCC is also responsible for advising the President of the Philippines on the status of the national disaster preparedness programs and management plans, disaster operations, and rehabilitation efforts of all stakeholders. It also recommends to the President the declaration of the state of calamity and the release of the national calamity fund as needed (ADPC, 2009).

Because of the country's vulnerability to hazards and climate change risks, the government recognized the need to refine PD 1566 for the enhancement of the current national disaster mechanism of the country. In 2005, the Philippines adopted the Hyogo Framework for Action 2005-2015. As a result, the Philippine Congress enacted Republic Act No. 10121 or the 'Philippine Disaster Risk Reduction and Management Act of 2010' which was signed into law also in the same year. The law acknowledges the need to adopt a disaster risk reduction and management approach that is holistic, comprehensive, integrated, and proactive in reducing the socio-economic and environmental impacts of disasters including climate change. It also seeks to promote the participation of all sectors and stakeholders concerned, at all levels, especially the local community.

Since climate change and disaster risk reduction are closely linked, the Philippine Congress passed Republic Act No. 9729 or 'The Climate Change Act of 2009.' The Climate Change Act aims to mainstream climate change into the formulation of government policy by setting up a National Framework Strategy and Program on Climate Change. The Climate Change Commission was created to coordinate, monitor and evaluate the government's programs and actions for mitigating and adapting to the effects of climate change in the country.

Other important provisions of RA 10121 are the following:

- The law has empowered Local Government Units (LGUs) to enforce disaster risk reduction measures to effectively address their respective needs. It has mandated the LGUs to create Local Disaster Risk Reduction Management Office (LDRRMO). Based on a recent inventory, 45 of 80 provinces have LDRRMO and 23 of these have permanent staff.
- Not less than 5 percent of the estimated revenue from regular sources to the Local Disaster Risk Reduction Management Fund (LDRRMF) shall be allocated to support disaster risk management activities such as pre-disaster preparedness programs, including training, purchase of life-saving equipment, supply and equipment for



post disaster activities and payment of premium on calamity insurance. Thirty percent (30%) of the LDRRMF shall be allocated for Quick Response Fund or Stand-by Fund for relief and recovery programs.

The enactment of RA 10121 facilitated the changing of the name of National Disaster Coordinating Council to National Disaster Risk Reduction Management Council (NDRRMC). The basic functions remain the same and the NDRRMC is still chaired by the Secretary of National Defense. The Interior Secretary is now the Vice Chairperson for disaster preparedness, the Social Welfare Secretary is Vice Chairperson for disaster response, the Science and Technology Secretary is Vice Chairperson for disaster prevention and mitigation, and the Socio-economic Planning Secretary is Vice Chairperson for disaster rehabilitation and recovery.

NDRRMC is tasked with the development of the National Disaster Risk Reduction and Management Framework (NDRRMF) which is a comprehensive guidance document on disaster risk reduction, mitigation and preparedness for pre-event and disaster response, rehabilitation and recovery for post-event. The framework also anchored on the national programs towards implementing the Hyogo Framework for Action 2005-2015 (ADPC, 2011). The NDRRMF serves as the principal guide in the formulation of a National Disaster Risk Reduction and Management Plan (NDRRMP). The NDRRMF shall be reviewed every five years or as may be deemed necessary in order to ensure its relevance.

The NDRRMP outlines the activities aimed at strengthening the capacity of the national government and the local government units (LGUs) together with partner stakeholders, to build the resilience of communities and to institutionalize arrangements and measures for reducing disaster risks, including projected climate change risks and to enhance disaster preparedness and response capabilities at all levels. It highlights, among others, the importance of mainstreaming DRRM and CCA in the development processes such as policy formulation, socio-economic development planning, budgeting and governance particularly in the area of environment, agriculture, water, energy, health, education, poverty reduction, land-use and urban planning and public infrastructure and housing (UNISDR, 2010).

In 2010, the government developed Strengthening Disaster Risk Reduction in the Philippines: Strategic National Action Plan (SNAP) for 2009 to 2019. Part of the plan is the institutionalization of DRR in all government agencies and government-owned and controlled corporations. This is translated as integration of DRR into policies and plans; incorporation of DRR programs, projects and activities into their budgets through the explicit recognition of budget lines for these projects and activities that are appropriate for disaster mitigation and preparedness; participation in the 18 priority projects and programs of the SNAP; and cooperation with national and international NGOs and the private sector in the efforts towards safer and more resilient communities. SNAP also encourages the Local Government Units to apply and integrate DRR in their day-to-day operations and planning.

The government also institutionalized the cluster approach, which is a mechanism that can help address identified gaps in disaster response and enhance the quality of humanitarian aid. It aims to improve the effectiveness of humanitarian response by ensuring greater predictability and accountability while at the same time strengthening partnership among NGOs, International organizations, the International Red Cross and Red Crescent Movement and other United Nations agencies. In 2005, the Inter-Agency Standing Committee (IASC)¹¹ agreed to designate global ‘cluster leads’ for humanitarian emergencies. In the present institutional set-up, it was observed that the cluster approach is an effective system of gathering all stakeholders who share the same functions for disaster risk reduction. During times of disaster, Cluster Leads and IASC Country Team counterparts are able to conduct rapid needs assessment, provide findings, recommendations, assess gaps, and improve response and relief efforts.

Table 12: Designated Clusters and Government Cluster Leads for DRRM in the Philippines

Cluster	Government Lead	IASC Country Team Counterpart
Food and Non-Food Items (NFI)	Department of Social Welfare and Development (DSWD)	World Food Program (WFP), United Nations Children’s Fund (UNICEF)
Camp/IDP Management, Emergency Shelter and Protection		International Federation of the Red Cross (IFRC)/ UN Habitat, United Nations High Commission for Refugees (UNHCR), International Organization for Migration (IOM)
Permanent Shelter and Livelihood		International Labor Organization (ILO), UN Habitat
WASH, Health, Nutrition, and Psychosocial Services	Department of Health (DOH)	UNICEF, World Health Organization (WHO), WFP
Logistics and Emergency Telecommunications	Office of Civil Defense/ NDCC Operations Center	WFP, UNICEF, United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA)
Education	Department of Education (DepEd)	UNICEF and Save the Children
Agriculture	Department of Agriculture (DA)	Food and Agriculture Organization (FAO)
Early Recovery	Office of Civil Defense (OCD)	United Nations Development Program (UNDP)
Water	Metropolitan Waterworks and Sewerage System (MWSS)	

Source: NDCC Memorandum No.12, series of 2008. October 6, 2008

¹¹ IASC is the primary mechanism for inter-agency coordination of humanitarian assistance; a unique forum involving the key UN and non-UN humanitarian partners.



Other national initiatives include the following:

- a. NDRRMC, with the support of other concerned agencies at the national and local levels to continuously implement the following activities on disaster risk reduction (3rd AIPAS Caucus, 2011):
 - Contingency planning for local government units
 - Community-based disaster risk management
 - Conduct of disaster preparedness drills for earthquake and tsunami
 - Enhancement of tsunami early warning system
 - Installation of signage for tsunami
 - Capability building for emergency response
 - Development of information, education and communication materials
 - Forging of partnership agreements with private sectors for public and private sector partnership for disaster mitigation, adaptation and preparedness
 - Sectoral mainstreaming of disaster risk reduction:
 - Infrastructure: planning and design of roads and bridges
 - Education: “Safe Schools” (curriculum development and resilient school facilities)
 - Land use and physical planning
 - Local governance
 - Environment
 - Health: “Safe Hospitals”
 - Safe cities campaign
- b. Upgrading of the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) and the Philippine Institute of Volcanology and Seismology (PHIVOLCS) forecasting capabilities.

PAGASA and PHIVOLCS are the warning agencies for meteorological-hydrological and geological hazards, respectively. The capability upgrade focused on improving forecasting capability of natural hazards such as typhoons, earthquakes, volcanic eruptions and tsunamis through equipment acquisition and personnel development. The capability upgrade is geared towards strengthening linkages with foreign forecasting institutions to make forecasting not only a domestic, but also a regional concern. Geo-hazard mapping in identified areas is designed to serve as scientific reference for land-use planning, formulation of disaster management plans, and establishment of an effective early warning system to include real-time information dissemination.

In the President’s recent State of the Nation Address (SONA, 2013), it was reported that the joint venture of the Geo-hazard Mapping and Assessment Program with Project NOAH (Nationwide Operational Assessment of Hazards) of the Department of Science and Technology has completed the multi-hazards mapping of 28 of the most vulnerable

areas in the country. Likewise, the most vulnerable areas in the Greater Metro Manila will be mapped and completed by 2014. Geo-hazard maps of 496 cities and municipalities of the country have also been completed. The remaining 1,138 areas in the country will be done by 2015. The three dimensional mapping of the country will help improve the interpretation of data on risk maps.

- c. Annual Observance of the National Disaster Consciousness Month (NDCM) in July as per Executive Order No. 137 declaration, dated 10 August 1999.

Mainstreaming DRR in Education

The Strategic National Action Plan (SNAP) for DRR specifically identifies Education and Research as priority programs. The program, which is the mainstreaming of DRR in the education sector, also aims to integrate DRR modules at the primary, secondary, and tertiary levels as well as support the training of teachers on DRR. The goal is to fully integrate DRR into both formal and informal education in the country by 2015. In accordance with SNAP, the country's Department of Education has issued a standing order (Department Order 55 s.2007) titled "Prioritizing the Mainstreaming of Disaster Risk Reduction Management in the School System and Implementation of Programs and Projects Relative Thereof." This Order endorses and facilitates the integration of DRR in both the structural (i.e., safe schools) and non-structural (i.e., curriculum) components of the school system (Reyes et al 2011).

The construction of DepEd's LAPUS (The Learning and Public Use School) Building and UNICEF's Building Safe Learning Environment (BSLE) for Children is part of the safe school construction initiatives (Department of Education 2010). LAPUS building is a one-storey (two-classroom) structure, designed for the typhoon-prone areas to serve various functions (classroom for up to 63 students, evacuation centers for at least six families, and venue for special school and community activities). It is projected to be more resistant to flooding and earthquake since it is made of reinforced concrete with steel doors and windows, basic lighting fixtures and outlets, with an estimated life span of more than 50 years. The two-storey structure is also expected to be more secure than a single-storey facility.

The Philippines, along with Cambodia and Lao PDR, has prioritized the mainstreaming of DRR in the education sector (Luna, Bautista 2007). In 2007, DepEd launched the "Mainstreaming Disaster Risk Reduction into the Education Sector and Development in the Philippines" (MDRD-EDU) in partnership with the Asian Disaster Reduction Center, United Nations Development Program (UNDP) and the European Commission-Humanitarian Aid and Civil Protection (ECHO). The final module was integrated into three chapters with 12 lessons in Science-I and four chapters with 16 lessons in social studies of 1st year of secondary schools (Grade 7). The subjects cover the following DRR



topics: Natural Hazards, Climate Change/Global Change, Family Disaster Plan, Volcanoes, Heat Wave, Tornado and Fire.

The mainstreaming was done in two phases:

Phase I: January 2007 - April 2008. The accomplishments of this phase are as follows:

1. Development of DRRM modules for secondary school curriculum,
2. Training of Teachers (ToT) on the use of the modules,
3. Pilot-testing of the DRRM module in six schools in the Philippines, and
4. Revision of the DRRM module according to the findings from the pilot testing. A total of 1,020 students and 75 teachers, regional educational supervisors, and officers have benefited from the project.

Phase II: November 2008 - December 2009

The second phase was on Advocacy and Pilot Project Implementation in the Education Sector in Three Southeast Asian Regional Consultative Committee (RCC) Member Countries. Phase II also intends to institutionalize the DRR modules and the ToT module (developed in Phase I) in the national curriculum and in the teachers' training system.

DepEd Order 55 series of 2007 also directed the utilization of the department's Disaster Risk Reduction Resource Manual as a guide for implementing DRR programs, mainstreaming of DRR concepts in elementary and secondary school curricula, and development of multi-media modules on disaster preparedness. Another standing order (DepEd Order 82 s.2010) titled "Reiteration of Related Implementing Guidelines on Climate Change Adaptation and Disaster Risk Reduction at the School Levels" directs schools to revitalize the various programs and projects on DRR including mainstreaming of DRR and integration of climate change adaptation in school lessons. Various memorandums have also been released to support such standing orders, such as DepEd Memo276 s.2010, which orders the integration of climate change adaptation and DRR with environmental education into elementary and high school curricula.

A memorandum was also issued to all accredited publishers of educational materials to authorize them to publish approved instructional materials on DRR and climate change adaptation.

The Department of Education (DepEd) has developed modules and lesson exemplars on mainstreaming DRR to be used by teachers and students. The lesson exemplars and teacher/student modules were developed for the secondary curriculum, specifically for science and social studies subjects. The lesson exemplars contain strategies and methods of teaching DRR, while teacher/student modules serve as reference materials.

These materials have gone through a series of testing and validation with experts from the Department of Science and Technology and Department of Environment and Natural Resources, and have been reviewed and approved by the Instructional Materials Council-Secretariat for use.

As part of the mainstreaming of DRR in the curriculum, a teacher-training program and a “training of trainers” (ToT) program on DRR and emergency response were conducted for teachers and school administrators. The ToT, usually supported by INGOs and NGOs, uses the ToT approach to maximize existing resources and expedite the capacity-building process. Teachers are also trained to produce their own materials on DRR and to formulate DRR action plans that can be applied in their particular school.

DRR has been integrated in the curriculum and learning materials of the alternative learning system (ALS) or non-formal education program under the Bureau of Alternative Learning Systems (BALS) of DepEd. The ALS is an alternative pathway of basic education for out-of-school youth and those who have dropped out of school or have not had access to formal basic education. DRR concepts have also been integrated in the environment module used for non-formal education. The textbook has been approved by DepEd and printed out for use by students taking up non-formal or alternative learning education.

In accordance with the Philippines Disaster Risk Reduction Management Act of 2010, which mandates all government agencies to establish an internal disaster mitigation unit or office, the DepEd formed their own disaster management office to serve as a central planning, policy-making and operations body in times of calamity. With DepEd Order 50 s2011, the Disaster Risk Reduction and Management Office (DRRMO) will enhance the agency’s disaster response and mitigation measures. The DRRMO shall institutionalize the culture of safety at all levels, to systematize protection of education investments, and to ensure continued delivery of quality education services. The office will be led by a DepEd core group composed of key officials in the DepEd central office. Similarly, the DepEd also requires its regional, division and school heads to designate a permanent DRR focal person/coordinator in-charge of DRR and climate change programs and environmental education. Coordinators or focal persons are trained through the coordination with NGO’s and INGO’s who are helping to mainstream DRR in the education sector nationwide.

The Department of Education has also launched the School Mapping Exercise (SME) through a GIS-Based School Profiling System. This profiling system will help DepEd know the risks that schools experience and take action. The School Mapping project is continuously establishing database and spatial data. About (50%) of the school profiles have been encoded, including photographs per building and scanning of ownership documents, vicinity and location maps, site development plans and validation of 14,000 GPS coordinates. To date, the Unit is coordinating with the Office of the Secretary and various NGOs for possible assistance in surveying, data management and GIS. Through



an MOU signed by Sec. Luistro and CyberSoft, a GIS system for Globe Telecommunication and other TV networks, a spatial map is being prepared. The map shows the various locations of all public schools using barangay locations and GPS coordinates from the SMU database (HFA Country Report 2011).

The slew of disasters which hit different parts of the country in 2013 resulted in significant negative impact on the education sector. In September, a faction of the Moro National Liberation Front (MNLF) attacked Zamboanga City in Western Mindanao in September 2013 resulting in the displacement of an estimated 100,000 individuals who are currently scattered in several evacuation centers set up around the city.

The disruption in the normal life in the city resulted in discontinuation of classes in many schools. Out of the 131 schools that reported to have opened, only 81 schools had learners present. Of the 197,217 regular learners, only 1% (2,539) returned to school. Teachers also had a hard time returning to work, with only 4-24% of teachers able to report. DepEd personnel were either victims of fire or displaced from their homes where the rebel troops have set up camp.

The Education cluster convened and identified priority needs such as learner's kits and teacher's kits in school communities directly affected by the fire. They prioritized the schools that had already reopened for classes to be recipients of the kits. Schools had totally damaged facilities and others have classrooms being used by evacuees. They also identified issues such as the need to develop a plan for the projected drop-outs for all levels, the need to know and present current situation of the sector (all levels), and the setting up of a mechanism for volunteer (SERVE) program of para-teacher for DepEd and Day Care.

The following month, a 7.2 magnitude earthquake hit Bohol and surrounding provinces in the Visayan region, leaving 222 dead, 976 injured and 3.2 million persons affected, and destroying Php 2.25 billion worth of schools, bridges, roads and other public infrastructure (UNOCHA n.d.). The Bohol Education Cluster convened two days after the earthquake to discuss the purpose and mechanism of the cluster for more effective operations. They also discussed the situation arising from the impact of the recent disaster on the education sector. Assessment of 283 (24%) schools out of the reported 1,185 affected schools in Regions 6 and 7 estimated the cost of damage at Php 423 billion. With priority needs identified, the DepEd was able to conduct psychosocial first aid (PFA) to 480 teachers in Bohol. The PFA sessions scheduled for the remaining period target teachers who will be trained as multipliers. DepEd mobilized resources to provide temporary learning spaces (TLS) and utilized its Quick Response Fund and savings to rehabilitate the damaged classrooms. Donors such as AusAID, Save the Children, UNICEF, World Vision, and the Philippine Chamber of Commerce provided school tents to the Division of Bohol.

In November 2013, super typhoon Haiyan (local name Yolanda) ravaged the Visayan provinces of Leyte, Iloilo, Panay, Cebu and Antique. An estimated 3,171 schools were affected with varying degrees of damage. Around two weeks after the typhoon hit, classes have already been resumed in several areas. The DepEd encouraged schools to resume classes as soon as possible not only to meet the minimum 180 contact days with students (considering the remaining 20 buffer days in its 200-day annual school calendar), but also to help students recover quickly. According to DepEd officials, return to school after a disaster signals the return to normal life.

Mainstreaming DRR in Health

Epidemics and disease outbreaks affect the country. The Department of Health, through its Health Emergency Management Staff (HEMS), with support from USAID, AusAID and the government of Finland, has developed the Surveillance in Post Extreme Emergencies and Disasters (SPEED). SPEED is the Department of Health's (DOH) tool for preparedness and response and is one of the projects formulated based on the Hyogo Framework for Action. SPEED is an early warning disease surveillance system for post-disaster situations. It aims to determine potential disease outbreaks and monitor trends to prioritize health conditions. The project aims to reduce deaths caused by diseases by allowing appropriate response from local medical practitioners and health executives and program planners.

SPEED uses a web-based software, which can receive data via SMS, enable validation of data online and automatic generation of necessary charts and graphs, spreadsheets, maps and narrative reports. It facilitates the transmission of syndromic diseases surveillance information from primary reporting units at the barangay or evacuation center level to all levels of the health system up to the national level in a short period of time.

Challenges

1. The Philippine government has successfully put in place very specific policies and laws to mainstream DRR and CCA. The challenge is to harmonize the different plans and initiatives under a strategic DRRM framework, which also integrates CCA, while sustaining existing DRR efforts.
2. Capacity development is yet another challenge in terms of institutional and technical implementation of these laws at various levels from the local to the national. There is a need or conscious effort to build local expertise, particularly on climate change.
3. There is a need to increase public awareness and understanding of DRR policies and programs.
4. The reproduction of more resource materials like modules for mainstreaming of DRR in schools and Education School Facilities Manuals and Disaster Risk Reduction Resource Manual to schools for school heads and school staff remains a challenge



for the Department of Education. Resource materials are very important tools to help guide teachers and students to understand hazards that may eventually help school communities during times of disasters.

5. Information management and monitoring and evaluation are some areas for strengthening the efforts to mainstream DRR in the education sector.
6. Continuous enhancement of local capacity on DRRM is another key area of concern.
7. Areas with armed conflict and security issues due to intermittent clashes between the government forces and the insurgents (i.e., the Communist Party of the Philippines and the Moro National Liberation Front) pose a risk for disruption of classes at anytime. This creates an unstable situation for the education sector—for both students and teachers.

Summary of Strengths and Area for Improvement

Strengths

- ✓ In compliance with the Philippines Disaster Risk Reduction Management Act of 2010, the DepEd formed their own disaster management office to serve as a central planning, policy-making and operations body in times of calamity. By virtue of DepEd Order 50 s2011, the Disaster Risk Reduction and Management Office (DRRMO) will enhance the agency's disaster response and mitigation measures. The DRRMO shall institutionalize the culture of safety at all levels, systematize protection of education investments, and ensure continued delivery of quality education services. Similarly, the DepEd also requires its regional, division and school heads to designate a permanent DRR focal person/ coordinator in-charge of DRR and climate change programs and environmental education. Coordinators or focal persons are trained through the coordination with NGO's and INGO's who are helping to mainstream DRR in the education sector nationwide.
- ✓ Case stories from selected schools in the country feature the formation of school DRR management councils in response to disasters experienced and as part of their realization of their vulnerability to hazards and the need to capacitate themselves for better preparedness and response.
- ✓ School disaster management plans are developed in schools which have already established the School DRR management councils. Case stories in the preceding chapter feature some examples of the processes followed and the outputs produced.
- ✓ 'Philippine Disaster Risk Reduction and Management Act of 2010' became a law in the same year which enhanced the disaster management system in the country and aimed to promote the participation of all sectors and stakeholders

concerned, at all levels, especially the local community. The government developed Strengthening Disaster Risk Reduction in the Philippines: Strategic National Action Plan (SNAP) for 2009 to 2019 which specifically identifies Education and Research as priority programs. The program, which is the mainstreaming of DRR in the education sector, also aims to integrate DRR modules at the primary, secondary, and tertiary levels as well as support the training of teachers on DRR.

- ✓ Various orders and directives have been issued by the DepEd to facilitate the mainstreaming of DRR in the education sector. One is the Order which involves the utilization of the department's Disaster Risk Reduction Resource Manual as a guide for implementing DRR programs, mainstreaming of DRR concepts in elementary and secondary school curricula, and development of multi-media modules on disaster preparedness. Another standing order (DepEd Order 82 s.2010) titled "Reiteration of Related Implementing Guidelines on Climate Change Adaptation and Disaster Risk Reduction at the School Levels" directs schools to revitalize the various programs and projects on DRR including mainstreaming of DRR and integration of climate change adaptation in school lessons, and DepEd Memo 276 s.2010 which orders the integration of climate change adaptation and DRR with environmental education into elementary and high school curricula.
- ✓ The Department of Education (DepEd) has developed modules and lesson exemplars on mainstreaming DRR to be used by teachers and students. The lesson exemplars and teacher/student modules were developed for the secondary curriculum, specifically for science and social studies subjects.
- ✓ DRR concepts have also been integrated in modules for non-formal education and for alternative learning system (ALS).

Area for Improvement

- ✓ Information management and monitoring and evaluation are some areas for strengthening in the efforts to mainstream DRR in the education sector.



4.8 Singapore

Geography and Climate

The Republic of Singapore is an island city state off the southern tip of the Malay Peninsula between Malaysia and Indonesia. It is the smallest ASEAN nation. Singapore consists of 63 islands including mainland Singapore. Lowlands, including a gently undulating central plateau containing a water catchment area and nature preserve, occupy most of the territory of Singapore. It has a tropical rainforest climate with uniform temperature and pressure, high humidity, and abundant rainfall. The wetter monsoon season stretches from November to January (CIA Factbook, 2012).



Figure 32: Map of Singapore

Source: <http://www.worldatlas.com>

Disaster Risk Profile

Singapore is relatively free from natural hazards due to its geographical location. However, it is not spared from urban hazards, man-made disasters and epidemics. The city state prepares for civil emergencies which could involve, for instance, large-scale loss of lives or damage to property, or a major incident with a potential to escalate in scale (AIPA Report 2011). A potential disaster that could affect Singapore is the destructive impact of tsunami. In addition, Singapore faces some challenges with respect to the impacts of climate change (ADRC, Country Report 2009).

The country is also affected by various epidemics. The epidemic Severe Acute Respiratory Syndrome (SARS) in 2003 killed 33 people and affected 238 people (Singapore Health Promotion Board). Singapore was not spared from the H1N1 pandemic in 2009 when an estimated 415,000 people had been infected with the virus by the time the Disease Outbreak Response System (DORS) color code alert had been downgraded to baseline green. Most cases of H1N1 infection in the country were mild, although up to 18 deaths due to H1N1 were reported in 2009 (SingaporeInfopedia).

There is a total of 2,238 people affected and 36 fatalities due to epidemic in the past decade (**Table 13**).

Table 13: Hazards in Singapore, 2004-2013

Hazard		Freq.	No. Killed	No. Affected	Total Damage (USD '000)
Epidemic	Viral infectious diseases	3	36	2,238	--

Source: EMDAT:The OFDA/CRED International database, data retrieved 10 June 2013

Singapore is a highly urbanized city state, with a potential for cascading disaster situations. Singapore has an unusually low level of urban poverty (WB 2009:2). Although not shown in any historical data, Singapore is vulnerable to transboundary air pollution, having experienced intense transboundary haze that severely affected air quality in 1994 and 1997 (WB 2009:4) and recently, in June of 2013, the country was severely affected by haze from wildfires in Indonesia. Thus, the governments of Malaysia, Singapore and Indonesia were compelled to agree on more lasting and permanent solutions to the haze problem. Farmers and plantation companies for pulpwood and palm oil attributed these wildfires to the use of slash and burn methods to clear vast tracks of forestland (Shadbolt 2013). According to the Singapore Strait Times, the recent haze pollution index reached 371 which is worse than the 1997 level of 226.¹² Government estimates cost at USD 9 million in health care cost and disrupted air travel and business.

¹² The country's National Environment Agency indicated that air quality becomes unhealthy when index passes 200.



Mainstreaming DRR Management

While the country is historically not prone to any natural hazards, the government has strengthened and reinforced the country's disaster risk reduction policy in the prevention and mitigation of biological and man-made hazards.

The Ministry of Home Affairs (MHA) is the principal policymaking and directing authority responsible for civil defense, emergency preparedness and disaster management. Under its command, the Singapore Civil Defense Force (SCDF) is the national authority that will coordinate, plan, command and control all operations undertaken by the various agencies to mitigate major disasters. The SCDF, also the nation's emergency service provider, is in-charge of preventing and mitigating man-made disasters in a highly urbanized environment and hazardous material (Hazmat) industries. The global threat of terrorism loomed large in recent years, and this has also added a new dimension to emergency preparedness and response in the country (4th AIPAS Country Report, 2012). There are several laws that govern the disaster management in the country. The main legislation, which supports the emergency preparedness and disaster management activities in the country, are the Civil Defense Act, Fire Safety Act and the Civil Defense Shelter Act. The Civil Defense Act provides the legal framework for the declaration of state of emergency. At the national level, various laws empower respective government ministries and their agencies to prevent and manage crisis. Examples of such legislation are the Building and Construction Authority Act, Building Control Act, Environment Protection and Management Act, Environment Public Health Act, Hazardous Waste (Control of Export, Import and Transit) Act, Infectious Disease Act, National Environment Agency Act and Radiation Protection Act.

The government established the Homefront Crisis Management System, which brings together all government ministers and agencies to execute the country's national plan to manage an imminent large scale and natural disasters. It also adopts the framework for effective and well-coordinated multi-agency incident management system (IMS) for large-scale disasters. This national plan is executed annually to ensure that all agencies are familiar with specific roles and develops necessary capabilities for incident management (4th AIPAS Country Report, 2012).

Mainstreaming DRR in Education

The Ministry of Education in Singapore integrates DRR in schools by curricular or co-curricular. Curricular DRR topics are integrated in the existing subjects. This is called subject-based strategy. The Ministry of Education (MOE) works closely with the Singapore Civil Defense Force to incorporate emergency preparedness as integrated in schools. Emergency preparedness is integrated in the Social Studies and Civics and

Moral Education (CME) syllabus for students in the primary and secondary levels. As part of Emergency Preparedness (EP), short EP modules on essential skills and knowledge in surviving emergencies were introduced by the SCDF for schools to conduct during assembly periods (Reyes et al 2011).

For co-curricular activities, schools have adopted the School Emergency Organization (SEO) to take care of various needs of the school staff, students and teachers during emergency situations. The SEO is established in every school in the country. The organization has the capability to provide services ranging from basic first-aid procedure to psychosocial support for the school community. Schools also conduct full-scale role-playing preparedness exercises for emergency scenarios for teachers and students. Teachers use scenario-based lesson guides to conduct these role-playing scenarios and drills to familiarize students and school staff on actual disaster emergency situations. The school also involves the nearby community in the full-scale drills and role-playing scenarios. Aside from the full-scale drills, the schools also engage with the Community Emergency Preparedness Program (CEPP). CEPP is the Civil Defense Force program that provides theoretical and practical training for emergency preparedness. Some of the emergency training, which is given, is basic first aid and CPR training and fire safety, casualty evacuation, and emergency procedure due to unconventional threats like terrorism attacks. Another co-curricular activity that schools are encouraged to participate in is the Singapore Mass Rapid Transportation (SMRT) Community Preparedness Program (SCPP) which is a public awareness and education program that aims to train communities to play an active and effective role in disaster preparedness. The program promotes enhancement of safety and encourages students to share ownership of security. According to the HFA country Report (2007-2009), the Singapore Civil Defense Force also encourages students from the secondary schools to participate in the National Civil Defense Cadet Corps (NCDCC), and the Fire Station Engagement Program. The latter is a training program held in schools to prepare students in the event of emergencies or security threats.

Mainstreaming DRR in Health

Singapore is well-known for successfully managing epidemics and outbreaks by using highly effective systematic procedures. Below are some of the valuable lessons learned from the SARS outbreak in 2003 based on the Country Report of Singapore to the ASEAN Plus 3: Good Practices in Responding to Emerging Infectious Diseases Experience, 2009.

Public Health Surveillance System. The success of surveillance systems in detecting the disease was attributed to the following:

- a. immediate access to health care of persons who were inflicted by the virus or bacterial infection.
- b. immediate information exchange on infectious diseases from the health facility to health authorities is crucial for the analysis of data.



The core of the surveillance system comprises the continuous collection, analysis and interpretation of case notifications and syndromic events. Laboratory and environmental data are essential practice for effective planning, implementation and evaluation of disease control interventions. The system allows the authorities to show the public a complete picture of a particular infectious disease case. A well-established system provides early and prompt identification of an outbreak. The system also allows health authorities to observe and predict dangers posed by the outbreak, and to understand the factors contributing to its spread. At the same time, surveillance is closely integrated with timely dissemination of information to all those who need to know. Ongoing data exchange within the medical and public health community is necessary to create situational awareness and facilitate disease control (ASEAN, 2009).

Rapid Response. The national level response to control the situation is focused on three areas.

- a. **Hospital Infection Control** procedures:
 - In the case of highly infectious disease like SARS, the health care workers are required to wear N95 masks, gloves, gowns;
 - Practice frequent hand washing after contact with an infected patient.
 - Health care institutions are also required to closely monitor their staff through constant checking of temperature.
 - To prevent cross-infection between hospitals, no inter-hospital transfers of patients were allowed.
 - Doctors and health care workers in private hospitals were required to register to work at one hospital only.
 - All visitors were asked to register for quick referencing.
 - Hospitals restrict the number of visitors to just one per patient. But during the height of the SARS incident no visitors were allowed to visit.
- b. **Contact tracing and quarantine** was established for the identification and quarantine of all close contacts of probable/suspect SARS cases and observation of cases in whom SARS could not be ruled out.

Risk Communications. In serious epidemic or outbreak cases of highly infectious diseases, the Singapore government learned that good communication and feedback from the MOH to the public is crucial. This helps gain support from the public to understand what needs to be done in order to control further transmission. When fast and reliable information is given, the MOH gains credibility in handling the emergency situation and gives the public confidence in the response program being enforced.

Other government initiatives in mainstreaming DRR in nationwide:

1. Public Education and Community Outreach Program
2. Hazmat Transport Vehicle Tracking System
3. Disaster Response System

Challenges

1. As of the latest National Progress Report, each agency is responsible for their own areas of disaster risk reduction effort and warning. There is some progress in collaboration even as each agency works with the Civil Defense Force and Police Force for their respective DRR efforts. The country has achieved some progress in developing a national multi-sectoral platform for disaster risk reduction but there remains a need to have a systematic policy to ensure it would be functional.
2. The National Environment Agency (NEA) provides weather surveillance and multi-hazard warning services on a 24/7 basis to the public, industry and relevant agencies in Singapore. Singapore has also developed a tsunami early warning system in 2008. There is a need for further study on vulnerabilities due to climate change.
3. Early warning systems are in place for all major hazards, with outreach to communities but more effort required to educate the communities.
4. While Singapore is actively involved in working with other countries regarding the problem of transboundary smoke haze, this type of hazard (as experienced in the past) is sometimes beyond Singapore's control. There is also a continual threat of emerging diseases (such as the Chikungunya disease) to be imported to Singapore by foreigners.

Summary of Strengths and Area for Improvement

Strengths

- ✓ The main legislation, which supports the emergency preparedness and disaster management activities in the country, are the Civil Defense Act, Fire Safety Act and the Civil Defense Shelter Act. The government established the Homefront Crisis Management System, which brings together all government ministers and agencies to execute the country's national plan to manage imminent large scale and natural disasters. It also adopts the framework for effective and well-coordinated multi-agency incident management system (IMS) for large-scale disasters. This national plan is executed annually to ensure that all agencies are familiar with specific roles and develop necessary capabilities for incident management.



- ✓ The Ministry of Education in Singapore integrates DRR in schools by curricular or co-curricular. Curricular DRR topics are integrated in the existing subjects. This is called subject-based strategy. The Ministry of Education (MOE) works closely with the Singapore Civil Defense Force to incorporate emergency preparedness as integrated in schools. Emergency preparedness is integrated in the Social Studies and Civics and Moral Education (CME) syllabus for students in the primary and secondary levels.
- ✓ For co-curricular activities, schools have adopted the School Emergency Organization (SEO) to take care of various needs of the school staff, students and teachers during emergency situations. The SEO is established in every school in the country. The organization has the capability to provide services ranging from basic first-aid procedure to psychosocial support for the school community. Schools also conduct full-scale role-playing preparedness exercises for emergency scenarios for teachers and students. Teachers use scenario-based lesson guides to conduct these role-playing scenarios and drills to familiarize students and school staff with actual disaster emergency situations. The school also involves the nearby community in the full-scale drills and role-playing scenarios.

Area for Improvement

- ✓ There is a need for policy issuance to ensure proper and effective coordination across sectors, including the education sector, with regard to DRR.

4.9 Thailand

Geography and Climate

Thailand borders the Andaman Sea and the Gulf of Thailand, southeast of Burma. Measuring 513,120 square kilometers, it has on its north Burma, on its northeast Cambodia and Lao PDR, and on its southern tip, Malaysia.

It has a tropical climate with the rainy, warm, cloudy southwest monsoon occurring in mid-May to September, and the dry, cool northeast monsoon from November to mid-March. Its southern isthmus is always hot and humid (IndexMundi). The country has a central plain with the Khorat Plateau in the east and the rest covered with mountains elsewhere.

There are current environmental issues which may influence the population's vulnerability to the effects of natural hazards and climate changes. Air pollution from vehicle emissions and water pollution from organic and factory wastes are some of the results of urbanization and progress in the country. Other contributing factors include deforestation and soil erosion.



Figure 33: Map of Thailand

Source: <http://www.worldatlas.com>

Disaster Risk Profile

While emerging as a newly industrialized country, Thailand faces a number of natural disasters every year due to hazards like tropical cyclone, flood, drought, earthquake, and tsunami. The country's economic growth is also hampered by human-induced disasters associated with rapid development.

In the past ten years, the most frequently occurring natural disasters are floods (both general floods and flash floods), storm and drought. In terms of cause of mortality, tsunami brought about by earthquake tops the list, followed by floods. Floods and tsunami have also resulted in the most costly damage to property (**Table 14**).

Table 14: Hazards in Thailand, 2004 - 2013

Hazard		Freq.	No. Killed	No. Affected	Total Damage (USD '000)
Drought	Drought	4	-	16,482,602	420,000
Earthquake (seismic activity)	Earthquake (ground shaking)	1	1	16	-
	Tsunami	1	8,345	67,007	1,000,000
Epidemic	Viral infectious diseases	3	43	38,616	-
Flood	Flash flood	7	296	2,493,589	450,844
	General flood	14	1,315	22,767,494	40,655,440
Mass movement wet	Landslide	1	3	110	-
Storm	Unspecified	2	13	6,550	246
	Tropical cyclone	5	29	1,007,000	20,000
Wildfire	Forest fire	1	-	-	-

Source: EM-DAT: The OFDA/CRED International Disaster Database, data retrieved 15 October 2013

The Indian Ocean tsunami in December 2004 devastated six provinces in Thailand leaving an estimated cost of damage of more than USD 1 million.

The land subsidence in Bangkok area resulting from the depletion of the water table is a natural hazard that poses potential risks to the population living in the area.

A man-made hazard which results in death and injury is the armed conflict in the three southernmost provinces of Thailand - Yala, Pattani and Narathiwat. Five thousand people have been killed since 2004. The southern conflict stems from a political and cultural alienation, perceived by those from the south which are Malay-speaking Muslims, unlike the rest of Thailand, which is predominantly Buddhist and Thai-speaking. Many in these

southern provinces feel estranged from the highly centralized political system and their insurgency is described by analysts as “fragmented, ill-defined and shadowy – harboring (sic) wide and varied goals, from the largely improbable separatist call for an independent state to the more popularly espoused demand for greater autonomy in political and administrative affairs (World Time n.d.).” The intermittent encounters between the government military and the insurgents, as well as violent attacks on civilians, which include teachers and students, pose a threat to the safety of the school community and the civil society as a whole.

Mainstreaming Disaster Risk Management

The disaster management system in Thailand is mainly based on the Civil Defense Act of 1979 and the Civil Defense Plan of 2002. With the enactment of the Bureaucrat Reform Act of 2002, the Thai government established the Department of Disaster Prevention and Mitigation (DDPM) under the Ministry of Interior.

The Disaster Prevention and Mitigation Academy (DPMA) was established in 2004 with six campuses across the country. It provides training for DDPM staff members, other government officials at the national and local levels, community leaders in disaster prevention, the private sector, Civil Defense Volunteers, and others involved in disaster preparedness activities in Thailand. The DPMA has developed five training programs according to disaster type and target trainee type, and these are further subdivided on the basis of each trainee’s abilities (Disaster).

With the activation of these institutions and driven by the enactment of the HFA, the Thai government further strengthened its legal systems and structure by establishing the National Disaster Warning Center (NDWC) in May of 2005 and enacting the Disaster Prevention and Mitigation Act in 2007. The Act stipulates institutional arrangements as illustrated by the National Disaster Prevention and Mitigation Committee (NDPMC), chaired by the Prime Minister. The NDPMC is primarily responsible for developing national disaster risk management policies. At the local level, the Provincial Disaster Prevention and Mitigation Committee was formed to formulate the provincial disaster management plans with guidance from the National Disaster Prevention and Mitigation Plan.

In 2009, the Cabinet approved the Strategic National Action Plan (SNAP) for Disaster Risk Reduction (2010-2014) as proposed by the NDPMC.

Activities under the Community-based Disaster Risk Management Program include capacity building of Civil Defense volunteers in disaster management efforts, evacuation drills to prepare for tsunami or typhoon emergencies, and information dissemination through multi-media.



Mainstreaming DRR in Education

The SNAP includes the provision of knowledge on hazards and DRR to all levels in the education sector. The target is to complete the curriculum on DRR for primary, secondary and university levels by 2014.

In 2009, a Memorandum of Understanding (MOU) was signed by the DDPM, Ministry of Interior, and Office of Basic Education Commission (OBEC) to establish cooperation for capacity building of educational institutions on disaster prevention and mitigation. Under the MOU, DDPM will provide resource persons and technical support to train teachers, facilitators, and students on DRR as well as collaborate on the development of guidelines, manuals and learning materials on DRR. OBEC then replicates the training to reach out to schools throughout the country (UNESCO 2007), (ADPC 2003).

The Basic Education Commission of the Ministry of Education is the lead agency responsible for promoting risk reduction education in schools. There is no independent course offered on disaster risk reduction, but the essence of this topic has been integrated into existing subjects, such as social studies, science, and health. Various school disaster education projects have been conducted in cooperation with such organizations as ADRC, JICA, UNICEF, and UNESCO.

The Thai Ministry of Education, with assistance from JICA, ADRC, and other organizations, began a pilot project in 2006 to create supplementary school books on three types of disaster: floods, landslides, and tsunamis. It has also been implementing disaster risk reduction programs at 30 schools (in three regions) that have been using these books.

Since January 2009, the Basic Education Commission has been implementing a project entitled “Personnel Capacity Building and School Children Education on Disaster Reduction” with the DDPM. Individual schools have been participating in the community activities being conducted by the DDPM and NDWC. The MoE has allowed each school to manage its own involvement with these different government agencies, and in the process has facilitated the strengthening of their partnership building skills. With only one person assigned to disaster risk reduction efforts, the Ministry of Education has little in the way of personnel to handle related activities.

In Thailand, learner development activities are co-curricular activities that encourage students to devote themselves to their communities and provide voluntary services for the benefit of society. The ‘Mr. Disaster Warning’ project teaches the specific knowledge and skills for monitoring hazards such as potential flash floods and landslides using warning tools such as simple rain gauges. The community also learns how to warn other community members using a manual siren and other appropriate means.

Challenges

1. One challenge is how to sustain the motivation and efforts towards DRRM at the central government level as well as the local level.
2. There is a need for further strengthening of knowledge and skills of local government officials on disaster risk education and public awareness. This should translate to prioritization of disaster risk management and allocation of more budget at the local governments.
3. DDPM is currently working on the policy on disaster risk education. The support of the national government is crucial in ensuring that policies and plans are enforced and implemented at all levels.
4. There is a need to have a more integrated approach for the different disaster management agencies in planning for and implementing DRR activities since it is inefficient for individual agencies to promote their own activities independently.
5. The conflict in south Thailand has resulted in displacement of thousands of school children from different ethnic minorities.

Summary of Strengths and Area for Improvement

Strengths

- ✓ The Disaster Prevention and Mitigation Act stipulates institutional arrangements as illustrated by the National Disaster Prevention and Mitigation Committee (NDPMC), chaired by the Prime Minister. The NDPMC is primarily responsible for developing national disaster risk management policies.
- ✓ The Strategic National Action Plan (SNAP) for Disaster Risk Reduction (2010-2014) includes the provision of knowledge on hazards and DRR to all levels in the education sector. The target is to complete the curriculum on DRR for primary, secondary and university levels by 2014.
- ✓ There is no independent course offered on disaster risk reduction, but the essence of this topic has been integrated into existing subjects, such as social studies, science, and health. Various school disaster education projects have been conducted in cooperation with such organizations as ADRC, JICA, UNICEF, and UNESCO.
- ✓ Learner development activities are co-curricular activities that encourage students to devote themselves to their communities and provide voluntary services for the benefit of society.



Area for Improvement

- ✓ The Ministry of Education has limited human resource dedicated for DRR which hinders the MOE's capacity to coordinate and manage disaster-related activities across the schools.

4.10 Timor-Leste

Geography and Climate

Timor-Leste can be found northwest of Australia in the Lesser Sunda Islands at the eastern end of the Indonesian archipelago. Timor-Leste includes the eastern half of the island of Timor, the Oecussi (Ambeno) region on the northwest portion of the island of Timor, and the islands of Pulau Atauro and Pulau Jaco (Index Mundi).

The climate is tropical which is hot, humid with distinct rainy and dry seasons. Wet and dry seasons vary in length from the northern and southern zones as a product of the mountainous ridge through the center of the country. Timor-Leste has three climate zones that can be delineated on the basis of topography (northern coastal and lowland zone, mountain zone, and southern coastal and lowland zone) (World Bank).



Figure 34: Map of Timor-Leste

Source: <http://www.worldatlas.com>

Disaster Risk Profile

The country is located in an area of high seismic activity and is exposed to earthquakes and tsunamis. Earthquakes are common, causing significant damage, particularly where slopes are unstable. Earthquakes can trigger extensive landslides with a negative impact on peoples' lives, livestock, roads, infrastructure, and property.

Based on the World Bank Assessment Report, pockets of housing and road networks across the nation are regularly destroyed and damaged, requiring national resources to be drawn from almost weekly to provide emergency relief and shelter and to repair roads and infrastructure (World Bank 2012).

Seasonal monsoon rains and strong winds or cyclones besiege Timor-Leste and regularly damage and destroy homes, particularly in the rural areas. The country is affected by two sets of monsoonal conditions: the north-west or wet monsoon that brings storms and flooding and the Southeast or dry monsoon that brings strong winds to the south of the island.

Timor Leste is also greatly influenced by La Niña and El Niño climate events, with La Niña shortening the dry season to one to two months only (UNDP 2008). In early to mid-January and mid-February 2008, two active phases of extreme monsoonal storm activity associated with La Niña produced localized wind, flood, and landslide, impacting agriculture, roads, bridges, and private homes in all 13 districts of Timor-Leste. In the 2008 wet season, 3,600 houses were destroyed across all the districts. The long rainy season, combined with La Niña, triggered substantial efforts from the Government and the international community to improve risk reduction preparedness in the internal displacement camps in Dili and wider communities in all districts.

The country has also been experiencing man-made hazards like the civil unrest and military disturbance since 2006 that has resulted in the destruction of most of the physical infrastructure, loss of technical people and displacement of an estimated 150,000 people (Reliefweb 2007).

The World Bank Assessment Report described 'the rebuilding process in all areas of public and private endeavor as continuing and is being delivered with considerable national spirit and governmental and community skill, despite insurmountable capacity issues' (p.6). This young nation faces many challenges on various fronts which contribute to its economic and hazard vulnerability.

Mainstreaming DRR Management

Despite being the newest country in Asia with many competing development priorities, Timor-Leste already has a National Disaster Risk Management Policy in place which was approved in March 2008. The National HFA Progress Report, however, cites some

operational limitations to the policy. For instance, Timor-Leste still has not yet established a law to translate the DRRM policy into actions and to specify the responsibility of each line ministry in disaster risk reduction efforts.

In March 2008, the National Disaster Management Department (NDMD) established a National Disaster Risk Management Policy for the next five years (2007-2012) to guide in the identification of government's development priorities, objectives and strategies. The policy includes risk analyses, vulnerability monitoring, early warning, emergency management, post-disaster research and review, recovery and knowledge development, awareness raising and human resource development. The policy outlines plans to develop DRRM programs and recognizes the need for institutional capacity building, organizational and decentralized administration of disaster risk management as well as the need for community participation, including the vulnerable groups.

Although the Government of Timor-Leste considers DRRM as a priority and supports the dissemination of DRRM policy to the district levels, the current Strategic Development Plan 2011-2030 of Timor-Leste has not explicitly reflected nor integrated DRM as one of its development priorities. Disaster Management is included in the Strategic Plan Document of MSS 2009-2012.

The NDMD, DDMC and partners from CBDRM working group are very active in providing public campaigns on DRR in all districts. They have trained local governments through training of trainers (ToT) at the district level as well as the national level. These trainers provide more training on DRR down to the community level. To date, there are around 86 government staff from relevant directorate, including DDMC and NDMD staff, who have been trained in DRR, though many of them are still not active.

Mainstreaming DRR in Education

DRR is not yet included in the overall national education curriculum. The education ministry has plans for the integration with support from UNICEF, Plan International, Save the Children and Child Fund. In the meantime, initiatives are underway. The national curriculum of fifth and sixth graders includes introduction to natural disasters under its science subject although there is no comprehensive reference on DRR actions yet.

The current DRRM plan in Timor-Leste does not focus only on schools and hospitals safety but to all public facilities in general. NDMD has organized several community-based disaster risk management (CBDRM) training courses in order to disseminate information on DRR. Messages such as the danger of cutting down trees, how to make a disaster map and how to take care of natural resources have been given to the community as well as teachers and students. To date, there has been no emergency preparedness training and mock drills given in schools and hospitals.



Challenges

1. The education ministry is said to be still investigating the right model to include DRR in the education curriculum, in which level of education, method, etc.
2. Due to lack of awareness and coordination between NDMD and relevant ministries. Information sharing among ministries is not horizontal. NDMD does not have information whether health and education ministries have a policy regarding schools and hospitals safety. It is a challenge for NDMD to mobilize the full participation the two ministries.
3. There is no policy defining the framework for DRRM in the country as well as specifying the roles and responsibilities of each relevant ministry. This lack of structure and clarity of roles has resulted in a reluctance of the ministries to invest their time in DRR work-related program.

Summary of Strength and Area for Improvement

Strengths

- ✓ The National Disaster Risk Management Policy was approved in March 2008.

Area for Improvement

- ✓ DRR is not yet included in the overall national education curriculum. The education ministry has plans for the integration with support from UNICEF, Plan International, Save the Children and Child Fund. The national curriculum of fifth and sixth graders includes introduction to natural disasters under its science subject although there is no comprehensive reference on DRR actions yet.

4.11 Vietnam

Geography and Climate

Vietnam occupies the eastern and southern part of the Indochinese peninsula in Southeast Asia, with the South China Sea along its entire coast. China is to the north and Laos and Cambodia are to the west. The Mekong River delta lies in the south.

The climate is tropical in the south and monsoonal in the north with hot, rainy season from May to September and warm, dry season from October to March. The country is characterized by a low, flat delta in the south and north with central highlands, and hilly, mountainous areas in the far north and northwest (IndexMundi).



Figure 35: Map of Vietnam

Source: <http://www.worldatlas.com>

Disaster Risk Profile

Located in the tropical monsoon area in Southeast Asia, Vietnam is one of the most hazard-prone countries in the Asia Pacific region, experiencing tropical cyclones which subsequently lead to flood and landslide disasters. An average of six to ten tropical cyclones hits Vietnam every year affecting the country's agricultural production and other productive sectors of the economy.

The storm season lasts from May to December with storms hitting the northern part of the country in May through June and moving gradually south from July to December. Occasional drought and forest fires also pose significant threats to millions of households and their livelihoods.

Storms/cyclones, floods and drought are the top three natural hazards that have produced the most impact in terms of number of people killed, affected and estimated economic cost over the past ten years.

Table 15: Hazards in Vietnam, 2004-2013

Hazard		Freq.	No. Killed	No. Affected	Total Damage (USD '000)
Drought	Drought	1	-	410,000	42,120
Epidemic	Unspecified	1	16	83	-
	Viral infectious diseases	2	69	51	-
Flood	Unspecified	1	3	280,000	-
	Flash flood	7	253	728,247	167,500
	General flood	25	900	3,808,787	1,605,702
	Storm surge/coastal flood	2	129	566,130	480,000
Mass movement wet	Landslide	2	36	1	-
Storm	Unspecified	2	14	7,505	-
	Local storm	2	29	63	10,000
	Tropical cyclone	26	1,296	8,356,472	3,195,250

Source: EM-DAT: The OFDA/CRED International Disaster Database, data retrieved 15 October 2013

Vietnam is among the top five countries worst affected by climate change with a large proportion of the population, infrastructure and economic production located in coastal lowlands and deltas (World Bank 2007).

Current environmental issues influence the vulnerability of the population to hazards and effects of climate change. Logging and slash-and-burn agricultural practices contribute to deforestation, soil degradation, and water pollution, and overfishing threatens marine life populations. Groundwater contamination limits potable water supply, and growing urban industrialization and population migration are rapidly degrading the environment in the major cities of Hanoi and Ho Chi Minh City (IndexMundi).

Mainstreaming Disaster Risk Management

The National Strategy on Disaster Prevention, Response and Mitigation was developed in 2007 as the key policy document for the country's disaster risk management. The National Strategy's objectives focus on enhancement of forecasting, improvement of building standards, infrastructure and communication facilities, strengthening of search and rescue capacity, improvement of public awareness, and consolidation of DRRM organizational structures.

By the time the government of Vietnam submitted a report to the Hyogo Framework Agreement in 2009, considerable strides have been taken to mainstream DRR within national, sectoral and provincial socio-economic development planning frameworks. The country formulated its first DRRM law in 2012.

Based on the country's HFA progress report (for 2009 to 2011), all ministries have developed an action plan for the integration of DRM within their respective sectors, and all provinces have developed their own plans as well. Majority of sectoral development plans and socio-economic development plans at the national and provincial level (for 2011-2015) have integrated some elements of DRRM. There is a need, however, for clear legislative guidance and tools to ensure proper integration of DRM measures in planning at the local levels. The HFA progress report also noted that there is a lack of consultation across sectors.

Being vulnerable to multiple hazards, Vietnam is divided into seven recognized hazard zones where rural poor and vulnerable populations that are disproportionately affected by these disasters reside. DRR policy documents and measures take these into consideration, ensuring prioritization of disaster-prone areas.

The Central Committee of Storm and Flood Control (CCSFC) was established by virtue of Decree No. 168-HDBT of 19 May 1990 of the Council of Ministers. It is an inter-ministerial institution composed of representatives from all key ministries tasked to develop mechanisms on typhoon and flood regulation and mitigation. Committees and sectors at the provincial, district and village level were also established.



Mainstreaming DRR in Education

As of the latest national HFA progress report, DRR education is not formally integrated with any school curriculum. Efforts have been limited to projects led by the Vietnam Red Cross and international NGOs which had initiatives on the inclusion of DRR into the primary and secondary school curricula with pilot training on disaster preparedness for school children.

To date, key concepts and simple guidelines for main types of hazards are incorporated in subjects such as popular science (primary level) and geography (elementary level). More DRR topics will be included in the school curriculum after the Ministry of Education and Training's strategy for DRR in education has been approved.

Efforts of various organizations facilitate the synthesis of existing curricula, lessons and experiences, pilot testing and training of trainers. The Ministry of Education and Training (MoET) with UNESCO support is implementing an education in emergency (EiE) project and plans are underway for the integration of climate change education into the sustainable environment education program that is targeted for establishment by 2015.

A Guidebook for Flood and Storm control was published and disseminated nationwide for use as training materials. Vietnam's community-based DRR projects have targeted children who are not attending school for awareness-raising on disaster preparedness. These children are taught to prepare risk maps, locate evacuation areas, protect themselves from drowning, help other children, and communicate disaster preparedness to other community members. One successful program cited is the conduct of swimming lessons for children living in flood-prone areas such as the Mekong Delta and other central provinces (ASEAN, 2011).

Challenges

1. The education sector in Vietnam has an over-burdened curriculum which poses a heavy workload on students. The introduction of a new subject to focus on the various aspects of DRR may be more of a constraint than an opportunity.
2. There is also a lack of guidelines and tools on how to integrate DRR and climate change into the syllabus or curriculum, to ensure their appropriateness to the local context and relevant hazards.
3. There is a gap in financial resources for the activities required in the DRR education and for DRR in general.

Summary of Strengths and Areas for Improvement

Strengths

- ✓ The National Strategy on Disaster Prevention, Response and Mitigation was developed in 2007 as the key policy document for the country's disaster risk management.
- ✓ A successful program cited is the conduct of swimming lessons for children living in flood-prone areas such as the Mekong Delta and other central provinces.

Areas for Improvement

- ✓ There is currently no policy for mainstreaming DRR in education.
- ✓ As of the latest national HFA progress report, DRR education is not formally integrated with any school curriculum. Efforts have been limited to projects led by the Vietnam Red Cross and international NGOs which had initiatives on the inclusion of DRR into the primary and secondary school curricula with pilot training on disaster preparedness for school children.

While it is apparent that each country is on different levels of integrating and mainstreaming DRRM in its respective curriculum, it is noteworthy how each country is taking a step forward to promote DRRM.

The following chapter provides notable examples of DRRM-related projects conducted by selected development organizations.



CHAPTER 5:

INVOLVEMENT OF SELECTED ORGANIZATIONS IN DRRM PROJECTS IN THE EDUCATION SECTOR

Creating and sustaining school-based disaster risk management is a long-term process that needs a strong collaborative base. All 48 schools included in this publication have created school-based DRRM programs which heavily rely on the support of stakeholders. These stakeholders are composed of the local government units, school staff, parents and teachers associations, students, civil society, NGOs and INGOs. Stakeholders play an essential role in piloting and then sharing activities with governments for implementing nationally to achieve greater scale and impact. They work together to generate funds, give technical support and assist in policy making for school communities. Collaboration is key to the success of DRR and DRM initiatives in schools.

This chapter showcases selected organizations and stakeholders' involvement in shaping community participation and collaboration, governance, networks, and DRR learning and innovation in school communities. Contact information of some organizations is also made available. Please refer to **Annex 2**.



5.1 Participation and Collaboration

In times of disasters, the first line of defense of school communities is the school's DRR Management Group (SDRRMG), which is organized by the school head or the DRR Coordinator in collaboration with local government units. It is composed of teachers, students, parents and local officials. The Philippines has several examples of good collaboration among schools and local government through the SDRRMC. In the Bicol region, local government units work together with the school officials in the development of an effective evacuation plan during disasters. While they are called differently in different countries, school's DRR Management Group (SDRRMG) have similar functions, which is to take the lead in the planning, implementation, monitoring and evaluation of DRR programs in schools.

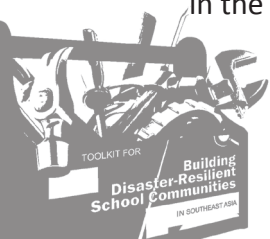
In the Philippines and some countries in Southeast Asia, schools are designated as evacuation centers. The local government units and the school head work together to plan out evacuation center procedures and which barangay (village) would be assigned to what school for fast and efficient evacuation of affected villagers. In Japan, school evacuation drills include not only the students but also members of the community near the schools. School staff and students work closely together to conduct evacuation drills to ensure that everyone will participate.

5.2 Governance

The Ministry of Education (MOE) plays an important role in the implementation of DRR-related governance measures for school communities. When natural and man-made hazards occur, the decision and authority to suspend classes and close schools rest on the MOE.

The issuance of a Memorandum Circular in support of the integration of DRR in the school curriculum ensures the institutionalization of this mainstreaming strategy. Most of the schools featured here integrate DRR and climate change adaptation (CCA) in science, math, values education and social studies. Eight out of the 11 Southeast Asian countries have actual policy issuance from their respective MOE regarding this. In the Philippines, Thailand and Laos alternative delivery modes are used in times of emergencies. During times of calamities, emergency learning spaces are set up so that classes are not disrupted and students are continuously learning.

DRR has been integrated in the curriculum and learning materials of the alternative learning system (ALS) or non-formal education program which is an alternative pathway of basic education for out-of-school youth and those who have dropped out of school or have not had access to formal basic education. DRR concepts have also been integrated in the environment module used for non-formal education.



The e-IMPACT and EASE modules were developed by SEAMEO INNOTECH for the Philippine Department of Education as flexible learning options or alternative delivery modes (ADMs) characterized mainly by self-directed learning. The ADMs were designed for students who are at risk of dropping out and/or unable to go to school due to several reasons: illness, work, limited funds, bullying, emotional and psycho-social problems, and in times of emergencies, among others.

The following are some examples of the roles of partner NGOs in participation and collaboration and governance in the programs and projects they have implemented in their school communities.

Project 1:

Regional Fit for School Program with Focus on Pandemic Preparedness

German Agency for International Cooperation (GIZ)

To strengthen Cambodia's pandemic preparedness, GIZ partnered with the School Health Department of the Ministry of Education Youth and Sport (MOEYS) to implement an innovative school health concept using evidence-based and cost-effective interventions.

The Regional Fit for School Program was a three-year research and development initiative by GIZ in partnership with the SEAMEO INNOTECH. Its implementation has recently been extended to allow the integration and complementation of relevant components such as hygiene, water and sanitation, and school health and nutrition in primary schools.

The program adopts the Fit for School approach, which has been widely successful in the Philippines, to the specific national situations in Cambodia, Indonesia and Lao PDR. Its simple templates can be implemented in a variety of settings, allowing for relatively simple scale-up, sustainability and expanded program reach.

The Fit for School Program was designed to equip schools and students with the capacity to acquire and maintain proper hygiene behaviors that, in turn, will ensure their health, reducing their risk for disease transmission.

Background	Access to safe water and hygiene behaviours are keys to pandemic preparedness and prevention, especially in public places such as schools. Since they serve a population group that is particularly vulnerable to pandemic diseases, schools are a strategic venue for promotion of basic hygiene practices. Children can contribute to the rapid spread of epidemics through communities, schools and family networks. Moreover, hygiene behaviours are best taught and practiced at an early age. As the example of the Essential Health Care Program demonstrates, school health programs can be effective, even in resource-poor settings. They can deliver extremely cost-effective, evidence-based interventions that have a significant impact on child and community health. Hand washing with soap can reduce rates of diarrhoeal diseases by 31 to 47% and respiratory infections by 30% (GIZ n.d.).
Activities	• Group handwashing with water and soap • Toothbrushing with fluoride toothpaste • Bi-annual deworming
Results	Tooth brushing with fluoride toothpaste and bi-annual deworming also improve children's general health. The first-year evaluation in the Philippines revealed that one of the program's strongest impacts was in improving children's body-mass index – one of the best indicators for general health status – making children more resilient to other diseases and lowering transmission rates.
Features	School health programs are the most appropriate strategy for a population-based approach, reaching the entire school age population and having the potential to reach out to the household and community level. With high enrolment rate and a concomitant completion rate, school health programs have a potential for broad impact. Only a combination of health education and routine hygiene practice can lead to sustained behavior change. Multi-sectoral by nature, an institutionalized school health program that creates functional governance structures and communication channels creates entry-points to implement further school-based pandemic preparedness measures, such as regular consultations between school heads and local health services or the reporting of key syndromes and high rates of absenteeism.



Expected outcomes	1. A governance framework for the proposed school health program has been developed and it has been aligned with the national pandemic preparedness plan. • The MOEYS and the Ministry of Health (MOH) demonstrate a successful example of a multisectoral approach towards pandemic preparedness, which may also serve as a model for other initiatives between MOH and other line ministries. 2. Pilot schools and school staff (teachers/school administrators supported by school health personnel) are implementing a school health program and contributing to strengthen pandemic preparedness and resilience. • School staff and health personnel increase their knowledge and awareness about pandemic diseases, disease prevention and recognition of unusual syndromes. Tools/templates for case detection and reporting are tested. The health system receives active support from the education sector.
	3. Parents and the community are actively involved in the program's implementation, including monitoring. • Through their involvement, parents and the community contribute to the program's sustainability and are more likely to adopt behavior change at the household level. 4. Children and households have improved their behavior regarding prevention of communicable diseases through hand washing with soap. Children and the community at large become more resilient towards pandemic diseases.
Participating Countries (2010)	Cambodia, Indonesia, Lao PDR, Philippines



Project 2:

Learning Institutions as Zones of Peace

United Nations Children's Fund (UNICEF) and Balay Rehabilitation Center Inc.

Learning Institutions as Zones of Peace (LIZOP) aims to model a mechanism that will ensure that children in conflict-affected areas are able to access education regularly in a safe and secure environment. This is parallel to current efforts for EiE initiatives. Key actors and institutions sign and abide by a code of conduct and various organizations are mobilized to help create a protective and nurturing environment for children. Government agencies issue policy guidelines and programs to sustain the protective mechanism.

Background	Barangays Tina and Tapihan are two villages supported by UNICEF through the Learning Institutions as Zones of Peace (LIZOP) Project implemented by the NGO Balay Rehabilitation Center. Balay operates in many conflict-affected areas in Mindanao. Its work to promote 'community healing,' empowerment and development through its 'children as zone of peace' framework has been documented by the University of the Philippines' Department of Community Development as a model for community-based approach to social intervention and peace organizing.
Activities	• Engagement of duty bearers – community leaders, parents, teachers, state agencies, parties on opposite sides of a conflict – to support a 'declaration' to promote and protect children's right to education. • Signing out by key actors and institutions to abide by a code of conduct. • Creation of protective and nurturing environment for children by various stakeholders. • Issuance of policy guidelines and programs to sustain the protective mechanism.



From Temporary Learning Spaces to Rebuilt Schools

Activities	• Since 2010, a host of rehabilitation support and intervention activities has been implemented in the village. One such project is UNICEF's Education in Emergencies initiative to build safe learning spaces where children can attend psychosocial improvement and education-related activities managed by trained community volunteers. This is envisioned to help transition children when their regular schools eventually re-open. • Initially, the schools in Tina and Tapikan would become annex schools of Lapok Elementary School, located in a neighboring village. (For the school year 2011-2012, Tina had Grades 1 and 2 while Tapikan had only Grade 1. Older school children had to enroll in nearby schools.) • Expansion of offered grade levels and the schools will then cease as mere annex schools and return to their former status.
Results	• The LIZOP project was implemented with full support from the leaders, parents, volunteer-teachers and the school-in-charge of Lapok Elementary School. • Eventual declaration of the schools as zones of peace, buoying up the hope that Tina's and Tapikan's children will be educated right in their own protected school. • While the LIZOP has been concluded, the Education in Emergencies Project continues to be implemented in Barangay Tina. • With newfound support from the municipal mayor to fund one volunteer teacher and the prospect of having one permanent teacher assigned to the school, Tina Primary School last 2 July 2012 prepared to open its doors once again by accepting enrolment for Grades 1, 2 and 3.
Participating Country	Shariff Aguak, Maguindanao in Southern Philippines



Case Story 22: Learning Institutions as Zones of Peace (LIZOP), Philippines

On 14 February 2012, various stakeholders, led by the community's barangay captain Abubakar Bido and Kagawad Kahal Bido, affixed their signatures to such a declaration in ceremonies held in Barangay Tina. The declaration started out: "We, children, parents, teachers, ustadzes (Muslim teachers), barangay leaders, and all residents of Barangay Tina, Shariff Aguak, are united in creating, declaring and strengthening Tina Primary School and all learning institutions in our barangay as zones of peace. These zones of peace are spaces and areas that care for the welfare of all children and put primacy in the protection and upholding of their rights; promote quality and continued education for all children at all times and situations; mould generations of peace-loving children who value understanding, multicultural respect and acceptance..."

While acknowledging that some duty bearers still need to deliver on their commitments, Yul Olaya, UNICEF EiE specialist, says he is pleased with what has been accomplished to date. As project catalyst, UNICEF has been able to bring together all relevant parties to sit down and plan for their children. "Our interventions here are just secondary as these are all temporary. We're not here to stay but the impact we've had on their governance will hopefully be lasting. They are now able to identify issues that affect them, call a meeting to talk about them, and, as one community, do something about them. For me, that is significant."

5.3 Capacity Building

Although MOEs are doing their best to help schools, they still need the help of civil society to mainstream DRR education in different public schools in Southeast Asia. In order to sustain projects and programs, stakeholders should have the knowledge and skills to effectively implement and sustain any project. NGOs have the human and financial resources to aid school communities in capacity building. Some schools in the Philippines and Japan engage in Training of Trainors and capacitate other schools to conduct DRR education using training modules. Student and teachers, with the help of NGOs and INGOs, work together to help train the nearby communities and schools. It is important for INGOs to partner with local NGOs to ensure that monitoring and evaluation is being done on the ground.



Project 3: **Disaster Risk Reduction Education Program**

People's Initiative for Learning and Community Development (PILCD)

The project is an enhanced alternative learning system program that features the mainstreaming of topics and activities on DRR via two approaches: 1) based on the Alternative Learning System- Achievement and Equivalency (ALS-A & E) focused learning program that is classroom-based; and 2) community-based training and education activities on DRR that are participatory and action-oriented.

Background	This project specifically addresses: (1) the lack of access to information and learning opportunities on DRR; (2) the low level of functional literacy and education which significantly affects the knowledge, skills and attitude on understanding and dealing with disasters; (3) the lack of skills on disaster preparedness and responsiveness; and (the) absence of Disaster Risk Reduction Plans at the barangay level.
Activities	• Center-based and community-based learning sessions on: environment, climate change, typhoon, earthquake, landslide; disaster risk reduction. • Training courses on the development of Family Disaster Plans at ALS learning centers and partner communities. • Participatory action research and activities on hazard mapping, community disaster history, vulnerability assessment and disaster risk reduction planning. • Disaster risk reduction planning of barangay Pasdong and Naguey in the municipality of Atok, Benguet, and integration of the plan in the Local Development Plans and Actions of the local government unit. • Provision of Basic Emergency Response Kit to the local government units and ALS learning centers. • Adaptation, printing and dissemination of learning and teaching materials on DRR: facilitators' guide, learning modules, comics, posters, and video animations. • Training of ALS mobile teachers/ facilitators and ALS education supervisors in facilitating DRR- related modules and the development of DRR lessons and session.

Results	• The officials of the local government units of Naguey and Pasdong and 257 out-of-school youth/adults in La Trinidad and Buguias have attended and completed learning activities on climate change, disasters, and disaster preparedness. • 95 community members of Naguey and Pasdong attended community learning sessions on the environment, climate change, disasters, and community based disaster risk reduction planning. • 40 mobile teachers as Benguet facilitators' pool on DRR integrated alternative learning system. • 73 community members of Naguey and Pasdong and 75 ALS learners participated in basic rescue and first aid training sessions. • 55 community members of Naguey and Pasdong familiarized with RA 10121 or the Philippine Disaster Risk Reduction and Management Act of 2010. • Localized DRR learning and teaching materials: comics, posters, and video animation on disaster preparedness and waste management. • Three ALS learning modules on disaster preparedness and first aid. • Community generated hazard history, capacity and vulnerability data, risk reduction plans, and contingency plans.
Major Outcomes	• ALS and community learners have increased awareness on the nature and impacts of disasters and their relation to climate change and the environment. • Individual and household project participants gained better and proactive capacities to prepare for and respond to disasters. • The behavior and collective capacity of the community of Pasdong and Naguey on community-based disaster risk reduction and management was developed. • Center-based and community-based learners have improved access to information, materials, and learning opportunities on disaster risk reduction (DRR). • ALS mobile teachers and service providers gained enhanced skills in integrating disaster risk reduction in their learning sessions. • The local government units of Pasdong and Naguey achieved better organizational and logistic capacities in building their community's resiliency to hazards and disasters. • Coordination and cooperation between community members and local officials have been strengthened.
Participating Country	Philippines



5.4 Learning and Innovation

With the help of partnerships and networks, schools are able to create a range of innovative programs to make their schools resilient. One example is Soumpouthong Primary School, which is situated near a river in a rural part of Thailand thereby rendering it susceptible to seasonal flooding. Through the collaborative efforts of the school staff, students, their parents, the monastery, and local experts, innovative solutions were developed to address the shortage of food and clean water during floods. They developed a simple water filtering system, a hydroponics garden, and a solar oven. In Vietnam, the officials of Ly TuTrong Secondary School were concerned with the number of children drowning every year because of floods. The school board, with the support of the PTA and community leaders, created a compulsory swimming class which equipped the students with vital skills for survival and safety.

The following are examples of other innovative ideas from partner organizations.

Project 4:

Disaster Risk Management Innovative Ideas

World Society for the Welfare of Animals (WSPA)

The First Concepts in Animal Welfare (FCAW) programme envisions that all children have the opportunity to participate in animal welfare education (AWE), enabling them to become responsible, active citizens in their communities. DRM is one of the components of WSPA animal welfare curriculum.

The strength and innovation of the WSPA Disaster Risk Management programme rely upon its holistic approach towards raising awareness on the importance of including animals in disasters plans and building the capacity of local stakeholders to do so at all levels of society. Through a range of programmes, the organization trains governments, future veterinarians, teachers and communities.

Background	All WSPA education programmes use the same training approach based on the Human Behavior Change (HBC) methodology, consisting of experiential learning and student-centered methodologies. Instead of the traditional lectures, the trainers/teachers take on the role of facilitator to encourage the learning process. Through participatory activities, students develop their own conclusions, taking ownership of the issues, which is more likely to lead to long-term behavior change.
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Activities	• The FCAW Programme targets children in formal education since they can greatly influence animals in disasters through intergenerational transfer and by becoming good citizens of tomorrow with sound decision-making skills to ensure that their families are prepared for disasters, and animals are integrated in DRRM. • Targets in-service and pre-service teachers of 5- to 16-year-old students. • In Thailand, the programme is being implemented in partnership with the education department of the Bangkok Metropolitan Authorities (BMA), and education faculties of Chulalongkorn, Srinakarin Wirot and Rajabhat Chandarkasim universities. • In Vietnam, a Memorandum of Understanding (MOU) with the Hanoi Department of Education and Training (HN DoET) was signed in May 2012. The four-year partnership will include: 1) capacity-building of junior secondary school teachers in Hanoi and HN DoET in-house trainers in teaching animal welfare education; 2) studying the HN DoET curriculum for junior secondary schools with the view of infusing AWE into appropriate subjects; and 3) the issuance of an official instruction by HN DoET to integrate animal welfare education into appropriate subjects. This will expose students in HN DoET junior secondary schools to AWE, including DRRM. • A project for pre-service teachers with the Hanoi Teacher Education College is due to start soon. • Development of two activity books that include fact sheets, lesson plans and worksheets, which can be integrated in multiple subjects relevant to the locality
	Livestock Emergency Guidelines and Standards (LEGS programme) • Any people in the ASEAN region depend on livestock for their livelihood. Disasters impact not only human lives but animals' welfare as well. There is a growing realization that disaster response should protect both people's well-being and their source of livelihood. • The LEGS provide a set of international instructions and benchmarks for the design, implementation and assessment of livestock interventions to assist people affected by disasters. LEGS are a formal 'companion' to the Sphere Project's Humanitarian Charter and Minimum Standards in Humanitarian Response. • WSPA has trained ASEAN delegates, and the governments of Vietnam, Thailand and Myanmar on how to use LEGS guidelines in order to integrate protection of animals into their national disaster plans.
Participating Countries	Thailand, Vietnam, Myanmar



Project 5:

SHINe (School Hydrological Information Network) Increasing Children's Awareness and Participation in Disaster Risk Reduction

Save The Children (Project ENCORE), Bulacan's Provincial Disaster Risk Reduction Management and Pampanga River Basin Flood Forecasting and Warning Center/PAGASA

SHINe is a program aimed at addressing the issues of global warming, particularly focusing on the awareness on hydrometeorological –related disasters as a result of changes in the climate. This supports the Philippine Department of Education (DepEd)'s thrust on “climate change-enhanced curriculum” and consistent with the principle that disaster awareness should begin in school.

Background	Shine's main objective is to enhance the disaster awareness of school's populace, prevent loss of life and protect property by achieving and maintaining a high level of school preparedness. It works hand-in-hand with the local government units Disaster Coordinating Council, particularly with the community- based flood warning system.
Features	• School-based hydrometeorological-related disaster monitoring system • School-based hydrological (rain-fall, river stage, tropical cyclone tracking, etc.) observation network mainly for disaster-preparedness and awareness, database for early warning purposes, research purposes • Support for community information

5.5 Enhancing Community Resilience through Child-Focused DRR

Child-centered DRR is crucial in implementing initiatives that aim to develop prepared and resilient communities. While DRR is traditionally thought of as within the scope and charge of adults, it has been found that involvement of children provides them an opportunity for healing and recovery, as well as recognition of their inherent rights. The following projects illustrate the efforts of NGOs to partner with government and the school community as they work with children and youth in promoting community resilience.

Project 6: The Regional Resilience Project

World Vision

The Regional Resilience Project was initiated by World Vision Humanitarian and Emergency Affairs (WV HEA) in Asia Pacific region. In Indonesia, tools were developed as guide for the integration of DRR in World Vision's disaster management framework. In the Philippines, and banking on WV's experience in child participation, a research was conducted that led to the development of a DRR approach which is Child-Focused DRR. A framework for this was drafted, and training modules, appropriate for children and one for adults, now guide WV staff in their CF DRR activities.

Background	The regional resilience project was initiated by World Vision HEA in Asia Pacific and aims to mainstream community-based disaster risk management (CBDRM) and community resilience in Asia Pacific through the development of DRR tools that can be shared with all national offices. This was piloted in two WV National Offices: Indonesia and the Philippines.
Activities	• Identification of most vulnerable community • CFDRR training for staff, partners and community leaders, school teachers, church leaders, midwives, youth council • What made it meaningful to children: ...through their participation, children are given the chance to have a voice and identify those that threaten their safety and their well-being • Children are well aware of their rights in their community especially in terms of protection from hazards in their environment
Results	• Adoption of child-focused DRR plan • Barangay Council Executive Order issued in two out of six barangays • SK Leaders initiated tree planting/growing (each child will plant 2-3 trees that they will take care of for years) • Community-Managed Savings and Credit Association (COMSCA) • Children were encouraged to save provision of potable water in Poblacion Bunawan (child-initiated) – the local government unit (LGU) has initiated bio sand water system, then the Area Development Program (ADP) also provided rain water collectors as initial part of the implementation of the action plan • Barangay Concepcion had access to potable water after ten years – a project that was initiated by the youth to address the hazards of water-borne diseases and malnutrition
Participating Countries	Philippines, Indonesia



Project 7: Development of School-Based Disaster Response, Preparedness and Recovery for Education in Emergencies System in Central Mindanao (DRAPEES)

Community and Family Services International, UNICEF, LGU, DepEd, Department of Social Work and Development (DSWD)

A component of the Child Rights Project of UNICEF is known as the “Development of a School-based Disaster Risk Reduction, Preparedness and Education in Emergencies System” or DRAPEES. The project aims to increase resiliency of the educational system and ensure children will have continuous access to basic education especially in times of emergencies through the provision of a package of services that include (a) capacity enhancement on DRRM and EiE; (b) setting up transitional learning spaces (TLS); (c) construction of water, sanitation and hygiene (WASH) facilities; (d) repair of damaged school classrooms; and, (e) prepositioning and distribution of learning supplies and materials for schools, teachers, and pupils.

Background	The peace and order situation in some areas in Mindanao has been volatile throughout the years. With the instability of the threat of internal conflicts within the region, children witnessed violence and experienced fear and uncertainty. They saw their families torn apart, as they left their homes in terror, leaving behind family and friends. They stayed in camps for internally displaced population (IDP) in which the conditions were less than ideal and offered little opportunity for growth. Classes were suspended and they had to stop schooling. The project aims to increase the resiliency of the education system in responding to and preparing for disasters to ensure continuous access to basic education of children in times of emergencies.
Activities	• Coordination and project orientation • Minor repair of school structures and construction of WASH facilities • Kids’ Camp on EiE and Disaster Preparedness • Training of teachers and volunteers; creation of a School Disaster Risk Reduction Committee (SDRRC) • Capacity enhancement on DRRM and EiE

Learning Insights	- Schools, teachers and children are effective channels for disseminating information on EiE and DRR. The Kids Camp provides opportunity for children to express their views on Disaster Preparedness and EiE. - Based on the assessment and initial school profiling of project staff, factors affecting the learning capabilities and atmosphere of the learners include limited number of teachers, asatidz (Arabic teachers); lack of classrooms; limited learning facilities; and absence of hygiene and sanitation facilities like toilets and source of potable water. - Mainstreaming DRR and EiE in the education system involves participation of different actors and education stakeholders from the community, barangay and municipal LGUs and Parents-Teachers Association (PTA) members. The activation of local DRRMC structures and capacity building of the leaders is important.
Participating Countries	Maguindanao and North Cotabato in the Philippines

Project 8:

SCALE UP, BUILD UP: Strengthening Local Alliances and Advocacy and Empowering Champions on Disaster Risk Reduction

European Commission, Accion Contra Faim, CARE, Oxfam, Plan, Christian Aid, Handicap International

Scale Up, Build Up projects aims to support the implementation of the Disaster Risk Reduction Management Act (Republic Act 10121) of the Philippines by improving access to information and increasing the institutional capacity of DRR stakeholders to increase resilience of high risk communities in the country. The project builds on the European Commission on Humanitarian Aid (ECHO)'s numerous efforts in disaster preparedness and empowering vulnerable communities in the country. It is to be implemented across six regions in the Philippines, namely, Cordillera Administrative Region (CAR), Region II- Cagayan Valley, Region V- Bicol Region, Region VIII- Eastern Visayas, Region XIII- Soccskargen, and Region XIII- CARAGA.

The project envisions that communities from the project regions would be better equipped to handle recurring disasters and better plan sustainable disaster preparedness and mitigation activities by working closely with their local government units, civil society organizations (CSOs), and the education sector.



Background	Objective: To support the implementation of the National DRRM Law, Framework and Plan by improving access to information and increasing resilience of high risk communities in the Philippines. Location of action: • Cordillera Administrative Region (CAR) Benguet - Bokod, Itogon; Mountain Province - Tadian, Bauko • Region II (Cagayan Valley) Isabela - Jones, Benito Soliven • Region V (Bicol) Camarines Sur - Calabanga, Canaman, Bonbon, Magarao; Camarines Norte - Talisay; Sorsogon - Casiguran, Barcelona, Juban • Region VIII (Eastern Visayas) Western Samar - Sta. Margarita, Daram, Gandara, Tarangnan; Northern Samar - Biri, Capul, San Antonio; Southern Leyte - Saint Bernard • Region XII (Socargen) North Cotabato - President Roxas, Arakan, Magpet, Atipas, Matalam • Region XIII (Caraga) Surigao del Norte - Placer, Malimono, Mainit, Socoro, General Luna; Agusan del Sur - Talacogon, San Luis, Lapaz • Agusan del Norte - Buenavista, Las Nieves, Remedios Romualdez Beneficiary Selection Criteria: • Target area is vulnerable and prone to multi-hazards and natural disasters • Existing projects and relationships with local stakeholders have been established • Receptiveness and willingness of municipalities and a good track record of sustaining projects from previous donors and aid agencies • Presence of Civil Society and vulnerable groups with capacity to engage the DRRM councils and in DRR planning • Total number of direct beneficiaries: 56,829 Specific objective: To increase the resilience and reduce the vulnerability of local communities and institutions through the establishment of sustainable dissemination and replication mechanisms for community-based DRR models
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Activities	KRA 1. Improved mainstreaming of inclusive community-based disaster risk reduction in plans and budgets of local government units. • Orientation seminars on DRRM Law, Framework and Plan • Training on inclusive community-based disaster risk reduction management (CBDRM) in schools, barangays, municipalities, provincial and regional levels • Information dissemination KRA 2. Increased institutional capacity of DepEd to integrate disaster risk reduction and school safety initiatives into public school curriculum. • Research-scoping study to identify gaps in current DRR materials and policies • Civil society participation in the strategic planning of DRMO at national level • Coordination with DepEd in integrating CBDRM in public school curriculum KRA 3. Increased knowledge sharing and dissemination of disaster risk reduction/climate change adaptation resources and advocacy tools to relevant stakeholders • Develop a website for DRR/e-DRR library • Compilation of DRR materials and converting it to digital format • Regular consultations and coordination
Participating Countries	Philippines

Project 9: Community-Based Disaster Management Training

Citizen's Disaster Response Center (CDRC)

The project is part of CDRC's program on community-based disaster management (CBDM) training. One of the key elements of the program is prioritization of vulnerable groups which include children. CBDM was developed to build disaster resiliency with great emphasis on participation of the mostly affected sectors. It is a ladderized training composed of four subsequent topics and is usually done in three to four days.



Background	• Citizen's Disaster Response Center is an NGO that pioneered and continues to promote community-based disaster management in the Philippines. • Typhoons Ondoy and Peping left 100,000 people from over 900 barangays in evacuation centers. Among the sectors that CDRC aimed to serve are the children who were significantly affected.
Activities	Community capability-building on disaster preparedness: community-based disaster management training • Formation of disaster preparedness committee (DPC) under existing community organizations • Hazard mapping • Public warning systems • Equipping of community members in first aid and rescue Special activities that provide basic education on disaster management and psychosocial activities for children: • Disaster Busters: Children's Art Workshop • Play sessions for children aged 6-9 provide a way for them to express their experiences, feelings and knowledge in a fun and healing way Activities which enhance the participation of community organization in community-based and child-focused disaster management: • Disaster Management Orientation Pambata • Training on evacuation center management (ECM) - focuses on child protection; emphasize the importance of providing Child-Friendly Schools (CFS) in evacuation centers where children can play and learn; keeps children and youth safe, preoccupied, away from damaging behavior like drugs, alcohol, etc. • Training on child protection in emergencies • Training on UN Convention on the Rights of the Child



“I hope that every member of the community will realize the importance of the school in the lives of their children and in the future of the community so that they will dutifully do their part in helping the school to be a better and safer place for the children.”

Mrs. T. Sapal, School Principal, Lomopog Elementary School,
North Cotabato, Philippines

A partner of the Balay Rehabilitation Center, Inc.



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	Dato Pemancha Saging Ukong's Primary School	Chan Ben Fui	School Head	N/A	admin@ukong.moe.edu.bn
Cambodia					
	PrekTaroth Primary School	Samang Yin	Principal	PrekTaroth Village, SangkatprekTasek, Khan RusseyKeo, Phnom Penh City	N/A
	Neak Oulenha Moha Pheakdat Hun Meay Toul Tou-pong	Poutara Pen	Deputy School Director	Bakheng Village, Sangkat Prek Leap, Khan Russey Keo, Phnom Penh City	N/A
	Hun Neang Toul Tumpong Primary School	Channareth Sorn	School Director	Toul Tumpong Chamcarmorn Phnom Penh	N/A
Indonesia					
	SDN 2 Parangtritis	Surnarno, S.Pd.	Principal	Maningan, Parangtritis, Kretek, Bantul, Yogyakarta	N/A
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	Karakuwa Junior High School	Yasuo Komatsu	Principal	North Easternmost of Miyagi, Kesennuma City	N/A
	Koharagi Junior High School	N/A	N/A	North Coast of the City, Border of Iwate prefecture	N/A
	Nakai Elementary School	Naoto Matsumoto	Principal	North East of Kesennuma City, Karakuwa Peninsula	N/A
	Matsuiwa Junior High School	N/A	N/A	Northeast of Miyagi Prefecture, Kesennuma City	N/A
	Kesennuma City Board Of Education	Yukihiko Oikawa	Deputy Director	Northeast Japan, Kesennuma City	N/A
Lao PDR	KM38 Dhamma Centre	Ms Thongkeo Khamvongsa	Principal/ School Director	Km38 Route 13 South, Parkgneum District, Vientiane, Lao PDR	sinlasone@gmail.com
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	Sathit Secondary School	Mrs Bounmak Souligna	Principal/ School Director	Saphangmuk Village, Xaythany District, Vientiane Capital Laos	sathit.dongdok@yahoo.com
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Malaysia	Sekolah Kebangsaan Tasek Permai	Madam Rokiah binti Bakar	Principal/ School Director	Simpang Ampat, Pulau Pinang,	pejabatpbpa4018@gmail.com/izati_ijati@yahoo.com
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Myanmar	State High School NO. 1 Kungyangon	Daw Saw Phone Kyi	Principal	Kungyangon Township, Yangon Region	N/A
		Daw Than Than Aye	Teacher Coordinator		
Philippines	Miriam College High School	Mr Edizon Angeles, PhD.	Principal/ School Director	Katipunan Avenue, Loyola Heights, Quezon City, 1108	gvillanueva@mc.edu.ph
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		Mrs Elenita V. Tucio/ Mrs. Mirasol H. Aquino	Teacher Coordinator		
	Bonuan Buquig National High School	Ms Maria Linda R. Ventenilla (Principal IV)	Principal/ School Director	San Gabriel Street, Bonuan Boquig, Dagupan City, Pangasinan	kohlberg42@yahoo.com/mlnv929@yahoo.com
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	Abellana National School	Dr Severina B. Chin Ed. D.	Principal/ School Director		Osmena Blvd, Cebu City, Cebu	abellanans@yahoo.com
		Ms Cydtheresa V. Gabor, MPA	Teacher Coordinator			
	College of the Immaculate Conception-Grade School	Ms Emilia C. Joson	Principal/ School Director		Lakewood Rd. Sumacab Estate Cabanatuan City	etdonell@yahoo.com
		Mr Erwin T. Donelo	Teacher Coordinator			
	Venancio Siarza Memorial Elementary School	Mr Camilo E. Baldonado	Principal/ School Director		Dodiongan, digkilaan, Iligan City, Mindanao, Philippines	camilobaldonado@ yahoo.com
		Riche T. Macalood	Teacher Coordinator			
	Iliranan Elementary School	Mr Gary P. Magnanao	Principal/ School Director		So. Iliranan, Brgy. Codcod, San Carlos City, Negros Occidental	gary.magnanao@yahoo. com
		Ms Ma. Annabelle R. Baybado	Teacher Coordinator			
	Camotes National High School	Mrs Mila Saquibal Surbano	Principal/ School Director		Southern Poblacion, San Francisco, Camotes Ilands, Cebu, Philippines	mssurbano@teacher. deped.gov.ph/nique@ mail2world.com
		Mrs Marianila C. Barral	Teacher Coordinator			
	Cabasi Sta. Rosa Elementary School	Mr Emmanuel A. Paguntalan	Principal		Sta. Rosa Laguna, Guimbal, Iloilo Philippines	kimi_sapalaran@yahoo. com
		Kimi S. Nabuab	Teacher Coordinator			
	Caraga Regional Science High School	Ms Matilde J. Manliguis	Principal/ School Director		Purok 10, Barangay San Juan, Surigao City, Surigao del Norte	crshs13@gmail.com
		Ms Jennifer R. Jovita	Teacher Coordinator			
	J. Marquez Elementary School	Mr Peter Van C. Ang-ug	Principal		S.K. Pendatun Extension, Cotabato City	jmes1985@yahoo.com
		Mr Salik A. Solaiman	Teacher Coordinator			

Country	School	Contact Person		Designation	Address		Email
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		Ms Aileen C. Bolocon	Teacher Coordinator				
	Cotabato City Central Pilot School	Mr Wahabi L. Guiani	Principal/ School Director		Sinsuat Avenue, Cotabato City		wlguiani_49@yahoo.com
		Mr Mike S. Pascasio	Teacher Coordinator				
	Tabaco National High School	Ms Myrna B. Gonzales	Principal/ School Director		Panal, Tabaco City		reyesrld@yahoo.com
		Mr Ronaldo C. Reyes	Teacher Coordinator				
	Philippine Normal University - Center for Teaching and Learning	Ms Ma. Lourdes S. Agustin	Principal/ School Director		Taft Avenue, Manila		eljemabunga@yahoo.com
		Ms Maria Eljie M. Mabunga	Teacher Coordinator				
	La Curva Elementary School	Ms Florencia Embanacido	Principal/ School Director		San Jose Occidental Mindoro		glnnblgt@yahoo.com.ph
		Mr Glenn R. Balagot	Teacher Coordinator				
	Navotas Elementary School	Ms Loida Balasa	Principal		Los Martinez St. San Jose , Navotas City		loida.balasa@yahoo.com
	San Rafael	Ms Joji R. Fernando	Principal		#1 Taliba St., San Rafael Village, Navotas		srafa_nhs@yahoo.com
	San Roque	Ms Fresnedi V. Natividad	Principal		A. Leongson St., San Roque Navotas City		nfresnedi@yahoo.com
	San Jose Elementary School	Ms Sincletica Buena	Principal		Malilipat Albay		sincletica_buena@yahoo.com
	Daraga National Highschool	Ms Violeta J. Millete	Principal		Sagpon Daraga Albay, Philippine		daraganhs_1991@yahoo.com

Country	School	Contact Person	Designation	Address	Email
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	Alang-alang National Highschool	Mr Vernon Barraza	Teacher Coordinator	Real St. Alangalang, Leyte	vbarrazajr@yahoo.com
	Saint Bernard Central	Ms Teresita Lolo	Principal	Saint Bernard Southern Leyte	teresita.lolo@deped.gov.ph
	New Guinsaugon Elementary School	Ms Marlyn Beja	Principal	Guinsaugon, Saint Bernard, Southern Leyte	marlynpacatbeja@yahoo.com
	Barobo National High School	Ms Ma. Josie Contado	Principal	Barangay Barobo, Llorente, Eastern Samar	contasoma.josie@yahoo.com
	Kamora National High School	Ms Winnie Freda Domerez	District ALS/ Science Coordinator	Kabayan District - Kabayan Central School	N/A
	Camotes National High School	Ms Mila Surbano	Principal	Southern Poblacion San Francisco, Cebu	mila.surbano@deped.gov.ph
	Kibungan National High School	Mr Lito Miguel	Teacher Coordinator	Poblacion Kibungan, Benguet	chaengcha@yahoo.com
	Mating Mangosan Elementary School	Ms Lily Langbis	Teacher Coordinator	Sookan Gampang Bakun, Benguet	N/A
	Labinio-Acquisio Elementary School	Ms Dolores Fidel	Teacher Coordinator	Sookan Gampang Bakun, Benguet	N/A
	Kapangan Central School	Ms Jacqueline Calderon	Teacher Coordinator	Central Kapangan, Benguet	N/A
	Pakpakitan Elementary School	Ms Jovita Sapalit	Teacher Coordinator	Pakpakitan Madaymen Kibungan, Benguet	N/A
	Kanal Elementary School	Ms Guia Sinot	Teacher Coordinator	Bobok Bisal, Bokod, Benguet	N/A
	Bangao Elementary School	Ms Gloria Hilario	Teacher Coordinator	Bangao Ambuklao Bokod, Benguet	N/A

Country	School	Contact Person	Designation	Address	Email
	Balatoc Elementary School	Mr Ernesto Rimando	Teacher Coordinator	Balatoc Virac Itongon, Benguet	N/A
	Buyagan Elementary School	Ms Jenny Claire Tabdi	Teacher Coordinator	Buyagan Poblacion La Trinidad, Benguet	N/A
	Alejo M. Pacalso Memorial National High School	Mr Edgar Tomino	Teacher Coordinator	Bua Tuding Itogon, Benguet	sad_sie121@yahoo.com
	Sabalan National High School	Mr Wilbert Quidno	Teacher Coordinator	Kamog Sablan, Benguet	N/A
	Benguet National High School	Mr Oscar Banglot Jr.	Teacher Coordinator	Wangal La Trinidad, Benguet	ojsbanglot@yahoo.com
	Laurencio Fianza National High School	Ms Rhealinda Morenzo	Teacher Coordinator	Kireng Tinongdan Itogon, Benguet	N/A
	Sablan National High School	Ms Rosenda Monang	Teacher Coordinator	Sabalan, Benguet	N/A
	Apayao Elementary School	Mr Efren Capacillo	Teacher Coordinator	Baguio City	capacilloefren@yahoo.com
	Sagada National High School	Mr Sixto Daluyen Junior	Principal	Poblacion Sagada Mt. Province	N/A
	Lao National High School	Ms Jane Angluben	Principal	Lao Buguias, Benguet	jane.angluben@deped.gov.ph
	Puguis Elementary School	Ms Lilian Uled	Principal	Puguis La Trinidad, Benguet	ulepl@yahoo.com
	Toppan Elementary School	Mr Rogelio Alunday	Principal	Talac Gobgob Tabuk City, Kalinga	rda427@yahoo.com

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		Mrs Piyatida Kaewsumran	Teacher Coordinator		
	Anubanpinitwittaya Lampang School	Ms Sutthana Hunketipong	Principal/ School Director	144 Robwaing Rd. T. Suandok A. Muang Lampang	anubanpinitlp@hotmail. com
		Ms Tinnara Chumwong	Teacher Coordinator		
	Wat Soumpouathong School	Dr Amolwon Sriprasert	Principal/ School Director	Bangsam-Bangmaemaye Road. Bang- takean Tombol Songpenong Supanburi Province	asriprasert@gmail.com
	Kasintorn Academy	Dr Tanachit Kasintorn	Principal/ School Director	162 Puttamonton Sai 3 Road, Bangpai Bangkae Bangkok	kasintornacademy@ gmail.com
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	Wat Toomhoo School	Mrs Pimchawee Jitbunpot	Principal/ School Director	35/1 Moa 9 Tambol Thangam Am- phee Inburi Singburi Province	pimchawee14@hot- mail.com
		Mrs Jarnian Jaidee	Teacher Coordinator		
	Bangrakam School	Mr Renoo Changthong	Principal/ School Director	Moo 14 Bangrakam District Phitsanulok Province	bangrakam@hotmail. com
		Dr Pimpimon Thong Thien	Teacher Coordinator		
	Bangphonua School	Kitisak Phengsakul	Principal/ School Director	5/10 Moo 3 T. Bangphonua A. Samkhok, Pathumthani Province	bangphonua@gmail. com
		Mrs Naruemol Thongnat	Teacher Coordinator		
	Jirasart Whittaya School	Dr Jirapan Pimpan	Principal/ School Director	45 Moo 1 Cheegun Road, Pratoochai, Phra Nakhon - Si Ayutthaya	jirasart_70@hotmail. com/pssupalert190@ gmail.com
		Dr Pathompong Supalert	Teacher Coordinator		

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	Banmuangsampee School	Mrs Patchara Wongcomton	Principal/School Director	131/4 Banmuangsampee Lee District Lamphun Province	muangsampi@hotmail.com
		Mrs Nongnaphat Chuenchowwai	Teacher Coordinator		
	Lampang Wittaya School	Mr Tawit Paweenbampen	Director	14 Surane Road, Sobtui, Amphoe Muang, Lampang Province	tawitpaweenbampen@yahoo.com
		Mrs Orapin Kiatkulpakdee	Teacher Coordinator		
	Hung Hoi Secondary School	Le Hong Tho	Principal/School Director	Soc Don Hamlet, Hung Hoi Commune, Vinh Loi District, Bac Lieu Province	hghgtambl@gmail.com
		Huynh Hong Tam	Teacher Coordinator		
	Ben Tre City Secondary School	Nguyen Anh Dung	Principal/School Director	23 Le Qui Don Street, Ward 2, Ben Tre Province, Vietnam	N/A
		Pham Thi Thuy Hang	Vice-Principal/Coodinator		
	Ly Tu Trong Secondary School	Nguyen Tan Si	Principal/School Director	Tam Ky City, Quang Nam Province	nguyenbahaoht@gmail.com
		Nguyen Ba Hao	Teacher Coordinator		
	Nguyen Du Secondary School	Hoang Thi Le An	Principal/School Director	139 Nguyen Du Street, Ben Thanh Ward, District 1, Ho Chi Minh City	nguyenngocbichha@yahoo.com
		Nguyen Ngoc Bich Ha	Teacher Coordinator		

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	ACF Philippine Mission	Mr Suresh Murugesu	Technical Coordinator	Unit 2801, 28/F 88 Corporate Center, 141 Sedeno St., Salcedo Village, Makati City	coordws-ph@acffilipinas.org
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	Child Fund International, Phils.	Mr Erwin Peter C. Galido	Program Officer for SLA/Reina/ NCR	8th Floor Strata 100 Bldg., F. Ortigas Jr. Road, 1605, Ortigas Center, Pasig City	egalido@philippines.childfund.org
	Children International Philippines, Inc.	Mr Lemuel Bonete	Youth Program Coordinator	Room 206 and 207, Times Square Building, Examiner Street, West Triangle, Quezon City	N/A
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	Citizens' Disaster Response Center (CDRC)	Ms Suyin Christie Jamoralin	Research, Publication and Information Coordinator	72-A Times St., West Triangle Homes, Quezon City, 1104 Philippines	cdrc_1984@yahoo.com
	Community and Family Services International	Ms Melanie "Lala" Ruiz	Programme Associate	2/F Torres Building, 2442 Park Avenue Pasay City, Metro Manila	mruiz@cfsi.ph
	Corporate Network for Disaster Response (CNDR)	N/A	N/A	Unit 1504 One Magnificent Mile Condominium, San Miguel Ave., Ortigas Center, Pasig City, Philippines	secretariat@cndr.org.ph
	Department of Science and Technology (DOST)	Hon Mario G. Montejo	Secretary	2nd Floor, DOST Main Building, DOST Complex, Gen. Santos Avenue, Bicutan, Taguig City DOST	mgmontejo@dost.gov.ph
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	Galing Pook Foundation	Mr Eddie Dorotan	Executive Director	No. 25 Mahusay corner Malinis Streets, UP Village, Diliman 1101 Quezon City, Philippines	
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	Microsoft Philippines – Disaster Response Project	Ms Cheryll Ann Selda	Citizenship Specialist	N/A	philica@microsoft.com
	National Disaster Coordinating Council	Ms Crispina B. Abat	Chief, Planning Division Office of Civil Defense and Head, NDRRMC-TMG Secretariat	Camp Aguinaldo, Quezon City, Philippines	ndrrmc.secretariat@yahoo.com, crispinab.abat@yahoo.com
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	People's Initiative for Learning and Community Development (PILCD)	Mr Ramon Galvan Mapa	Executive Director	162 BPI Compound, Friendly Homes Subdivision, BPI Compound, Guisad, 2600 Baguio City P.O. Box 1057, Philippines	info@pilcd.org/Maparamon@gmail.com
	Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)	Dr Nathaniel Servando	Director	PAGASA, Science Garden Complex, Agham Road, Diliman, Quezon City	piias@pagasa.dost.gov.ph
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	SHINE Program	N/A	N/A	Hilton Hernando	
	Tarabang Para Sa Bicol, Inc.(TABI)	Ms Salve Sancarlos	Disaster Mitigation & Prep Program Officer	49 First park Subd., Sagson, Daraga , Albay	sancarlosbing@yahoo.com
	UNESCO	Dr Zenaida Domingo	Director	G/F Department of Foreign Affairs Building, 2330 Roxas Blvd Pasay City	unesco.ph@mozcom.com
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